NORTHWEST ALLEGED DISPOSAL AREA SAMPLING REPORT

Hamilton Army Airfield
Novato, Marin County, California

FINAL

Prepared for:

US Army BRAC Atlanta Field Office
Edward Keller, P.E.
BRAC Environmental Coordinator
Hamilton Army Airfield,
1 Burma Road.
Novato, California 94949

Prepared by:

US Army Corps of Engineers ®

Sacramento District
Environmental Design Section **January 2004**

DEPARTMENT OF THE ARMY
BASE REALIGNMENT AND CLOSURE
ATLANTA FIELD OFFICE
BRAC ENVIRONMENTAL COORDINATOR
HAMILTON ARMY AIRFIELD
1 BURMA ROAD
NOVATO, CALIFORNIA 94949

February 26, 2004

DAIM-BO-A-HA

Subject: Forwarding the *Northwest Alleged Disposal Area Sampling Report*, Hamilton Army Airfield, Novato, CA.

Ms. Naomi Feger
Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Dear Ms. Feger,

The Army is pleased to provide the *Northwest Alleged Disposal Area Sampling Report*, Hamilton Army Airfield, Novato, CA.

This submittal satisfies Task 3b of Board Order No. R2-2003-0076 Site Cleanup Requirements (SCR) – Hamilton Army Airfield for the Alleged HTRW Disposal Area portion of the ASR sites.

Based on the data, the Army concludes that the alleged disposal of hazardous material in this area did not occur, and recommends no further investigation or action be taken. I request your concurrence with this recommendation by March 28, 2004.

This document is being submitted to the RWQCB in accordance with SCR provision C8. It is also being distributed in accordance with SCR provision C9 for information.

If you have any questions, please contact me at (415) 883-6386.

Sincerely,

Edward Keller, P.E.
BRAC Environmental Coordinator
Hamilton Army Airfield

Enclosure

Copies Furnished:

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L. McMahan (DTSC)
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J. Browning (USFWS)
B. Stanton (USFWS)
L. Sullivan (NOAA)
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BRAC office files

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Northwest Alleged Disposal Area
Sampling Report
Hamilton Army Airfield, Novato, CA

February 2004

# COPIES	NAME	COMPANY	ADDRESS	CITY AND STATE	ZIP	PHONE AND FAX NUMBER
1hc + 1cd	Ed Keller, PE Edward.Keller@usace.army.mil	Department of the Army BRAC Environmental Coordinator	Hamilton Army Airfield 1 Burma Road Novato, CA 94949	Novato, CA	94949	Ph: (415) 883-6386 FAX: (415) 883-1033 Cell: (415) 250-8472
2 hc + 2 cd	Joy Lanzaro Joy.L.Lanzaro@usace.army.mil	BRAC Environmental Office – HAAF	Hamilton Army Airfield 1 Burma Road Novato, CA 94949	Novato, CA	94949	Ph: (415) 883-6386 FAX: (415) 883-1033
1hc + 1cd	Hugh Ashley Hugh.T.Ashley@usace.army.mil	BRAC Environmental Office – HAAF	Hamilton Army Airfield 1 Burma Road Novato, CA 94949	Novato, CA	94949	Ph: (415) 883-1016 FAX: (415) 883-1033
1hc + 1cd	Naomi Feger Nlf@rb2.swrcb.ca.gov	San Francisco Bay Regional Water Quality Control Board	1515 Clay Street, Suite 1400	Oakland, CA	94612	Ph: (510) 622-2328 FAX: (510) 622-2460
1 cd	Donn Diebert DDiebert@dtsc.ca.gov	California Environmental Protection Agency Department of Toxic Substances Control	Region 1-Site Mitigation Branch 8800 Cal Center Drive	Sacramento, CA	95827	Ph: (916) 255-3728
1 cd	Lance McMahan LMcmaha1@dtsc.ca.gov	California Environmental Protection Agency Department of Toxic Substances Control	Region 1-Site Mitigation Branch 8800 Cal Center Drive	Sacramento, CA	95827	Ph: (916) 255-3674 FAX: (916) 255-3697
1 cd	Jim Hardwick JHARDWIC@OSPR.DFG.CA.GOV	Department of Fish and Game	1700 K Street Ste. 250	Sacramento, CA	95814	Ph: (916) 327-0911
1 cd	Julie Yamamoto jyamamot@OSPR.DFG.CA.GOV	California Department of Fish and Game, OSPR	1700 K Street, Suite 250	Sacramento, CA	95814	Ph: (916) 323-4428 FAX: (916) 324-8829
1 cd	Jim Browning James_A_Browning@fws.gov	US Fish and Wildlife Service	2800 Cottage Way, Suite W-2605	Sacramento, CA	95825 -1846	Ph: (916) 414-6649 FAX: (916) 414-6712
1 cd	Laurie Sullivan laurie.sullivan@noaa.gov	NOAA CRC Program c/o USEPA, Region IX	Mail Code H-8-5 75 Hawthorne Street	San Francisco, CA	94105	Ph: (415) 972-3210 FAX: (415) 972-3211
1 cd	Ray Zimny Raymond.E.Zimny@usace.army.mil	USACE Sacramento District Attention: CESPK-ED-E	1325 "J" Street 12th Floor	Sacramento, CA	95814 -2922	Ph: (916) 557-6965 FAX: (916) 557-7865
1 cd	Rich Seraydarian seraydarian.rich@epa.gov	Environmental Protection Agency Region 9 DoD and Pacific Islands Section	SFD-8-3 75 Hawthorne St	San Francisco, CA	94105	Ph: (415) 972-3031 FAX:(415) 947-3518

Distribution List
Northwest Alleged Disposal Area
Sampling Report
Hamilton Army Airfield, Novato, CA

February 2004

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1 cd	David Doak david.v.doak@spd02.usace.army.mil	S.F. District USACE CE-SPN-PPMD	333 Market Street, 8th Floor	San Francisco, CA	94105	Ph: (415) 977-8562 FAX: (415) 977-8431
1 cd	Tom Gandesbery tgandesbery@scc.ca.gov	California State Coastal Conservancy	1330 Broadway Street, Ste 1100	Oakland, CA	94612	Ph: (510) 286-7028 FAX: (510) 286-0470
2 cds	Victor Bonilla bonillav@forscom.army.mil	US Army BRAC Atlanta Field Office	ATTN: AFPI-BC 1777 Hardee Avenue SW, Bldg 200	Fort McPherson, GA	30330 -1062	Ph: (404) 464-6346 FAX: (404) 464-7040
1 cd	Steve Goldbeck steveg@bcdc.ca.gov	Bay Conservation and Development Commission	50 California Street 26th floor	San Francisco, CA	94111	Ph: (415) 352-3611
1 cd	Beckye Stanton Beckye_stanton@fws.gov	US Fish and Wildlife Service	2800 Cottage Way W 2650	Sacramento, CA	95825	Ph: (916) 414-6602 FAX: (916) 414-6713
1 cd	Eric Polson	California State Coastal Conservancy	32 Upland Drive	Petaluma, CA	94952	Ph: (916) 801-6290

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Hamilton Army Airfield
Novato, Marin County, California

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Prepared for:

US Army BRAC Atlanta Field Office
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US Army Corps of Engineers ®

Sacramento District
Environmental Design Section **January 2004**

EXECUTIVE SUMMARY

This report presents the findings of the November 2003 soil sampling project conducted at the Northwest Alleged Disposal Area (NWADA) at Hamilton Army Airfield (HAAF). The primary purpose of this investigation was to evaluate the validity of the allegations and concerns of Mr. Robert T. Foley, a former team chief of a U.S. Army Command Logistics Evaluation Team. Mr. Foley claimed that during his inspection period of HAAF (1987 to 1989), that he was told the open land located immediately northwest of the end of the former runway was the location of an improper disposal area of hazardous materials. The types of materials identified by Mr. Foley included paints, cleaning solvents, bleach, petroleum products, radioactive calibration samples, and medical supplies.

In a subsequent on-site interview, Mr. Foley stated that the area in question had no disturbed soil when it was shown to him. Mr. Foley assumed from his recollection of the site that the hazardous materials had been poured on the ground and the empty containers were then disposed of in dumpsters or elsewhere.

During November 18-19, 2003, the U.S. Army Corps of Engineers (USACE) conducted a soil sampling event in accordance with the approved Northwest Alleged Disposal Area (NWADA) Work Plan (November 2003). USACE performed the sampling event in conjunction with the Friends of Novato Creek (FNC), representatives for Mr. Foley, who were present and determined the placement of sampling locations and sampling depths. A total of twenty-three soil samples from twelve locations were collected and sent for laboratory analysis.

During the collection of all twenty-three samples, field conditions were noted and recorded, including boring log preparation by a geologist and visual observations of any irregularities. Throughout the sampling event, there was no debris encountered in any of the bore holes, nor was there any evidence of any of the types of materials listed by Mr. Foley anywhere on the surface. Further, the lithology of each borehole indicated nothing but native material (i.e., no evidence of any fill or any other material that would indicate a disposal area). The laboratory analysis for each soil sample included a suite of analyses covering total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), semi-volatile organic compounds

(SVOCs), gross alpha and gross beta particles, pesticides, Title 22 metals, and mercury. A summary of the data is as follows:

- **TPH:** TPH Gasoline and TPH Diesel were not detected above the reporting limit in any sample.

- **VOC:** A few samples contained some measurable amounts of volatile organic compounds concentrations. The reported concentrations are considered low and do not indicate the presence of the materials identified by Mr. Foley. (See Appendix A – Chemical Data Quality Assessment Report (CDQAR).

- **SVOC:** Only one sample had small measurable amounts of SVOCs detected other than trace amounts of suspected laboratory contaminants. The reported concentration is considered low and does not indicate the presence of the materials alleged to have been disposed of at this site. (See Appendix A – Chemical Data Quality Assessment Report (CDQAR).

- **Gross Alpha and Beta Particles:** All samples contained some measurable amounts of gross alpha and gross beta particle concentrations. The reported concentrations are considered low and could be considered as background concentrations.

- **Pesticides:** DDD, DDE, and DDT were detected above the reporting limit in samples from the six-foot and fourteen-foot depths of direct push location HAAF-ADA-201, (see attached figure). However, the concentrations are comparable and consistent with the DDE/DDT concentrations found throughout the Hamilton Airfield Area.

- **Title 22 Metals:** Metal concentrations were present in all samples as expected (i.e., since metals are naturally occurring). The detected concentrations are within concentration parameters of other studies conducted at Hamilton Airfield (i.e., baseline/ambient levels) and do not appear to indicate the presence of any of the materials alleged to have been disposed of at this site.

- **Mercury:** Although mercury was present in minor concentrations in some samples, they are within concentration parameters of other studies conducted at Hamilton Airfield (i.e., baseline/ambient levels) and do not appear to indicate the presence of any of the materials alleged to have been disposed of at this site.

A complete tabulation of the entire NWADA sampling data is presented in Appendix B.

Conclusion: None of the field observations, soil lithology, or laboratory data would indicate that any disposal of hazardous materials or debris took place in the NWADA.

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Cover page: Photo of the Northwest Alleged Disposal Area (looking east from Ammo Hill).

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ACRONYMS

%R	Percent Recovery
ASTM	American Society for Testing and Materials
bgs	Below Ground Surface
BRAC	Base Realignment And Closure (Act)
BTEX	Benzene, Toluene, Ethyl benzene, and Xylenes
CDQAR	Chemical Data Quality Assessment Report
DDE	Dichloro Diphenyl Dichloro Ethylene ($C_{14}H_8Cl_4$) (pesticide)
DDD	Dichloro Diphenyl Dichloro Ethane, ($C_{14}H_{10}Cl_4$) (pesticide)
DDT	Dichloro Diphenyl Trichloro Ethane ($C_{14}H_9Cl_5$) (pesticide)
DTSC	Department of Toxic Substance Control
EDMS	Environmental Data Management System
EDS	Environmental Design Section
FNC	Friends of Novato Creek
FSP	Field Sampling Plan
GPS	Global Positional System
GSA	General Services Administration
HAFB	Hamilton Air Force Base
HAAF	Hamilton Army AirField
IDW	Investigation Derived Waste
MS	Matrix Spike
MSD	Matrix Spike Duplicate
MSL	Mean Sea Level
NWADA	Northwest Alleged Disposal Area
PNA	Polynuclear Aromatics
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RPD	Relative Percent Difference

SSHSP	Site Specific Health and Safety Plan
SVOC	Semivolatile Organic Compound
TPH-p	Total Petroleum Hydrocarbons - Purgeable
TPH-e	Total Petroleum Hydrocarbons - Extractable
USACE	U.S. Army Corps of Engineers
VOA	Volatile Organic Analysis
VOC	Volatile Organic Compound
WP	Work Plan

SAMPLING REPORT
NORTHWEST ALLEGED DISPOSAL AREA
HAMILTON ARMY AIRFIELD, CALIFORNIA

1.0 INTRODUCTION

This report presents the findings of the November 2003 soil sampling effort conducted for an investigation of an alleged disposal area located in the northwestern portion of Hamilton Army Airfield (HAAF) property. The Northwest Alleged Disposal Area (NWADA) is located just west of the north end of the former runway. This investigation was conducted to address concerns identified by Mr. Robert T. Foley in a letter dated May 2001. Mr. Foley is a retired military member and a former U.S. Army Command Logistics Evaluation Team, team chief. In his letters, Mr. Foley stated that during his inspection period at HAAF (1987 to 1989), that he was told that the open land located immediately northwest of the end of the former runway was the location of an improper disposal area of hazardous materials (Letters I & II, 2001). The types of materials identified in his letter include paints, cleaning solvents, bleach, petroleum products, radioactive calibration samples, and medical supplies. During a subsequent on site interview, Mr Foley stated that the area in question had no disturbed soil when it was shown to him. Mr Foley assumed from his recollection of the site that the hazardous materials had been poured on the ground and the empty containers were then disposed of in dumpsters or elsewhere.

The primary purpose of this investigation was to gather enough data to evaluate the validity of the allegations. If there were evidence to support the allegations, a subsequent investigation would be initiated at a later date to characterize the nature and extent of contamination, as the intent of the investigation described herein is simply to evaluate the validity of the allegations. A secondary purpose of this investigation was to identify the location of a historic slough that passed through the NWADA. This slough was indicated on topographic maps from 1914 and may have presented a preferential pathway for contaminant transport through the area.

The U.S. Army Corps of Engineers (USACE) had conducted this investigation on behalf of the US Army BRAC Atlanta Field Office Environmental Coordinator. This investigation

involved the collection of soil samples using a direct push technique and laboratory analysis of those samples. The sample locations that were determined in the workplan were agreed to by the Friends of Novato Creek (FNC), the California Department of Toxic Substance Control (DTSC), the Regional Water Quality Control Board (RWQCB) and the Army. Refinement of the sample locations and the determination of sample depth took place in the field in consultation with the FNC geologist. The FNC, RWQCB and the Army were present during the field activities.

1.1 Project Location and Site Description

HAAF is located approximately 20 miles north of San Francisco, California, in the city of Novato, Marin County. Figure 1-1 shows the general project location, HAAF is located along the western coastal range of San Pablo Bay, directly north of and connected to San Francisco Bay. Figure 1-2 shows the location of the NWADA located immediately west of the north end of the former runway and northeast of Landfill 26. The east portion of the NWADA is within the BRAC property and the rest is within the GSA Sale Property.

Presently, the NWADA is a low-lying area covered with low to medium high marsh grasses and experiences seasonal flooding. Topographic maps from 1914 indicate that a slough channel used to exist in the seasonal flooding area within the NWADA.

1.2 Site Background

In the early 1930's, Hamilton air base was built as a bomber installation by the U.S. Army Air Corps on ranches, farmlands, and reclaimed tidal wetlands. Military operations began in 1932 when it served as an airfield for fighter, bomber and transportation aircraft. In 1933, Hamilton air base started housing B-10 and B-12 bombers and, in 1937, phased into B-18s. Because the runway was not long enough to support the new and larger Boeing's B-17, the base became one of West Coast Air Training facilities and staging areas for Pacific Theater Operations. The base was renamed Hamilton Air Force Base (HAFB) in 1947 when it was transferred to the newly created U.S. Air Force.

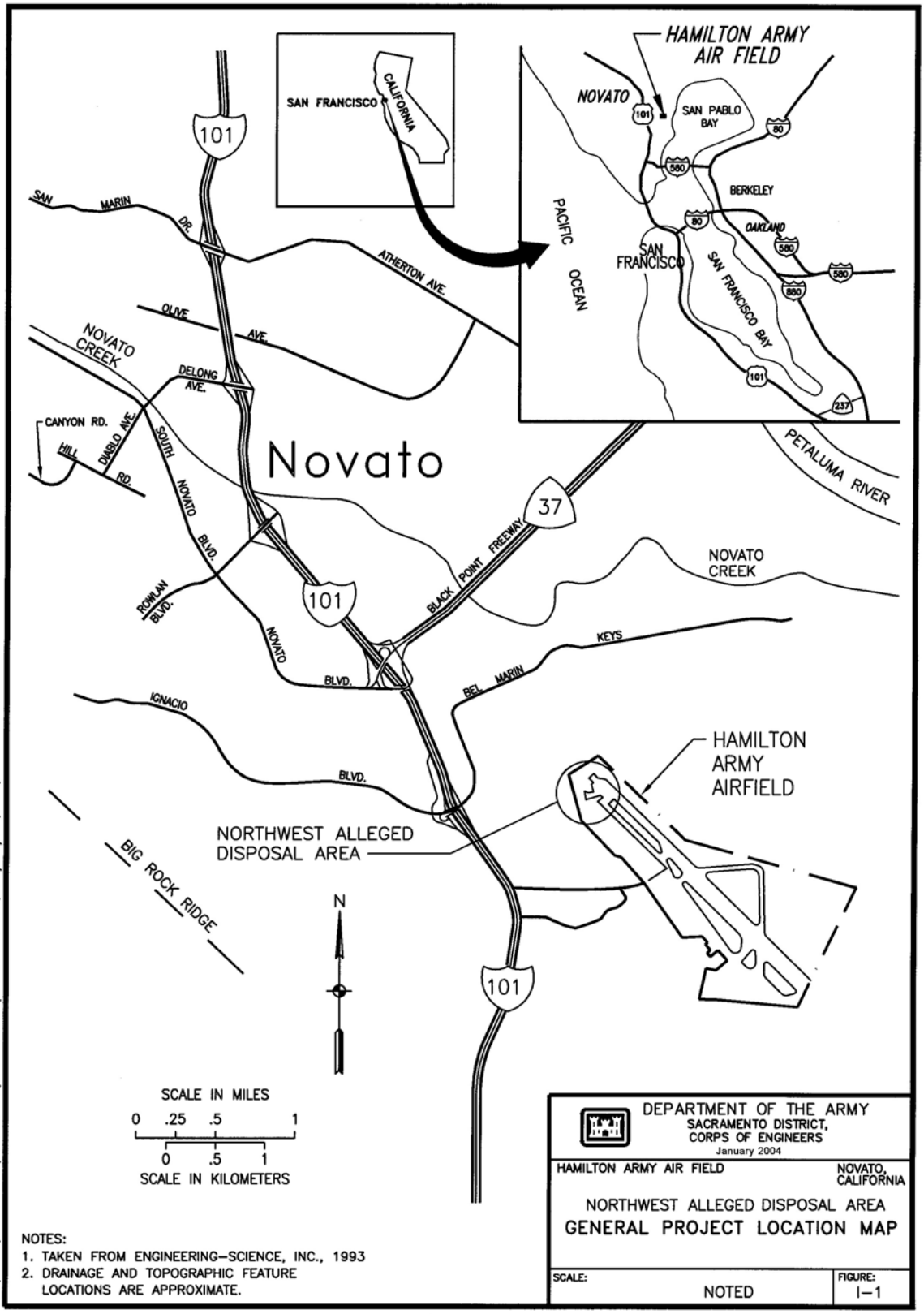
The U.S. Air Force ended military operation at the base in 1976. At the same time, the Army began aircraft operations at the airfield and supporting facilities with permission from the

U.S. Air Force. In time, the State of California claimed title to lands subject to tidal action of the San Pablo Bay. In 1984, some portions of the base were transferred to the U.S. Army and renamed Hamilton Army Airfield (HAAF). The base was declared surplus property under the Base Realignment And Closure Act (BRAC) of 1988. Aircraft operations were discontinued in March 1994.

Approximately 669 acres encompassing the runway and associated buildings were closed under the Army BRAC process and are termed as the U.S. Army BRAC Property. The remainder of the facility consists of the GSA Sale Property, the U.S. Coast Guard area, and the U.S. Navy housing area.

1.3 Geologic Setting

The project site is located within California's geologically and seismically active coastal range province. The province is characterized by a series of northwest-trending faults, mountain ranges, and valleys. Two geomorphic zones are distinct to HAAF; the Bay Plain zone and the Franciscan Upland zone (see Figure 1-3). The Bay Plain zone extends from the edge of San Pablo Bay to the foothills immediately west of HAAF adjacent to San Pablo Bay. The Franciscan Upland zone consists of the hills west of HAAF that are formed of sandstone and shale of the Franciscan Formation, which weathers to form a light sandy or silty soil that is moderately well drained; deposition by the local streams has created accumulations of clay, silt, sand, gravel, in the west-central portion of HAAF (J&SA, 1998).


HAMILTON ARMY AIR FIELD
SAN FRANCISCO
CALIFORNIA
NOVATO
SAN PABLO BAY
BERKELEY
OAKLAND
SAN FRANCISCO
PACIFIC OCEAN
SAN FRANCISCO BAY
101
80
580
880
237
SAN MARIN DR.
ATHERTON AVE.
OLIVE AVE.
NOVATO CREEK
DELONG AVE.
CANYON RD.
HILL RD.
DIABLO AVE.
SOUTH NOVATO BLVD.
ROWLAN BLVD.
Novato
PETALUMA RIVER
37
BLACK POINT FREEWAY
NOVATO CREEK
NOVATO BLVD.
KEYS
BEL MARIN
IGNACIO BLVD.
HAMILTON ARMY AIRFIELD
NORTHWEST ALLEGED DISPOSAL AREA
BIG ROCK RIDGE
N
SCALE IN MILES
0 .25 .5 1
0 .5 1
SCALE IN KILOMETERS
NOTES:
1. TAKEN FROM ENGINEERING–SCIENCE, INC., 1993
2. DRAINAGE AND TOPOGRAPHIC FEATURE LOCATIONS ARE APPROXIMATE.
C:\DATA\ACAD2000\PROJECTS\K-EMERICK\HGSAKe00.DWG, 01/21/03, 1:1,
DEPARTMENT OF THE ARMY
SACRAMENTO DISTRICT, CORPS OF ENGINEERS
January 2004
HAMILTON ARMY AIR FIELD
NOVATO, CALIFORNIA
NORTHWEST ALLEGED DISPOSAL AREA
GENERAL PROJECT LOCATION MAP
SCALE: NOTED
FIGURE: 1–1

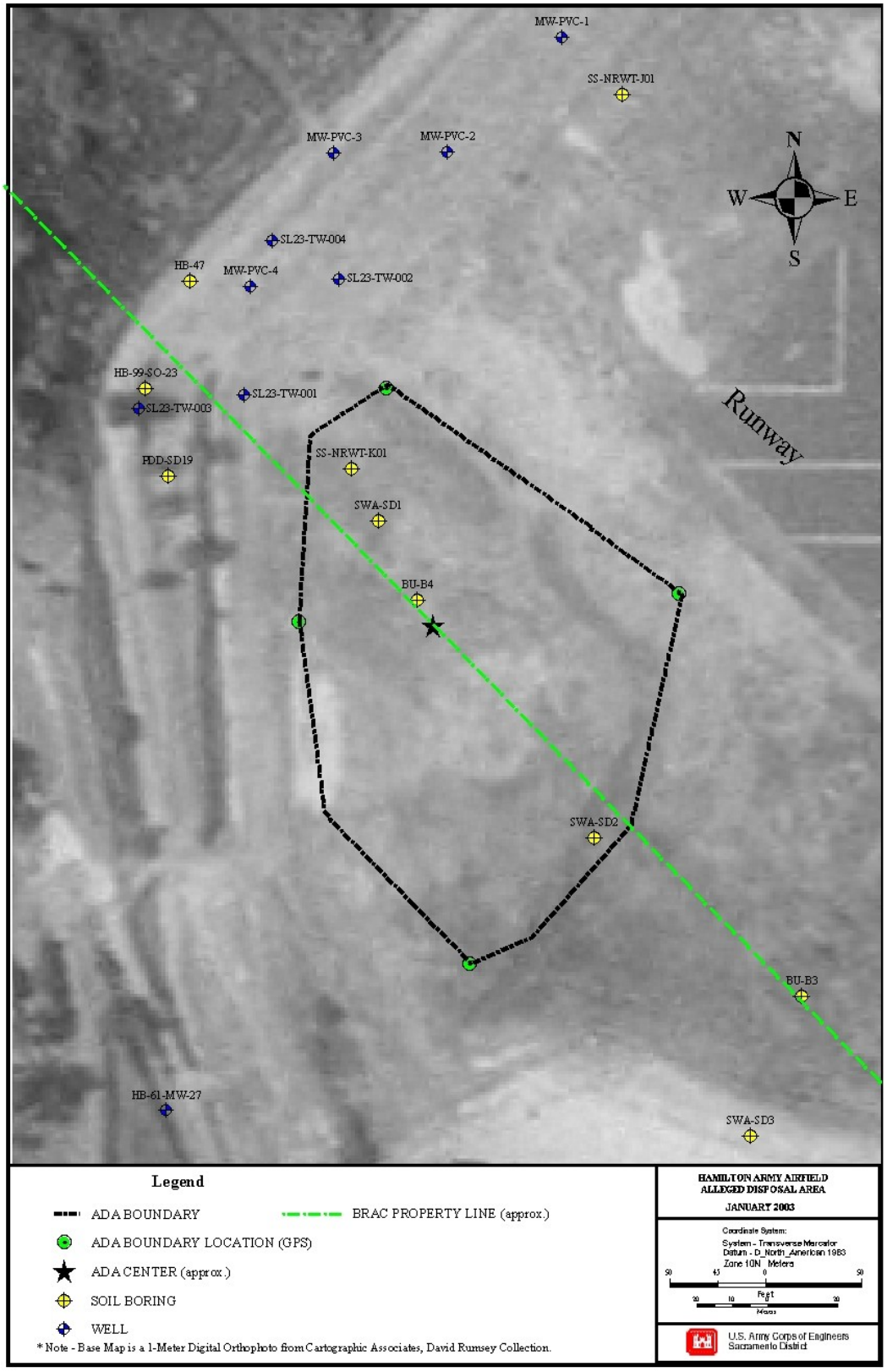


Figure 1-2. Alleged Disposal Area Location with Previous Investigation Data Points.

1.4 Site Geomorphology

The nearly level site consists of former mudflats and marshlands that have been separated from tidal action by dikes and levees since the early 1900's; the site had been drained by a system of trenches and pumps. As the site dried out and the soil became desiccated after being removed from tidal inundation, it began to settle below its original elevation. The water table is typically several feet below the surface and varies by season. The project site is located on a thin near-surface crust overlaying soft marine clays. The crust is composed of desiccated bay mud, and in some areas, consist of several feet of granular fill in the former runway and taxiway areas. Artificial fill (consisting of rock, soil, and other materials) was deposited on top of the bay mud to permit construction of the runway (J&SA, 1998).

Bay Mud consists of thick deposits of soft, unconsolidated, water-saturated, silty clays containing vegetative remains and is up to 70 feet thick. This soil type exhibits high compressibility, low shear strength, and generally low permeability and it is underlain by much stronger and less compressible soils.

1.5 Hydrogeology

The shallow groundwater at the HAAF has high salinity because of the historic influence of San Pablo Bay. Groundwater is of poor quality and is not used as a potable water source. The general direction of groundwater flow is to the east (WCC, 1985). However, low transmissivity of Bay Mud greatly reduces the movement of shallow groundwater into the San Pablo Bay.

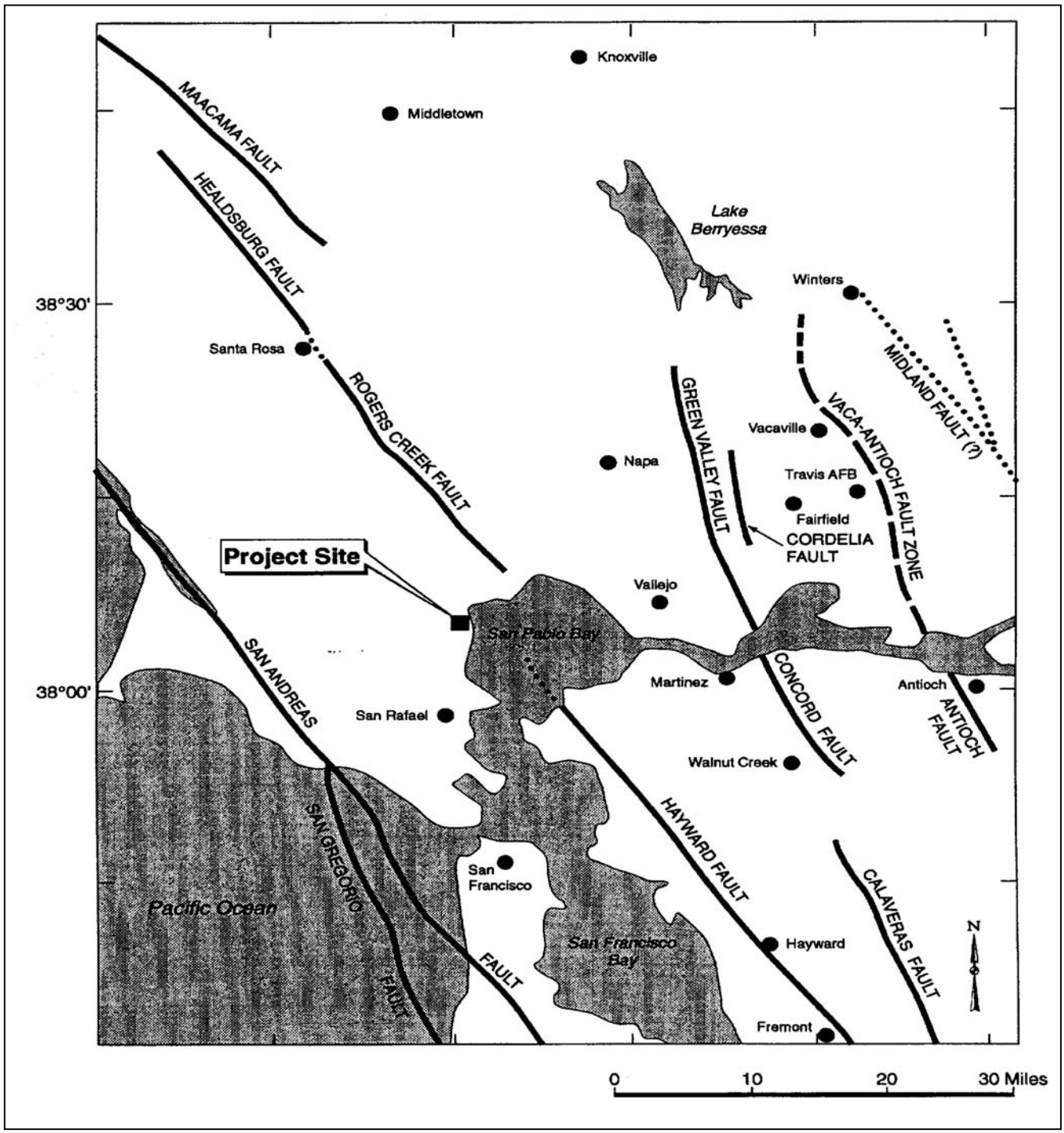


Figure 1-3. Geologic Setting.

1.6 Previous Investigations

The Northwest Alleged Disposal Area (NWADA) has not been investigated as an area of concern. However, the NWADA and the surrounding areas have been assessed and investigated numerous times under base-wide investigations conducted at HAAF (Figure 1-2, NWADA location with Previous Investigation Data Points).

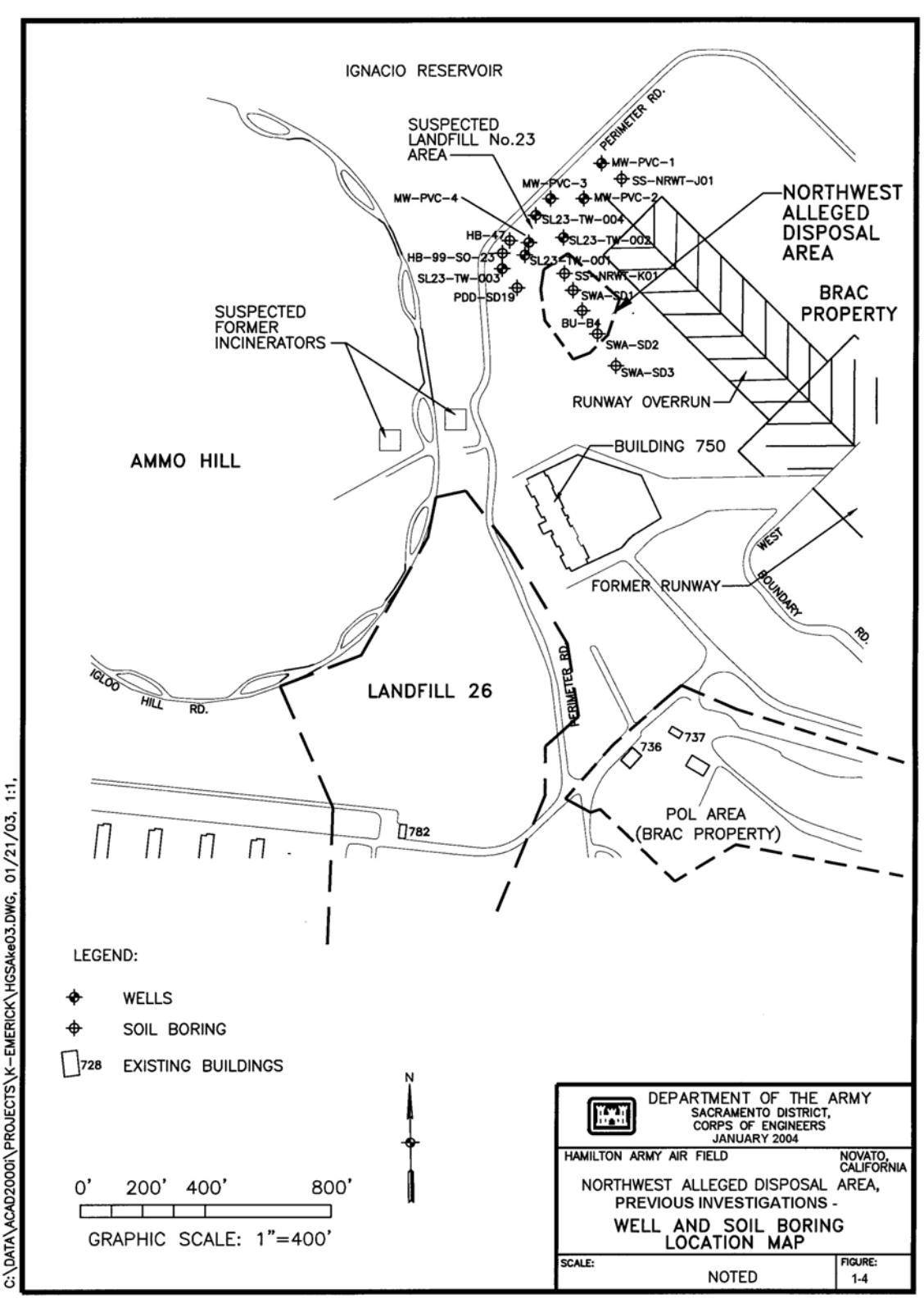
The NWADA is located on seasonal wetland and was investigated at a screening level as a site named the "Seasonal Wetland" as part of the base-wide wetlands investigation: the results of the investigation are reported in the Additional Environmental Investigation Report, BRAC Property, Hamilton Army Airfield (Woodward-Clyde, 1996). As part of the Wetlands investigation, soil sampling was conducted at two locations inside the boundary of the NWADA. Two near-surface soil samples and one soil sample at a depth 1.5 bgs were collected at two sampling locations. Soil samples were analyzed for oil and grease, BTEX, PNAs, TPH as gasoline, diesel and JP-4, herbicides and pesticides. Several metals including lead were detected above the baseline levels but less than twice the baseline values. Low concentration of DDE was also detected; herbicides, PNAs, BTEX, and petroleum hydrocarbons were not detected.

A Preliminary Assessment for the GSA Phase II Sale Area including the NWADA was conducted in 1995 by Woodward-Clyde. The Preliminary Assessment for HAAF GSA Phase II Sale Area (WWC, 1995) provided previous investigations and recommendations for areas of concern in the GSA II Sale Area. The Preliminary Assessment Report and the regulatory community recommended additional investigation activities be conducted at numerous areas including the suspected Landfill 23 (near Northwest Runway Area) and two suspected incinerator locations which are located near the NWADA, however, the NWADA was not identified as an area of concern warranting further investigation. Subsequently, these areas that warranted investigation were investigated by IT Corporation and the results and recommendations were provided in the Site Investigation Report, 800-B and Ammo Hill Parcels, GSA Phase II Sale area, Hamilton Army Airfield, Novato, California (IT Corp, 1997). As part of the investigation of 800-B and Ammo Hill Parcels, GSA Phase II Sale Area, soil samples and

groundwater samples were collected at the suspected Landfill 23 and two suspected incinerator locations.

The Preliminary Assessment Report identified pesticides, TPH, PNAs, VOCs and metals as contaminants of concern at the suspected Landfill 23 (WWC, 1995). The suspected Landfill 23 is located between Ignacio Reservoir Marsh and the NWADA; soil and groundwater sampling locations are located about 75-300 feet from the NWADA (Figure 1-4). Soil samples were collected at three different locations at different depths between 5 feet and 15 feet bgs and analyzed for metals, pesticides, TPH-e, TPH-p, and SVOCs. Ground water samples were collected at seven different locations and at different depths between 6 feet and 12.5 feet bgs.

Newly installed and existing monitoring wells were sampled throughout the GSA Phase II Sale Area and analyzed for TPH, VOCs, and metals. The monitoring wells (SL23-TW-001-004) and MW-PVC-1-4 which are located in the suspected Landfill 23, just north and within 400 feet of the NWADA, were tested for metals, pesticides, TPH, VOCs and SVOCs and reported in IT Corporation's Site Investigation Report, 800-B and Ammo Hill parcels, GSA Phase II sale Area.


IGNACIO RESERVOIR
SUSPECTED LANDFILL No.23 AREA
PERIMETER RD.
MW-PVC-1
SS-NRWT-J01
MW-PVC-3
MW-PVC-2
MW-PVC-4
SL23-TW-004
HB-47
SL23-TW-002
HB-99-SO-23
SL23-TW-001
SS-NRWT-K01
SL23-TW-003
PDD-SD19
SWA-SD1
BU-B4
SWA-SD2
SWA-SD3
NORTHWEST ALLEGED DISPOSAL AREA
BRAC PROPERTY
SUSPECTED FORMER INCINERATORS
RUNWAY OVERRUN
BUILDING 750
AMMO HILL
WEST BOUNDARY RD.
FORMER RUNWAY
IGLOO HILL RD.
LANDFILL 26
PERIMETER RD.
737
736
782
POL AREA (BRAC PROPERTY)
LEGEND:
WELLS
SOIL BORING
728 EXISTING BUILDINGS
N
0' 200' 400' 800'
GRAPHIC SCALE: 1"=400'
DEPARTMENT OF THE ARMY
SACRAMENTO DISTRICT, CORPS OF ENGINEERS
JANUARY 2004
HAMILTON ARMY AIR FIELD
NOVATO, CALIFORNIA
NORTHWEST ALLEGED DISPOSAL AREA, PREVIOUS INVESTIGATIONS -
WELL AND SOIL BORING LOCATION MAP
SCALE: NOTED
FIGURE: 1-4
C:\DATA\ACAD2000\I\PROJECTS\K-EMERICK\HGSAke03.DWG, 01/21/03, 1:1,

All groundwater contaminant concentration values for contaminants of concern for the NWADA were below the background values except for arsenic. Arsenic was found in three wells above the background level and the maximum value detected was 59 ug/kg (IT Corp., 1997). Analytical results from the base-wide groundwater samples indicated trace metals and volatile organic compounds occur in groundwater within the GSA Phase II Sale Area parcel.

IT Corporation's 1998 Site Investigation report concluded that the Contaminants Of Concerns detected at suspected Landfill 23 do not appear to be indicative of site-related activities and fall within the range of naturally occurring metals and organics. The report concluded that the suspect landfill 23 is most likely not a landfill.

As part of the 800-B and Ammo Hill Parcels, GSA Phase II Sale Area investigation, two incinerator locations were also investigated. According to the SI Report (IT Corp., 1997) no detections of nitroaromatics; a by-product of ammunition incineration was found; the detection of dioxins, furans, and copper appear to be associated with the fill material present, and the elevated levels of mercury appear to be associated with the bedrock.

The SI Report (IT Corp., 1997) summarized as the potential contaminants of concern were detected slightly above the background levels, however, the investigation found no evidence of incinerator material or waste at the suspected incinerator locations and no evidence of landfill wastes at the suspected Landfill 23. The Site Investigation Report concluded that the suspected Landfill 23 and the suspected Incinerator locations were not impacted by the past Army activities (IT Corp., 1997).

The final groundwater sampling for MW-PVC-1 through MW-PVC-4 located in the suspected Landfill 23 (Northwest Runway Area) was conducted in January 2002 and the results are reported in Groundwater Data Report, Final Well Sampling, Hamilton Army Airfield, Marin County, California (USACE, 2002). The groundwater samples were analyzed for Metals, VOCs, SVOCs and pesticides and only copper was detected above the two comparator values: (1) the proposed wetland, the continuous 4-hour Salt Water Aquatic Life Protection water quality goals for Enclosed Bays and Estuaries (Water Quality Goals, California Toxics Rule Criteria, August

2000) and (2) the Residential Cleanup Levels for the General Services Administration property (Woodward-Clyde Federal Services, 1995 Corrective Action Plan Hamilton Army Airfield GSA Phase I Sale Area).

1.7 Project Staffing

This study is being designed and implemented by the Environmental Design Section (EDS), USACE Sacramento District, under the general supervision of Rick Meagher, Section Chief. The Project Manager for this project is Ray Zimny, USACE.

The technical design team includes:

Person	Responsibility
Steve Carey	Geologist – Project Lead
Tim Crummett	Geologist – Sampling Team Lead
Kim Emerick	Environmental Engineer – Sampling Team
Carlton Fong	Chemist
Donna Maxey	Industrial Hygienist
Bruce Van Etten	Engineering Technician – Sampling Team
Chemical Laboratory	Applied P&CH Laboratory, Chino, CA. 91710

2.0 SAMPLING OBJECTIVES

The overall sampling objective for the alleged disposal area was to determine if contamination exists due to possible improper disposal of hazardous materials. To achieve this objective, a series of direct push soil samples were conducted as follows:

- To collect twenty-four soil samples, two from each of twelve push locations:

Approximately three out of the twelve sampling locations will be in the historical slough and nine sampling locations will be collected from elsewhere in the alleged disposal area. The analytical data for the collected samples will be evaluated to determine if the alleged disposal activity actually occurred or not.

- To determine the location and depth of the historic slough:

Approximately three locations within the site area have been determined for the purpose of locating the historic slough for soil sampling. Determination of the historic slough will be accomplished by pushing a series of direct push cores in a line (transect line) across the approximate location of the historic slough. By visual examination of the soil cores, the historic slough location and depth could possibly be determined.

These objectives were achieved, with the exception of one location where only one sample was collected due to hitting bedrock at a shallow depth. Any field sampling variations can be found in Section 3.0 of this report.

3.0 FIELD ACTIVITIES AND PROCEDURES

All fieldwork for this sampling effort was conducted in accordance with the Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP) contained within the project Work Plan (WP) dated November 2003. Any deviation from these plans that became necessary during the course of the investigation is noted in the following discussion. In addition, all fieldwork was conducted in accordance with the Site Safety and Health Plan (SSHP) prepared specifically for this project. Records of the fieldwork, including samples collected, were kept in a serial numbered, bound notebook unique to this study.

3.1 Field Sampling Procedures and Variations

The direct pushes were advanced using a direct push rig. The direct push core sampler consisted of three components: a cutting shoe, a drive head, and the sample sleeves. The sampler was driven into the subsurface using the hydraulics of the direct push rig. The initial core sample was collected in the clear plastic (tube) sleeve and sampler. The sampler was then extracted from the boring and the sample sleeve removed. A new sleeve was then placed in the sampler. The sampler was then advanced to the last depth of penetration by adding a series of drive rods, and the procedure was repeated.

To collect soil samples for field classification and chemical analysis, clear, plastic liners were used in the direct push core sampler. The sampler was pushed to the appropriate depth allowing a continuous core. The plastic liner or tube was removed from the sampler and the tubes were sliced open lengthwise and then the samples collected. An EnCore® sampler device was used to collect the first soil samples testing for VOC and TPH-purgeable (EPA, 1996). The EnCore® sampling device seals the soil in the container for laboratory shipment. Next soil samples from selected depths, selected for laboratory analysis, were collected from the plastic tube into eight-ounce glass jars. All soil samples were sent to the contracted lab using eight-once clear glass jars and EnCore samplers. Direct push cores were logged in the field in accordance with ASTM D-2488-93, "Standard Practice for Description and Identification of Soils (Visual Manual Procedure)."

Drilling logs forms (ENG Form 1836) were used in the field to record the soil descriptions, sampled depths, and the sample identification number (see Appendix C for completed direct push soil logs). The pushes were backfilled with neat cement, or filled with bentonite slurry through a tremie pipe placed at the bottom of the push. Direct push locations were surveyed using a global positioning system (GPS). Following the fieldwork, a map was prepared showing all sample locations (see Figure 3-1). Survey coordinates were recorded and submitted in electronic files that meet the Environmental Data Management System (EDMS) data exchange protocols. Where a QC duplicate was required, a sample was collected immediately below or above the primary sample if possible and placed into eight-ounce glass jar. The samples were labeled, sealed in Zip-lock^{TM} plastic bags, and placed in ice-filled coolers as described in the FSP. The samples were sent daily to the contracted laboratory, by land using Federal Express, under chain-of-custody protocol.

As planned, twelve direct push cores were accomplished. Two samples were collected from each core location except for location HAAF-ADA-206 where bedrock was encountered at a shallow depth; therefore, only one sample was collected. The samples from each core location were collected from a depth that was determined in the field. This determination was made in consultation with the FNC geologist on-site after inspection of the core. The USACE field sampling personal collected, packaged, shipped and had the twenty-three samples analyzed.

In addition to these twenty-three samples, the Army had agreed to collect; package and ship twelve split samples for analysis by the FNC. These twelve split samples were to be used to corroborate any USACE's sample analysis results if need be. The split samples were collected from any of the twenty-three samples stated above at the direction of FNC. The FNC samples were collected in EnCore samplers and clear glass jars provided by the FNC. At that time, FNC took responsibility for labeling, packaging, transport and analysis of these samples. A laboratory, under contract with the FNC, Sequoia Analytical, will analyze the additional primary samples at the direction of FNC.

Variations in the original sampling procedures as documented in the FSP were due to unforeseen complications and/or to improve data quality.

3.2 Locating the Historic Slough and Variations

Originally planned, three locations within the site area were going to be used to determine the location and, if possible, the depth of the historic slough for the purpose of soil sampling. Three transect lines, a series of direct push cores in a line, was going to be the method used to determine the location and depth of the historic slough. Then, by visual examination of the direct push cores, the location and depth of historic slough could be determined by differences found in soil horizons. The location of samples HAAF-ADA-201, HAAF-ADA-207, and HAAF-ADA-208 were going to be determined by this method (see Figure 3-1).

During field observations, the presence of the historic slough was evident from the slough-like depressions in the overgrown shallow grasses, the aerial photograph, and a series of direct pushes. Only one direct push transect line was conducted instead of the scheduled three; the location HAAF-ADA-208 (see figure 3-1) was the first transect line of direct pushes to try to determine the historic slough. From the soil cores, there was no unusual sediment stratification or evidence between soil horizons to determine the presence of any historic slough bottom or the presence of man-made fill. Direct push logs can be found in appendix C for review.

3.3 Soil Sampling Design and Variations

The twenty-three soil samples were collected from twelve direct push cores (HAAF-ADA-201 through HAAF-ADA-212) shown in Figure 3-1. Each direct push was conducted using Vironex's 5400 Series direct push rig using Geoprobe's four-foot clear tubes to a maximum depth of sixteen feet below ground surface (bgs). The FNC had the primary responsibility to locate the sampling depths.

The FNC selected twelve split sample locations and depths from within the twelve direct pushes for the purpose of their own chemical analysis suite. Side by side Encore samples were collected. The remaining soil was evenly split between the FNC and the Army's glass sampling jars for shipment to a laboratory for analysis. The FNC only analyzed a few compounds in a few

select samples. The FNC submitted one sample (FNC-202-02) for metals, pesticides, SVOC, TPH, and VOC analysis; three samples (FNC-205-06, FNC-211-06 and FNC-212-06) for TPH and VOC analysis; one sample (FNC-207-05) for metals, pesticide and SVOC analysis; and one sample (FNC-206-01) for pesticide analysis. Appendix D contains the chain of custody forms for this effort. In addition, one soil sample duplicate was collected for quality assurance.

All sampled locations were measured, marked, and electronically located using Trimble's Pro XRS Global Positioning System (GPS). Boring log sheets (Engineering Form 1836) were utilized during the soil sampling procedure to record the sediment structure (stratum).

Only two variations to sampling occurred. The first is that only twenty-three out of the scheduled twenty-four soil samples from the direct push cores were collected. The direct push located at HAAF-ADA-206 reached a maximum depth of eight feet due to hitting bedrock material composed of decomposing fine- to medium-grained sandstone; only one sample was collected from this direct push core. Also, direct pushes from HAAF-ADA-03, and HAAF-ADA-05 had push refusals due to bedrock material at depths of ten feet and fourteen feet, respectively.

The second variation is that the Army did not analyze four shallow samples for pesticides. During the field-sampling planning, it was agreed by all parties that samples from the top few feet of soil would not be analyzed for pesticides because previous studies at Hamilton Army Airfield already demonstrated the presence of pesticides in surface soils. The sample labels not analyzed are HAAF-ADA-202-02, HAAF-ADA-203-00, HAAF-ADA-206-01, and HAFF-ADA-210-02 (see Figure 3-1).

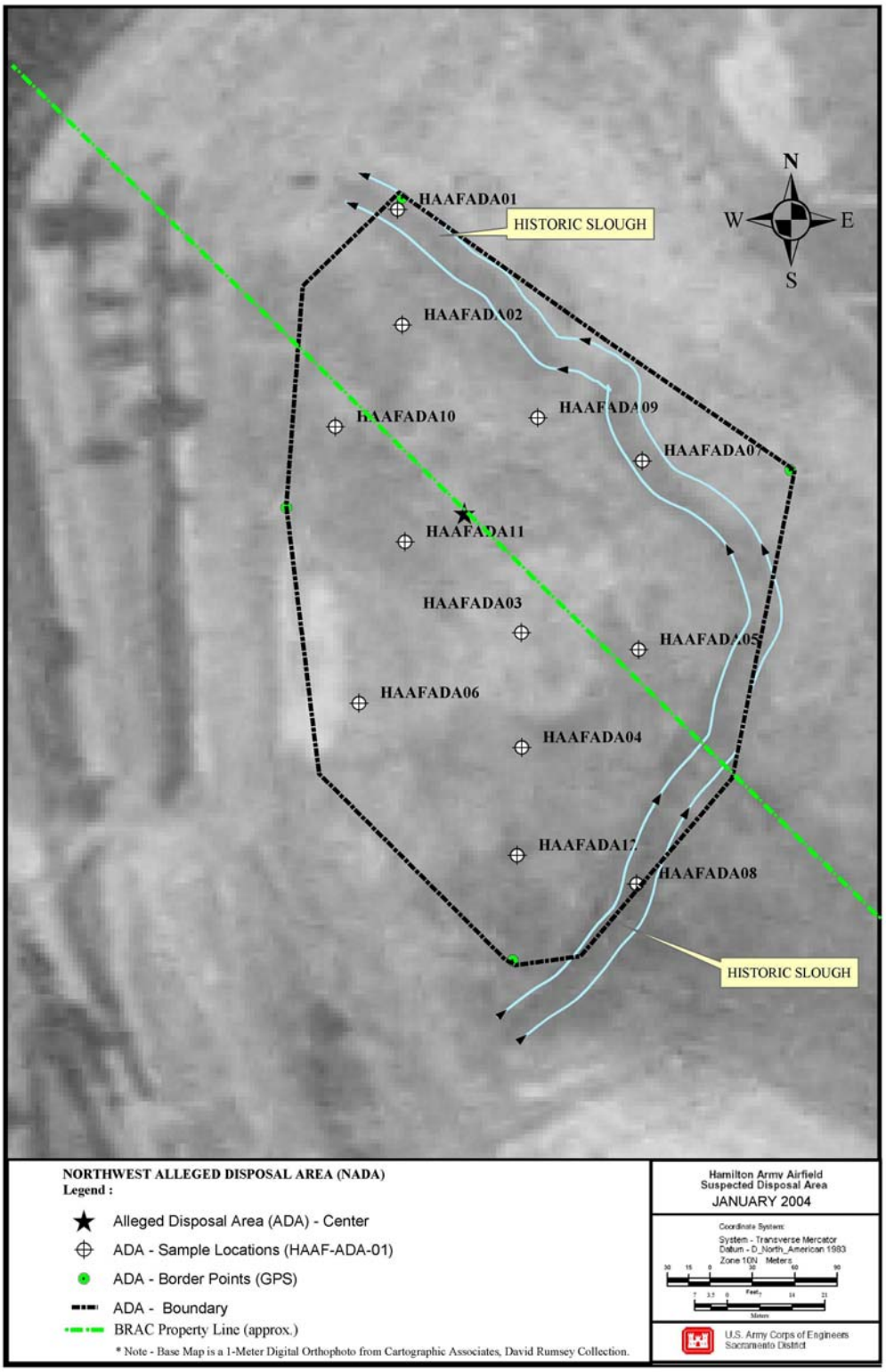


Figure 3-1. Direct push soil sample locations.

4.0 QUALITY CONTROL PROGRAM

All investigative data collected for this site was definitive data. Definitive data measures organic/inorganic particulates using EPA procedures and produces data that can be used in risk assessment, site characterization, alternative evaluation, engineering design, and monitoring during implementation. The data obtained conforms to the quality control requirements specified in the Quality Assurance Project Plan.

The Quality Assurance/Quality Control (QA/QC) evaluation of the laboratory data concludes that the results of the analytical data meet the requirements of the Quality Assurance Project Plan (QAPP) and per the analytical methods (see Appendix A – CDQAR). Specific Quality Assurance (QA) measurements were addressed to satisfy the QA objectives. Those measurements included precision, accuracy, representativeness, completeness, and comparability.

The analyses of soil samples collected during this site investigation are specific to this site based on data from previous investigations (see Section 1.3 for a list of previous environmental investigations). The analysis of the soil samples included all methods described in the QAPP. The soil samples were tested for the following: Total Petroleum Hydrocarbons, extractable and purgeable (TPH-E, TPH-P) by EPA method 8015B; Volatile Organic Compound (VOC) by EPA method 8260B; Semi-Volatile Organic Compound (SVOC) using EPA method 8270C; Gross Alpha and Gross Beta Particles using EPA method 9310; Pesticides using EPA method 8081, and California Title 22 metals by EPA methods 6010B and 7471A. The California Title 22 Metals include the following: antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc. Gasoline and diesel standards were used in the TPH analysis as appropriate.

4.1 Quality Control Samples

4.1.1 Field Replicates – N/A

4.1.2 Field Duplicates

The field quality control (QC) samples collected are as shown in Table 4-1. QC duplicate samples collected in the field provide precision information for the entire measurement system

including sample acquisition, homogeneity, handling, shipping, storage, preparation, and analysis. Although 10% duplicate samples (two samples) had been proposed in the work plan, one duplicate sample was collected from the field. The overall measure of precision was based on the one duplicate sample. Also, data from the twelve split samples collected for FNC may be used to corroborate any USACE's sample analysis results. QC sample location sites were based on information collected in the field. Duplicate samples were analyzed using the primary sample parameters. QC sample location sites were based on information collected in the field. Duplicate samples were analyzed using the primary sample parameters.

4.1.3 Matrix Spike/Matrix Spike Duplicates (MS/MSD)

A Matrix Spike (MS) is an environmental sample to which known concentrations of analytes have been added. The MS is taken through the entire analytical procedure and the recovery of the analytes is calculated. Results are expressed as percent recovery. The MS is used to evaluate the effect of the sample matrix on the accuracy of the analysis.

A Matrix Spike Duplicate (MSD) is an environmental sample that is divided into two separate aliquots, each of which is spiked with known concentrations of analytes. The two spiked aliquots are processed separately and the results compared to determine the effects of the matrix on the precision and accuracy of the analysis. Results are expressed as relative percent difference (RPD) and percent recovery (%R). Additional samples volumes were collected in the field to perform MS/MSD analysis for each analytical method.

Table 4-1. QC Summary for Soil Samples.

Analyses	Samples	QC Dups.	MS/MSD	Equipment Blank
8015B – Total Petroleum Hydrocarbon (TPH-p) – Purgeable, Gasoline	23	1	1/1	0
8015B - Total Petroleum Hydrocarbon (TPH-e) – Extractable, Diesel	23	1	1/1	0
8260B - Volatile Organic Compound (VOC)	23	1	1/1	0
8270C – Semi-Volatile Organic Compound (SVOC)	23	1	1/1	0
9310 – Gross Alpha and Gross Beta Particles	23	1	1/1	0
8081 - Pesticides	23	1	1/1	0

6010 – Title 22 Metals*	23	2	1/1	0
7471 - Mercury (Title 22 Metal)	23	2	1/1	0

*- Title 22 Metals includes antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc.

4.1.4 Blanks

4.1.4.1 Equipment Blanks

Because the sampling method used only disposable clear plastic direct push tubes to extract soil samples, no equipment blank samples were collected.

4.1.4.2 Temperature Blanks

A sample container (40-ml VOA vial) of water was labeled as a temperature blank. A temperature blank was included in each shipment and recorded on the Chain-of-Custody. The temperature blank was packaged and handled in the same manner as other samples in order to assure that the temperature is representative of the samples in that shipment. The laboratory used a calibrated thermometer to directly measure the temperature of this sample. This temperature reading determined whether the samples were stored under the appropriate thermal conditions.

4.1.5 Quality Assurance (QA) Samples

No QA split samples were collected for QA purposes. However, split samples were collected between the USACE field crew and the representative from the Friends of Novato Creek (FNC) for the purpose of laboratory analysis if any chemical discrepancies were evident. Matrix spikes/matrix spike duplicates (MS/MSD) will provide the analytical quality evaluation needed.

5.0 PRESENTATION OF RESULTS

During November 2003, twenty-three samples from twelve locations in the Northwest Alleged Disposal Area located at Hamilton Army Airfield were collected and analyzed by the Army from various depths (from 0 feet to 16 feet (bgs)). This section summarizes the results and presents ranges of detected concentrations. A complete tabulation of all data results from the Army's effort is present in Appendix B of this report. The laboratory reported results below the quantitation limits (down to the method detection limits) and indicated any of these concentrations as estimated.

To summarize the data findings:

- **TPH**: TPH Gasoline and TPH Diesel were not detected above the reporting limit in any of the twenty-three samples.

- **Gross Alpha and Beta Particles:** All sample contained some measurable amounts of gross alpha and gross beta particle concentrations. The reported concentrations are considered low and could be considered background concentration levels.

- **VOC:** Acetone and methylene chloride were detected, these are common laboratory contaminates and may have been introduced during sample analysis. Trace concentrations of VOCs were detected but deemed to be insignificant.

- **SVOC:** There is only one analyte [bis (2-chloroethyl) ether] that was detected and it is not a common laboratory contaminant. The data quality is acceptable. The reported concentration is considered low.

- **Pesticides:** DDD, DDE, and DDT were detected above the reporting limit in samples from the six-foot and fourteen-foot depths of direct push location HAAF-ADA-201, (see attached figure 3-1). However, the concentrations are comparable

and consistent with the Total DDT concentrations found throughout the Hamilton Airfield Area. The Army did not analyze four shallow samples for pesticides. During the field-sampling planning, it was agreed by all parties that samples from the top few feet of soil would not be analyzed for pesticides because previous studies at Hamilton Army Airfield demonstrated the presence of pesticides in surface soils. The sample labels not analyzed are HAAF-ADA-202-02, HAAF-ADA-203-00, HAAF-ADA-206-01, and HAFF-ADA-210-02.

- **Title 22 Metals:** Metal concentrations were present in all samples as expected (i.e., since metals are naturally occurring). The detected concentrations are within concentration parameters of other studies conducted at Hamilton Airfield (i.e., baseline/ambient levels) and do not appear to indicate the presence of any of the materials alleged to have been disposed of at this site.

- **Mercury:** Although mercury was present in minor concentrations in some samples, they are within concentration parameters of other studies conducted at Hamilton Airfield (i.e., baseline/ambient levels) and do not appear to indicate the presence of any of the materials alleged to have been disposed of at this site.

5.1 TPH

Table 5-1 illustrates that no samples out of the twenty-three samples contained any TPH concentrations that would establish concern for an alleged improper disposal of gasoline or diesel range hydrocarbons. TPH as gasoline or diesel fuel was not detected in any of the samples. See Appendix B, Table B-1 for presentation of the laboratory chemical data.

Table 5-1. TPH Summary	Lowest Concentration	Highest Concentration
TPH	**mg/kg**	**mg/kg**
Gasoline	N/D	0.03J
Diesel Fuel	2J	13J
N/D = Not Detected		

5.2 Gross Alpha and Gross Beta Particles

Table 5-2 illustrates the range of measurable amounts of gross alpha and gross beta particles. All twenty-three samples indicated some presence of gross alpha and gross beta particle concentrations. The detected levels of gross alpha and beta particles are slightly above the reporting limit (less than 2.5 times) indicating low levels throughout the NWADA site and could be considered as background concentrations.

At the time of this report, the laboratory data analysis illustrates that there is no evidence of radiation particulates alleged to be disposed at the NWADA site. See Appendix B, Table B-2 for presentation of the laboratory chemical data.

Table 5-2. Gross Alpha & Beta Particle Summary Gross Alpha and Beta Particles	Low Conc. pCi/g	High Conc. pCi/g
Gross Alpha Particle	3.81	11.9
Gross Beta Particle	7.94	25.6

5.3 Volatile Organic Compounds (VOC)

Table 5-3 illustrates the range of VOCs detected. A few samples from the twenty-three samples analyzed contained small measurable amounts of volatile organic compounds concentrations. In the case of acetone and methylene chloride, these are common laboratory contaminates and may have been introduced during sample analysis. As for the other VOC detects, the data quality is acceptable. The reported concentrations are considered low. If the alleged materials were disposed at the NWADA site, one would expect to see additional chemicals and at elevated concentrations. Since only a few chemicals were detected at low concentrations it is not likely that VOC material was disposed of at the site. At the time of this report, the laboratory data analysis illustrates no evidence of VOC materials at the NWADA site. See Appendix B, Table B-3 for presentation of the laboratory chemical data.

Table 5-3. VOC Summary Volatile Organic Compounds	Low Conc. ug/kg	High Conc. ug/kg
1,1,1-TRICHLOROETHANE	N/D	N/D

1,1,2,2-TETRACHLOROETHANE	N/D	N/D
1,1,2-TRICHLOROETHANE	N/D	N/D
1,1,2-TRICHLOROTRIFLUOROETHANE	N/D	N/D
1,1-DICHLOROETHANE	N/D	N/D
1,2-DICHLOROBENZENE	N/D	N/D
1,2-DICHLOROETHANE	N/D	N/D
1,2-DICHLOROPROPANE	N/D	N/D
1,3-DICHLOROBENZENE	N/D	N/D
1,4-DICHLOROBENZENE	N/D	N/D
2-BUTANONE (MEK)	N/D	16 J
2-HEXANONE	N/D	N/D
4-METHYL-2-PENTANONE (MIBK)	N/D	N/D
ACETONE	N/D	97 J
BENZENE	N/D	N/D
BROMODICHLOROMETHANE	N/D	N/D
BROMOFORM	N/D	N/D
BROMOMETHANE	N/D	N/D
CARBON DISULFIDE	N/D	69
CARBON TETRACHLORIDE	N/D	N/D
CHLOROBENZENE	N/D	N/D
CHLOROETHANE	N/D	N/D
CHLOROFORM	N/D	0.6 J
CHLOROMETHANE	N/D	N/D
CIS-1,2-DICHLOROETHENE	N/D	N/D
CIS-1,3-DICHLOROPROPENE	N/D	N/D
DIBROMOCHLOROMETHANE	N/D	N/D
DICHLORODIFLUOROMETHANE	N/D	N/D
ETHYLBENZENE	N/D	N/D
METHYLENE CHLORIDE	3 J	9 J
STYRENE	N/D	N/D
TETRACHLOROETHENE	N/D	N/D
TOLUENE	N/D	N/D
TOLUENE-D8	N/D	N/D
TRANS-1,2-DICHLOROETHENE	N/D	N/D
TRANS-1,3-DICHLOROPROPENE	N/D	N/D
TRICHLOROETHENE	N/D	N/D
TRICHLOROFLUOROMETHANE	N/D	N/D
VINYL ACETATE	N/D	N/D
VINYL CHLORIDE	N/D	N/D

XYLENES (TOTAL)	N/D	N/D
N/D = Not Detected		

5.4 Semi-Volatile Organic Compounds (SVOC)

Table 5-4 illustrates that only one sample from the twenty-three samples contained some small measurable amounts of SVOC concentrations. There is only one analyte that was detected and it is not a common laboratory contaminant. The data quality is acceptable. The reported concentration is considered low. If SVOC type material were disposed at the NWADA site, one would expect to see additional chemicals and at elevated concentrations. Since only one chemical was detected at a trace concentration it is not likely that material was disposed of at the site. See Appendix B, Table B-4 for presentation of the laboratory chemical data.

Table 5-4. SVOC Summary	Low Conc.	High Conc.
Semi-Volatile Organic Compounds	**ug/kg**	**ug/kg**
1,2,4-TRICHLOROBENZENE	N/D	N/D
1,2-DICHLOROBENZENE	N/D	N/D
1,3-DICHLOROBENZENE	N/D	N/D
1,4-DICHLOROBENZENE	N/D	N/D
2,4,5-TRICHLOROPHENOL	N/D	N/D
2,4,6-TRICHLOROPHENOL	N/D	N/D
2,4-DICHLOROPHENOL	N/D	N/D
2,4-DIMETHYLPHENOL	N/D	N/D
2,4-DINITROPHENOL	N/D	N/D
2,4-DINITROTOLUENE	N/D	N/D
2,6-DICHLOROPHENOL	N/D	N/D
2,6-DINITROTOLUENE	N/D	N/D
2-CHLORONAPHTHALENE	N/D	N/D
2-CHLOROPHENOL	N/D	N/D
2-METHYL-4,6-DINITROPHENOL	N/D	N/D
2-METHYLNAPHTHALENE	N/D	N/D
2-METHYLPHENOL	N/D	N/D
2-NITROANILINE	N/D	N/D
2-NITROPHENOL	N/D	N/D
3,3'-DICHLOROBENZIDINE	N/D	N/D
3-NITROANILINE	N/D	N/D
4-BROMOPHENYL-PHENYLETHER	N/D	N/D

4-CHLORO-3-METHYLPHENOL	N/D	N/D
4-CHLOROANILINE	N/D	N/D
4-CHLOROPHENYL PHENYL ETHER	N/D	N/D
4-METHYLPHENOL	N/D	N/D
4-NITROANILINE	N/D	N/D
4-NITROPHENOL	N/D	N/D
ACENAPHTHENE	N/D	N/D
ACENAPHTHYLENE	N/D	N/D
ANTHRACENE	N/D	N/D
BENZO(A)ANTHRACENE	N/D	N/D
BENZO(A)PYRENE	N/D	N/D
BENZO(B)FLUORANTHENE	N/D	N/D
BENZO(G,H,I)PERYLENE	N/D	N/D
BENZO(K)FLUORANTHENE	N/D	N/D
BENZYL ALCOHOL	N/D	N/D
BIS(2-CHLOROETHOXY)METHANE	N/D	N/D
BIS(2-CHLOROETHYL)ETHER	N/D	49 J
BIS(2-CHLOROISOPROPYL)ETHER	N/D	N/D
BIS(2-ETHYLHEXYL)PHTHALATE	N/D	N/D
BUTYLBENZYLPHTHALATE	N/D	N/D
CHRYSENE	N/D	N/D
DIBENZ(A,H)ANTHRACENE	N/D	N/D
DIBENZOFURAN	N/D	N/D
DIETHYL PHTHALATE	N/D	N/D
DIMETHYLPHTHALATE	N/D	N/D
DI-N-BUTYL PHTHALATE	N/D	N/D
DI-N-OCTYL PHTHALATE	N/D	N/D
FLUORANTHENE	N/D	N/D
FLUORENE	N/D	N/D
HEXACHLOROBENZENE	N/D	N/D
HEXACHLOROBUTADIENE	N/D	N/D
HEXACHLOROCYCLOPENTADIENE	N/D	N/D
HEXACHLOROETHANE	N/D	N/D
INDENO(1,2,3-CD)PYRENE	N/D	N/D
ISOPHORONE	N/D	N/D
NAPHTHALENE	N/D	N/D
NITROBENZENE	N/D	N/D
N-NITROSO-DI-N-PROPYLAMINE	N/D	N/D
N-NITROSODIPHENYLAMINE	N/D	N/D
PENTACHLOROPHENOL	N/D	N/D
PHENANTHRENE	N/D	N/D

PHENOL	N/D	N/D
PYRENE	N/D	N/D
N/D = Not Detected		

5.5 Pesticides

Table 5-5 illustrates that three samples out of the nineteen samples analyzed contained varied concentrations of pesticides. Four samples were not analyzed for pesticides; they are HAAF-ADA-202-02, HAAF-ADA-203-00, HAAF-ADA-206-01, and HAFF-ADA-210-02. Sample HAAF-ADA-201-14 contained the highest concentration of pesticide (339 ug/kg). At the time of this report, there are several pesticide studies being conducted at HAAF. From these studies, it is a known fact that varying pesticide concentrations can be found throughout the Hamilton Airfield Area (including the NWADA site). The pesticide concentrations in this report do not indicate that the NWADA site is significantly different than the rest of the Hamilton Airfield Area. See Appendix B, Table B-5 for presentation of the laboratory chemical data.

Table 5-5. Pesticides Summary	**Low Conc.**	**High Conc.**
Pesticides	ug/kg	ug/kg
4,4'-DDE	N/D	8
4,4'-DDT	N/D	339
4,4'-DDD	N/D	60
a-BHC	N/D	N/D
a-Chlordane	N/D	N/D
Aldrin	N/D	N/D
b-BHC	N/D	N/D
d-BHC	N/D	N/D
Dieldrin	N/D	N/D
Endosulfan I	N/D	N/D
Endosulfan II	N/D	N/D
Endosulfan sulfate	N/D	N/D
Endrin	N/D	N/D
Endrin aldehyde	N/D	N/D
Endrin ketone	N/D	N/D
g-BHC (Lindane)	N/D	N/D
g-Chlordane	N/D	N/D
Heptachlor	N/D	N/D
Heptachlor epoxide	N/D	N/D

Methoxychlor	N/D	N/D
Toxaphene	N/D	N/D

5.6 California Title 22 Metals

A total of twenty-three soil samples were collected and analyzed. Metal concentrations were present in all samples as expected (i.e., since metals are naturally occurring). The detected concentrations are within concentration parameters of other studies conducted at Hamilton Airfield (i.e., baseline/ambient levels). The results of this analysis do not appear to indicate an improper disposal of hazardous materials. See Appendix B, Table B-6 for presentation of the laboratory chemical data.

Table 5-6. California Title 22 Metals Summary	**Low Conc.**	**High Conc.**
Title 22 Metals	**mg/kg**	**mg/kg**
Antimony (Sb)	N/D	0.52 J
Arsenic (As)	1.0 J	12.1
Barium (Ba)	22.1 J	147
Beryllium (Be)	N/D	1.9
Cadmium (Cd)	N/D	0.25 J
Chromium (Cr)	6.9 J	110
Cobalt (Co)	2.9 J	17.6
Copper (Cu)	3.9 J	48.4
Lead (Pb)	4.7 J	20.4 J
Mercury (Hg)	0.04 J	0.68
Molybdenum (Mo)	N/D	3.8
Nickel (Ni)	4.1 J	105
Selenium (Se)	N/D	2.7
Silver (Ag)	N/D	0.3 J
Thallium (Tl)	N/D	N/D
Vanadium (V)	12.2	90.5
Zinc (Zn)	12.2	111

N/D = Not Detected

6.0 REFERENCES

American Society of Testing and Materials (ASTM). 1997. Annual Book of ASTM Standards, Volume 4.08. *Standard Practice for Description and Identification of Soils (Visual Manual Procedure), D2488-93,* West Conshohocken, Pennsylvania.

Department of the Army (DOA). 2001. *Focused Feasibility Study (Inboard Sites), BRAC Property, Hamilton Army Airfield, Volume 1.* Novato, California. February 2001.

Foley, Robert T. (Letter I). May 11, 2001. Report on inspections at HAAF – HQ6USA-DCSLOG-CLET. Novato, CA. 94949.

Foley, Robert T. (Letter II). September 11, 2001. Follow-up to May 11, 2001 letter. Novato, CA. 94949.

Jones & Stokes Associates, Inc. (J&SA). 1998. *Hamilton Wetland Restoration Plan: Volume II: Final EIS/EIS.* Sacramento, CA. December 1998.

International Technology Corporation (IT Corp.). 1997. *Site Investigation Report 800-B and Ammo Hill Parcels, GSA Phase II Sale Area, Hamilton Army Airfield, Novato, California: Volume 1.* Martinez, California. August/September 1997.

U.S. Environmental Protection Agency (EPA). 1996. *Test Methods for Evaluating Solid Waste Physical/Chemical Methods.* Third Edition.

Woodward-Clyde Consultants (WCC). 1985. *Hamilton Air force Base, GSA Sale Area Confirmation Study for Surface and Subsurface Hazardous Materials Contamination, Final Report.* Omaha, Nebraska.

Woodward-Clyde (WCC). 1995. *Preliminary Assessment Report for Hamilton Army Airfield GSA Phase II Sale Area.* Project No. 7150; Revision 1.0. Sacramento, California. September 25, 1995.

Woodward-Clyde (WCC). 1996. *Additional Environmental Investigation Report, BRAC Property, Hamilton Army Airfield. Volume 1 of 7.* Oakland, California. February 23, 1996.

Woodward-Clyde (WCC). 1998. *Draft Hamilton Wetlands Conceptual Restoration Plan.* Omaha, Nebraska.

Appendix A

Chemical Data Quality Assessment Report

For Northwest Alleged Disposal Area

Hamilton Army Airfield, California

TABLE OF CONTENTS

Table of Acronyms

APCL	Applied P & Ch Laboratory
CDQAR	Chemical Data Quality Assessment Report
DRO	Diesel Range Organics
GRO	Gasoline Range Organics
ICP	Inductively Coupled Plasma
ICS	Interference Check Sample
MB	Method Blank
MS	Matrix Spike
MSD	Matrix Spike Duplicate
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RPD	Relative Percent Difference
SVOC	Semivolatile Organic Compounds
TPH	Total Petroleum Hydrocarbons
USACE	U.S. Army Corps of Engineers
VOC	Volatile Organic Compounds

1. Introduction

This Chemical Data Quality Assessment Report (CDQAR) presents the evaluation of the quality of the analytical results from soil samples collected by the U.S. Army Corps of Engineers (USACE), Sacramento District, Environmental Engineering Branch, Environmental Design Section personnel on November 18 and 19, 2003. All data were evaluated against the requirements in the Final Northwest Alleged Disposal Area Quality Assurance Project Plan (QAPP), USACE Sacramento District, November 2003.

For this field effort, soil samples were collected from 12 direct push locations. Two samples were collected from each core location with the maximum depth being 14 feet. An environmental investigator representing the Friends of Novato Creek determined the sample collection depths. Collected soil samples were analyzed for the analytical parameters listed in the table below.

Summary of Analytical Methods

Parameters	Preparatory Methods	Analytical Methods
CAM 17 Metals (aka Title 22 Metals)	SW3050B / Method	SW6010B / SW7471A
Pesticides	SW3550B	SW8081A[1]
TPH Purgeable GRO	SW5035	SW8015B
TPH Extractable DRO	SW3550B	SW8015B
Volatile Organic Compounds	SW5035	SW8260B
Semi-Volatile Organic Compounds	SW3550B	SW8270C
Gross Alpha and Beta	Laboratory SOP	SW9310

[1] Samples HAAF-ADA-206-01, HAAF-ADA-203-00, HAAF-ADA-202-02, and HAAF-ADA-210-02 were not analyzed for SW8081A. Please refer to the Northwest Alleged Disposal Area Sampling Report for discussion.

All samples were properly packaged in ice coolers and shipped to Applied P & Ch Laboratory (APCL) in Chino, California for chemical analyses. APCL contracted samples for Gross Alpha and Beta analysis to General Engineering Laboratories in Charleston, South Carolina. As an additional means of evaluating overall data quality, two quality assurance (QA) split samples were collected and shipped to EMAX Laboratories in Torrance, California for

chemical analysis. All laboratories maintain current certification with the State of California and have been validated by the USACE Center of Expertise.

2. Project Objectives and Data Quality Objectives

The primary purpose of this investigation is to address concerns identified by Mr. Robert T. Foley in a letter dated May 2001. Mr. Foley is a retired military member and a former U.S. Army hazardous materials inspector. In his letters, Mr. Foley claims that during his inspection period of hazardous materials at Hamilton Army Airfield (1984 to 1986), he was told that the open land located immediately northwest of the end of the former runway was the location of an improper disposal area of hazardous materials. The types of materials identified in his letter include paints, cleaning solvents, bleach, petroleum products, radioactive calibration samples, and medical supplies.

The data collected from this field effort were used to either close the issue by proving the claims are inaccurate, or to validate the claims by finding contamination and/or materials consistent with the issues identified in the letters. If evidence existed to support the claims, a subsequent investigation would likely be initiated at a later date to characterize the nature and extent of contamination, as the intent of the investigation described herein is simply to evaluate the validity of the claims. A secondary purpose of this investigation is to identify the location of a historic slough that passed through the Northwest Alleged Disposal Area. This slough is indicated on topographic maps from 1914 and may have presented a preferential pathway for contaminant transport through the area. The investigation findings are presented in Northwest Alleged Disposal Area Sampling Report.

3. Data Adequacy and Completeness Goals

The following sections provide an assessment of data quality, data usability and completeness goals by analytical method.

3.1 Volatile Organic Compounds By Method SW8260B

Twenty-three (23) soil samples were collected for the determination of volatile organic compounds (VOC) by Gas Chromatography/Mass Spectroscopy Method SW8260B.

Preservation and Holding Time. All samples were collected in the proper container and stored within 4–6 degrees Celsius as specified in the Northwest Alleged Disposal Area Quality Assurance Project Plan (QAPP). The samples were analyzed within the method prescribed holding time of 14 days from date of collection.

Method Blanks. Method blanks (MB) were analyzed with each analytical batch of 20 or fewer samples. A total of three MBs are associated with the project samples. In two of MBs, acetone and methylene chloride were detected at trace concentrations. In the third MB, only methylene chloride was detected. Both acetone and methylene chloride are considered common laboratory contaminates. All methylene chloride and acetone sample results within five times the blank concentration were ***qualified as estimated non-detects*** at an elevated reporting limit due to blank contamination.

Surrogates. Surrogates were added to each sample to measure sample specific matrix interferences and laboratory performance. All surrogate recoveries were within acceptance criteria.

Internal Standards. Internal standards were added to each sample to ensure the stability of instrument sensitivity and response during each analysis. All internal standard data were within acceptance criteria.

Laboratory Control Spike Samples. Laboratory control spikes were analyzed with each analytical batch to provide information on the accuracy of the analytical method and on the laboratory performance. All spiked analytes were recovered within the acceptable recovery limits.

Matrix Spike Samples. One sample was designated for matrix spike (MS)/matrix spike duplicate (MSD) analysis to determine precision and accuracy of the analytical method on various matrices and to demonstrate acceptable analyte recovery by the laboratory at the time of

sample analysis. All MS/MSD recoveries and relative percent difference (RPD) values were within acceptance criteria.

Field Duplicate Precision. Field duplicate samples were collected and analyzed as an indication of overall precision. One field duplicate sample was collected for the 23 samples. All analytes detected in the primary sample were also detected in the field duplicate sample within the 50 RPD criteria.

Instrument Calibration. Instrument tune data were reviewed to ensure mass resolution, identification, and sensitivity throughout the analytical sequence. All tune data were within method acceptance criteria. Initial calibration and continuing calibration data were reviewed to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. All calibration data were within method acceptance criteria.

Overall Assessment and Completeness. All VOC data met the requirements of the method and the project QAPP, and are considered usable for its intended purpose. The minor quality control (QC) deficiencies noted above are typically observed in data sets and do not impact the data usability. A limited number of acetone and methylene chloride results were qualified as estimated non-detects at an elevated reporting limit due to method blank contamination. There were no rejected data. Analytical and technical completeness goals of 90 percent were met.

3.2 Semi-Volatile Organic Compounds By Method SW8270C

Twenty-three (23) soil samples were collected for the determination of semi-volatile organic compounds (SVOC) by Gas Chromatography/Mass Spectroscopy Method SW8270C.

Preservation and Holding Time. All samples were collected in the proper container and stored within 4-6 degrees Celsius. All samples were extracted and analyzed within the method prescribed holding time period.

Method Blanks. MBs were analyzed with each preparation batch of 20 or fewer samples. A total of two MBs are associated with the project samples. The MBs were free of any detectable SVOC analytes indicating that the analytical process did not introduce any target analytes.

Surrogates. Surrogates were added to each sample to measure sample specific matrix interferences and laboratory performance. For sample HAAF-ADA-201-14, one acid surrogate was recovered slightly below the lower acceptance limit. The acid analyte results in sample HAAF-ADA-201-14 were ***qualified as estimated*** due to a low surrogate recovery. All other surrogate recoveries were within acceptance criteria.

Internal Standards. Internal standards were added to each sample to ensure the stability of instrument sensitivity and response during each analysis. For sample HAAF-ADA-212-06, the area for one internal standard was slightly below the lower acceptance limit. The difference is was considered insignificant because all other QC parameters and all other internal standards were within acceptance criteria. No data were qualified due to the outlier.

Laboratory Control Spike Samples. Laboratory control spikes were analyzed with each analytical batch to provide information on the accuracy of the analytical method and on the laboratory performance. All spiked analytes were recovered within the acceptable recovery limits and the analytical precision data between spiked pairs were within the acceptance criterion.

Matrix Spike Samples. One sample was designated for MS/MSD analysis to determine precision and accuracy of the analytical method on various matrices and to demonstrate acceptable recovery by the laboratory at the time of sample analysis. All MS/MSD recoveries and RPD values were within acceptance criteria.

Field Duplicate Precision. Field duplicate samples were collected and analyzed as an indication of overall precision. One field duplicate sample was collected for the 23 samples. The field duplicate results confirmed the primary sample results. No target analytes were detected in both samples; therefore precision was not calculable.

Instrument Calibration. Instrument tune data were reviewed to ensure mass resolution, identification, and sensitivity throughout the analytical sequence. All tune data were within acceptance criteria. Initial calibration and continuing calibration data were reviewed to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. All calibration data were within acceptance criteria.

Overall Assessment and Completeness. All SVOC data met the requirements of the method and the project QAPP, and are considered usable for its intended purpose. The minor QC deficiencies noted above are typically observed in analytical data sets and do not impact the data usability. The acid analyte results in sample HAAF-ADA-201-14 were qualified as estimated due to a low surrogate recovery. There were no rejected data. Analytical and technical completeness goals of 90 percent were met.

3.3 Organochlorine Pesticides By Method SW8081

Nineteen (19) soil samples were collected for the determination of organochlorine pesticides by Gas Chromatography Method SW8081.

Preservation and Holding Time. All samples were collected in the proper container and stored within 4-6 degrees Celsius. All samples were extracted and analyzed within the method prescribed time period.

Method Blanks. MBs were analyzed with each preparation batch of 20 or fewer samples. A total of two MBs are associated with the project samples. The MBs were free of any detectable pesticides indicating that the analytical process did not introduce any target analytes.

Surrogates. Surrogates were added to each sample to measure sample specific matrix interferences and laboratory performance. For sample HAAF-ADA-212-06, one surrogate was recovered above the upper acceptance limit indicating a possible high bias. However, all samples results were non-detect; therefore, no data were qualified. All other surrogate recoveries were within acceptance criteria.

Internal Standards. Internal standards were added to each sample to ensure the stability of instrument sensitivity and response during each analysis. All internal standard data were within acceptance criteria.

Laboratory Control Spike Samples. Laboratory control spikes were analyzed with each analytical batch to provide information on the accuracy of the analytical method and on the laboratory performance. All spiked analytes were recovered within the acceptable recovery

limits and the analytical precision data between spiked pairs were within the acceptance criterion.

Matrix Spike Samples. One sample was designated for MS/MSD analysis to determine precision and accuracy of the analytical method on various matrices and to demonstrate acceptable recovery by the laboratory at the time of sample analysis. All MS/MSD recoveries and RPD values were within acceptance criteria.

Field Duplicate Precision. Field duplicate samples were collected and analyzed as an indication of overall precision. One field duplicate sample was collected for the 23 samples. The field duplicate results confirmed the primary sample results. No target analytes were detected above the reporting limits; therefore precision was not calculable.

Instrument Calibration. Initial calibration and continuing calibration data were reviewed to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. All calibration data were within acceptance criteria.

Overall Assessment and Completeness. All pesticide data met the requirements of the method and the project QAPP, and are considered usable for its intended purpose. The minor QC deficiencies noted above are typically observed in data sets and do not impact the data usability. There were no estimated or rejected data. Analytical and technical completeness goals of 90 percent were met.

3.4 Total Petroleum Hydrocarbons (TPH) Purgeable Gasoline Range Organics (GRO) By Method SW8015B

Twenty-three (23) soil samples were collected for the determination of TPH Purgeable GRO by Gas Chromatography Method SW8015B.

Preservation and Holding Time. All samples were collected using Encore Samplers®, shipped on ice, and analyzed within the method prescribed holding time of 14 days from date of collection.

Method Blanks. MBs were analyzed with each preparation batch of 20 or fewer samples. A total of two MBs are associated with the project samples. In both MBs, trace concentrations of

TPH Purgeable GRO were detected. The range of concentrations detected in the associated samples was within 10 times the blank concentration indicating a possible false positive value. All TPH Purgeable GRO results were ***qualified as estimated non-detects*** at an elevated reporting limit due to possible laboratory contamination.

Surrogates. A surrogate was added to each sample to measure sample specific matrix interferences and laboratory performance. All surrogate recoveries were within acceptance criteria.

Laboratory Control Spike Samples. Laboratory control spikes were analyzed with each analytical batch to provide information on the accuracy of the analytical method and on the laboratory performance. All spiked analytes were recovered within the acceptable recovery limits and the analytical precision data between spiked pairs were within the acceptance criterion.

Matrix Spike Samples. One sample was designated for MS/MSD analysis to determine precision and accuracy of the analytical method on various matrices and to demonstrate acceptable recovery by the laboratory at the time of sample analysis. All MS/MSD recoveries and RPD values were within acceptance criteria.

Field Duplicate Precision. Field duplicate samples were collected and analyzed as an indication of overall precision. One field duplicate sample was collected for the 23 samples. The field duplicate results confirmed the primary sample results. TPH Purgeable GRO were not detected above the reporting limits; therefore precision was not calculable.

Instrument Calibration. Initial calibration and continuing calibration data were reviewed to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. All calibration data were within acceptance criteria.

Overall Assessment and Completeness. Trace concentrations of TPH Purgeable GRO were detected in all method blanks indicating a possible laboratory contamination source. The range of concentrations detected in the associated samples was within 10 times the blank concentration. All TPH Purgeable GRO results were qualified as estimated non-detects at an elevated reporting

limit. The data is considered usable at elevated reporting limits. There were no rejected data. Analytical and technical completeness goals of 90 percent were met.

3.5 TPH Extractable Diesel Range Organics (DRO) By Method SW8015B

Twenty-three (23) soil samples were collected for the determination of TPH Extractable DRO by Gas Chromatography Method SW8015B.

Preservation and Holding Time. All samples were collected in the proper container and stored within 4-6 degrees Celsius. All samples were extracted and analyzed within the method prescribed time period.

Method Blanks. MBs were analyzed with each preparation batch of 20 or fewer samples. A total of two MBs are associated with the project samples. The MBs were free of any detectable TPH Extractable DRO indicating that the analytical process did not introduce any target analytes.

Surrogates. A surrogate was added to each sample to measure sample specific matrix interferences and laboratory performance. All other surrogate recoveries were within acceptance criteria.

Laboratory Control Spike Samples. Laboratory control spikes were analyzed with each analytical batch to provide information on the accuracy of the analytical method and on the laboratory performance. All spiked analytes were recovered within the acceptable recovery limits and the analytical precision data between spiked pairs were within the acceptance criterion.

Matrix Spike Samples. One sample was designated for MS/MSD analysis to determine precision and accuracy of the analytical method on various matrices and to demonstrate acceptable recovery by the laboratory at the time of sample analysis. The laboratory performed an additional MS/MSD spike. All MS/MSD recoveries and RPD values were within acceptance criteria.

Field Duplicate Precision. Field duplicate samples were collected and analyzed as an indication of overall precision. One field duplicate sample was collected for the 23 samples. The field

duplicate results confirmed the primary sample results. TPH Extractable DRO were not detected above the reporting limits; therefore precision was not calculable.

Instrument Calibration. Initial calibration and continuing calibration data were reviewed to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. All calibration data were within acceptance criteria.

Overall Assessment and Completeness. The TPH Extractable DRO data met the requirements of the method and the project QAPP, and are considered usable for its intended purpose. There were no estimated or rejected data. Analytical and technical completeness goals of 90 percent were met.

3.6 Gross Alpha and Beta By Method SW9310

Twenty-three (23) soil samples were collected for the determination of Gross Alpha and Beta by Gas Flow Proportional Counting Method SW9310.

Preservation and Holding Time. All samples were collected in the proper container and analyzed within the method prescribed holding time of 180 days from date of collection.

Method Blanks. MBs were analyzed with each sample batch. A total of two MBs are associated with the project samples. Gross Alpha and Beta were not detected above the uncertainty values indicating that the analytical process did not introduce any target analytes.

Laboratory Control Spike Samples. Laboratory control spikes were analyzed with each sample batch to provide information on the accuracy of the analytical method and on the laboratory performance. All spiked analytes were recovered within the acceptable recovery limits.

Matrix Spike Samples. One sample was designated for MS/MSD analysis to determine precision and accuracy of the analytical method and to demonstrate acceptable recovery by the laboratory at the time of sample analysis. The Gross Alpha MS/MSD recoveries (73 and 74 percent, respectively) were slightly below the acceptance criteria of 75-125 percent. For sample HAAF-ADA-209-14, the Gross Alpha result was ***qualified as estimated*** due to low MS/MSD recoveries. The Gross Beta MS/MSD recoveries and RPD were within acceptance criteria.

Laboratory Duplicate Precision. Duplicate sample analyses are performed to demonstrate acceptable method precision by the laboratory at the time of analysis. The Gross Alpha and Beta precision values met the 20 RPD limit.

Field Duplicate Precision. Field duplicate samples were collected and analyzed as an indication of overall precision. One field duplicate sample was collected for the 23 samples. Gross Alpha and Beta results were within the 50 RPD criteria, indicating acceptance overall precision.

Overall Assessment and Completeness. The Gross Alpha and Beta data met the requirements of the method and the project QAPP, and are considered usable for its intended purpose. The low Gross Alpha MS/MSD recovery is considered a minor QC deficiency and does not impact data usability. For sample HAAF-ADA-209-14, the Gross Alpha result was qualified as estimated. There were no rejected data. Analytical and technical completeness goals of 90 percent were met.

3.7 CAM 17 Metals (aka Title 22 Metals) By Methods SW6010B and SW7471A

Twenty-three (23) soil samples were collected for the determination of CAM 17 Metals by Inductively Coupled Plasma Spectroscopy (ICP) Method SW6010B and by Cold-Vapor Atomic Absorption Spectrometry Method SW7471A. Method SW6010B is for the determination of antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc. Method SW7471A is for the determination of mercury.

Preservation and Holding Time. All samples were collected in the proper containers and analyzed within the method prescribed holding time of 180 days for Method SW6010B and 28 days for Method SW7471A.

Interference Check Samples. Interference check samples (ICS) were analyzed at the beginning and end of each analytical sequence to verify the laboratory's interelement and background correction factors. The recoveries for all ICS AB analytes were within the 80-120 percent recovery limits as required by the method.

Method Blanks. MBs were analyzed with each preparation batch of 20 or fewer samples. A total of two MBs are associated with the project samples. A trace concentration of copper was detected in one MB. In the associated samples, copper was detected at concentrations greater than 50 times the blank concentration. The detected blank concentration is insignificant and therefore, no copper data were qualified due to blank contamination. No other metals were detected in the MBs.

Laboratory Control Spike Samples. Laboratory control spikes were analyzed with each analytical batch to provide information on the accuracy of the analytical method and on the laboratory performance. All spiked analytes were recovered within the acceptable recovery limits and the analytical precision data between spiked pairs were within the acceptance criterion.

Matrix Spike Samples. One sample was designated for MS/MSD analysis to determine precision and accuracy of the analytical method on various matrices and to demonstrate acceptable recovery by the laboratory at the time of sample analysis. The mercury MSD recovery was slightly below the acceptance criteria. For sample HAAF-ADA-210-14, the mercury result was ***qualified as estimated***. All other MS/MSD recoveries and RPD values were within acceptance criteria.

Post Digestion Spikes. Post-digestion spikes represent samples in which target analytes are added to the sample after completion of the digestion procedures and are typically analyzed when the MS/MSD criteria are not met. Since post-digestion spikes are not required for silver and mercury, no post-digestion spikes were necessary. As standard practice, the laboratory performed post-digestion spikes and provided the raw data. The data were reviewed and all recoveries were within acceptance criteria.

Laboratory Duplicate Precision. Duplicate sample analyses are performed to demonstrate acceptable method precision by the laboratory at the time of analysis. For all results detected above the reporting limit, the RPD was within acceptance criteria.

Field Duplicate Precision. Field duplicate samples were collected and analyzed as an indication of overall precision. One field duplicate sample was collected for the 23 samples and for all analytes detected above the reporting limit, the RPD was within acceptance criteria.

Serial Dilutions. The serial dilution of samples quantitated by ICP determines whether or not significant physical or chemical interferences exist due to sample matrix. Serial dilutions were performed on two samples and all calculable results were within acceptance criteria.

Instrument Calibration. Initial calibration and continuing calibration data were reviewed to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. All calibration data were within acceptance criteria.

Overall Assessment and Completeness. All metals data are considered usable for its intended purpose. The minor QC deficiencies noted above are typically observed in data sets and do not impact the data usability. There were no rejected data. Analytical and technical completeness goals of 90 percent were met.

4. Restrictions on Data Usability

The data addressed in this CDQAR are considered usable for its intended purpose. Several results were qualified as estimated due to minor QA/QC deficiencies that are typically observed in analytical data. All estimated data is considered useable for decision-making purposes for this project. There were no rejected data points and the analytical and technical completeness goals were met.

References

The following references were used in assessing the quality and usability of this data.

U.S. Army Corps of Engineers, November 2003. *Field Sampling Plan, Northwest Alleged Disposal Area, Hamilton Army Airfield, Final.*

U.S. Army Corps of Engineers, November 2003. *Quality Assurance Project Plan, Northwest Alleged Disposal Area, Northwest of Former Runway, Hamilton Army Airfield, Final.*

Applied P & Ch Laboratory. Sample Delivery Groups 03-6205 and 03-6230.

General Engineering Laboratories, LLC. Sample Delivery Group 104815.

Department of Defense Environmental Data Quality Workgroup, June 2002. *Quality Systems Manual for Environmental Laboratories, Final Version 2.*

U.S. Environmental Protection Agency, July 2002. *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review.*

U.S. Environmental Protection Agency, October 1999. *Contract Laboratory Program National Functional Guidelines for Organic Data Review.*

U.S. Environmental Protection Agency, December 1996. *Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846) Third Edition including updates.*

Appendix B

ANANALYTICAL DATA TABLES

Table B-1. Analytical Data Table for TPH

NW Alleged Disposal Area	Sample ID	HAAFADA 201				HAAFADA 202				HAAFADA 203				HAAFADA 204						HAAFADA 205				HAAFADA 206			
	Depth (ft)	6 ft bgs		14 ft bgs		2 ft bgs		14 ft bgs		0 ft bgs		6 ft bgs		6 ft bgs		14 ft bgs				6 ft bgs		14 ft bgs		1 ft bgs		Refusal	
Analyte Names																											
TPH-Gas and TPH-Diesel - EPA Test Method 8015B (All units are in mg/kg)																											
Gasoline		0.07	UJ	0.05	UJ	0.03	UJ	0.02	UJ	0.1	UJ	0.2	UJ	0.2	UJ	0.06	UJ			0.02	UJ	0.02	UJ	0.06	UJ		
Diesel Fuel		4	J	4	J	6	J	120	U	13	J	6	J	5	J	120	U			130	U	120	U	120	U		

NW Alleged Disposal Area	Sample ID	HAAFADA 207				HAAFADA 208				HAAFADA 209				HAAFADA 210						HAAFADA 211				HAAFADA 212			
	Depth (ft)	5 ft bgs		14 ft bgs		6 ft bgs		14 ft bgs		4 ft bgs		14 ft bgs		2 ft bgs		14 ft bgs		14 ft DUP		6 ft bgs		14 ft bgs		6 ft bgs		14 ft bgs	
Analyte Names																											
TPH-Gas and TPH-Diesel - EPA Test Method 8015B (All units are in mg/kg)																											
Gasoline		0.04	UJ	0.02	UJ	0.1	UJ	0.05	UJ	0.05	UJ	0.04	UJ	0.03	UJ	0.04	UJ	0.03	J	0.05	UJ	0.03	UJ	0.1	UJ	0.04	UJ
Diesel Fuel		4	J	120	U	7	J	2	J	3	J	2	J	9	J	130	U	3	J	4	J	110	U	5	J	120	U

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample (refer to CDQAR for details)..
UJ = The analyte was not detected above the reported quantitation limit. However, the reported quatitation limit is approximate and may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U = Not Detected.

Table B-2. Analytical Data Table for Gross Alpha & Beta Particles

NW Alleged Disposal Area	Sample ID	HAAFADA 201		HAAFADA 202		HAAFADA 203		HAAFADA 204			HAAFADA 205		HAAFADA 206	
	Depth (ft)	6 ft bgs	14 ft bgs	2 ft bgs	14 ft bgs	0 ft bgs	6 ft bgs	6 ft bgs	14 ft bgs		6ft bgs	14 ft bgs	1 ft bgs	Refusal
Analyte Names														
Gross Alpha / Beta Particles - EPA Test Method 900M (All units are in pCi/g)														
Gross Alpha		5.6	7.2	9.2	6.5	8.5	7.9	4.8	3.8 J		7.1	8.2	5.8	
Gross Beta		13	18	15	12	17	14	15	7.9 J		11	16	15	

NW Alleged Disposal Area	Sample ID	HAAFADA 207		HAAFADA 208		HAAFADA 209		HAAFADA 210			HAAFADA 211		HAAFADA 212	
	Depth (ft)	5 ft bgs	14 ft bgs	6 ft bgs	14 ft bgs	4 ft bgs	14 ft bgs	2 ft bgs	14 ft bgs	14 ft Dup	6 ft bgs	14 ft bgs	6 ft bgs	14 ft bgs
Analyte Names														
Gross Alpha / Beta Particles - EPA Test Method 900M (All units are in pCi/g)														
Gross Alpha		8.3	9.3	4.3	6.6	9.5	6.5	9.4	12	6.6	6.8	7.1	7.1	5.6
Gross Beta		16.4	25.6	11.4	10.2	15.3	11.1	14.7	13.8	14.2	10.7	10.7	13.3	9.6 J

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample (refer to CDQAR for details).
UJ = The analyte was not detected above the reported quantitation limit. However, the reported quatitation limit is approximate and may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U = Not Detected.

Table B-3. Analytical Data Table for VOCs.

NW Alleged Disposal Area	Sample ID	HAAFADA 201				HAAFADA 202				HAAFADA 203				HAAFADA 204					HAAFADA 205				HAAFADA 206		
	Depth (ft)	6 ft bgs		14 ft bgs		2 ft bgs		14 ft bgs		0 ft bgs		6 ft bgs		6 ft bgs		14 ft bgs			6 ft bgs		14 ft bgs		1 ft bgs		Refusal
Analyte Names																									
VOC's - EPA Test Method 8260B (All units are in ug/kg)																									
1,1,1-TRICHLOROETHANE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
1,1,2,2-TETRACHLOROETHANE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
1,1,2-TRICHLOROETHANE		33	U	29	U	16	U	10	U	16	U	23	U	21	U	9.2	U		16	U	13	U	10	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
1,1-DICHLOROETHANE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
1,1-DICHLOROETHENE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
1,2-DICHLOROBENZENE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
1,2-DICHLOROETHANE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
1,2-DICHLOROPROPANE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
1,3-DICHLOROBENZENE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
1,4-DICHLOROBENZENE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
2-BUTANONE (MEK)		13	J	290	U	160	U	100	U	160	U	15	J	16	J	92	U		160	U	130	U	100	U	
2-HEXANONE		33	U	29	U	16	U	10	U	16	U	23	U	21	U	9.2	U		16	U	13	U	10	U	
4-METHYL-2-PENTANONE (MIBK)		170	U	150	U	78	U	52	U	81	U	110	U	110	U	46	U		78	U	63	U	51	U	
ACETONE		72	J	44	J	78	U	11	J	81	U	87	UJ	86	UJ	8	UJ		78	U	14	J	11	UJ	
BENZENE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
BROMODICHLOROMETHANE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
BROMOFORM		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
BROMOMETHANE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
CARBON DISULFIDE		17	U	6	J	7.8	U	2	J	8.1	U	7	J	10	J	4.6	U		7.8	U	6.3	U	5.1	U	
CARBON TETRACHLORIDE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
CHLOROBENZENE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
CHLOROETHANE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
CHLOROFORM		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
CHLOROMETHANE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
CIS-1,2-DICHLOROETHENE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
CIS-1,3-DICHLOROPROPENE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
DIBROMOCHLOROMETHANE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
DICHLORODIFLUOROMETHANE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
ETHYLBENZENE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
METHYLENE CHLORIDE		9	UJ	9	UJ	5	UJ	3	UJ	5	UJ	7	UJ	6	UJ	3	UJ		5	UJ	4	UJ	3	UJ	
STYRENE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
TETRACHLOROETHENE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
TOLUENE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
TRANS-1,2-DICHLOROETHENE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
TRANS-1,3-DICHLOROPROPENE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
TRICHLOROETHENE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
TRICHLOROFLUOROMETHANE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
VINYL ACETATE		33	U	29	U	16	U	10	U	16	U	23	U	21	U	9.2	U		16	U	13	U	10	U	
VINYL CHLORIDE		17	U	15	U	7.8	U	5.2	U	8.1	U	11	U	11	U	4.6	U		7.8	U	6.3	U	5.1	U	
XYLENES (TOTAL)		50	U	44	U	23	U	16	U	24	U	34	U	32	U	14	U		23	U	19	U	15	U	

INTENTIONALLY LEFT BLANK

Direct Push Refusal @ 8 Feet - No Sample Collected

NW Alleged Disposal Area	Sample ID	HAAFADA 207				HAAFADA 208				HAAFADA 209				HAAFADA 210						HAAFADA 211				HAAFADA 212			
	Depth (ft)	5 ft bgs		14 ft bgs		6 ft bgs		14 ft bgs		4 ft bgs		14 ft bgs		2 ft bgs		14 ft bgs		14 ft Dup		6 ft bgs		14 ft bgs		6 ft bgs		14 ft bgs	
Analyte Names																											
VOC's - EPA Test Method 8260B (All units are in ug/kg)																											
1,1,1-TRICHLOROETHANE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
1,1,2,2-TETRACHLOROETHANE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
1,1,2-TRICHLOROETHANE		29	U	11	U	32	U	11	U	22	U	23	U	17	U	12	U	10	U	25	U	9.6	U	27	U	10	U
1,1,2-TRICHLOROTRIFLUOROETHANE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	21	U	13	U	4.8	U	13	U	5.0	U
1,1-DICHLOROETHANE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
1,1-DICHLOROETHENE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
1,2-DICHLOROBENZENE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
1,2-DICHLOROETHANE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
1,2-DICHLOROPROPANE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
1,3-DICHLOROBENZENE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
1,4-DICHLOROBENZENE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
2-BUTANONE (MEK)		290	U	110	U	320	U	110	U	220	U	230	U	170	U	120	U	210	U	250	U	96	U	270	U	100	U
2-HEXANONE		29	U	11	U	32	U	11	U	22	U	23	U	17	U	12	U	21	U	25	U	9.6	U	27	U	10	U
4-METHYL-2-PENTANONE (MIBK)		140	U	55	U	160	U	54	U	110	U	120	U	87	U	60	U	100	U	130	U	48	U	130	U	50	U
ACETONE		140	U	16	J	50	UJ	12	UJ	110	U	27	J	87	U	19	J	25	J	97	J	48	U	52	UJ	10	UJ
BENZENE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
BROMODICHLOROMETHANE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
BROMOFORM		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
BROMOMETHANE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
CARBON DISULFIDE		14	U	5.5	U	10	J	5.4	U	11	U	7	J	8.7	U	6.0	U	8	J	20		4.8	U	69		5.0	U
CARBON TETRACHLORIDE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
CHLOROBENZENE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
CHLOROETHANE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
CHLOROFORM		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	0.6	J
CHLOROMETHANE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
CIS-1,2-DICHLOROETHENE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
CIS-1,3-DICHLOROPROPENE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
DIBROMOCHLOROMETHANE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
DICHLORODIFLUOROMETHANE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
ETHYLBENZENE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
METHYLENE CHLORIDE		9	UJ	4	UJ	9	UJ	3	UJ	7	UJ	8	UJ	5	UJ	4	UJ	6	J	7	UJ	3	UJ	9	UJ	4	UJ
STYRENE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
TETRACHLOROETHENE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
TOLUENE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
TRANS-1,2-DICHLOROETHENE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
TRANS-1,3-DICHLOROPROPENE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
TRICHLOROETHENE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
TRICHLOROFLUOROMETHANE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
VINYL ACETATE		29	U	11	U	32	U	11	U	22	U	23	U	17	U	12	U	21	U	25	U	9.6	U	27	U	10	U
VINYL CHLORIDE		14	U	5.5	U	16	U	5.4	U	11	U	12	U	8.7	U	6.0	U	10	U	13	U	4.8	U	13	U	5.0	U
XYLENES (TOTAL)		43	U	16	U	48	U	16	U	33	U	35	U	26	U	18	U	31	U	38	U	14	U	40	U	15	U

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample (refer to CDQAR for details)..

UJ = The analyte was not detected above the reported quantitation limit. However, the reported quatitation limit is approximate and may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

U = Not Detected.

Table B-4. Analytical Data Table for SVOCs.

NW Alleged Disposal Area	Sample ID	HAAFADA 201		HAAFADA 202		HAAFADA 203		HAAFADA 204			HAAFADA 205		HAAFADA 206		
	Depth (ft)	6 ft bgs	14 ft bgs	2 ft bgs	14 ft bgs	0 ft bgs	6 ft bgs	6 ft bgs	14 ft bgs		6 ft bgs	14 ft bgs	1 ft bgs	Refusal	
Analyte Names															
SVOC's - EPA Test Method 8270C (All units are in ug/kg)															
1,2,4-TRICHLOROBENZENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
1,2-DICHLOROBENZENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
1,3-DICHLOROBENZENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
1,4-DICHLOROBENZENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
2,4,5-TRICHLOROPHENOL		660 U	600 UJ	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
2,4,6-TRICHLOROPHENOL		660 U	600 UJ	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
2,4-DICHLOROPHENOL		660 U	600 UJ	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
2,4-DIMETHYLPHENOL		660 U	600 UJ	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
2,4-DINITROPHENOL		3300 U	3000 UJ	2700 U	2000 U	2200 U	3200 U	3100 U	1900 U		2100 U	2000 U	1900 U		
2,4-DINITROTOLUENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
2,6-DICHLOROPHENOL		660 U	600 UJ	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
2,6-DINITROTOLUENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
2-CHLORONAPHTHALENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
2-CHLOROPHENOL		660 U	600 UJ	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
2-METHYL-4,6-DINITROPHENOL		3300 U	3000 UJ	2700 U	2000 U	2200 U	3200 U	3100 U	1900 U		2100 U	2000 U	1900 U		
2-METHYLNAPHTHALENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
2-METHYLPHENOL		660 U	600 UJ	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
2-NITROANILINE		6600 U	6000 U	5400 U	4000 U	4500 U	6300 U	6200 U	3900 U		4300 U	4100 U	3900 U		
2-NITROPHENOL		660 U	600 UJ	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
3,3'-DICHLOROBENZIDINE		260 U	240 U	210 U	160 U	89 U	130 U	120 U	78 U		170 U	160 U	77 U		
3-NITROANILINE		3300 U	3000 U	2700 U	2000 U	2200 U	3200 U	3100 U	1900 U		2100 U	2000 U	1900 U		
4-BROMOPHENYL-PHENYLETHER		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
4-CHLORO-3-METHYLPHENOL		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
4-CHLOROANILINE		200 U	180 U	160 U	120 U	150 U	210 U	210 U	130 U		130 U	130 U	130 U		
4-CHLOROPHENYL PHENYL ETHER		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
4-METHYLPHENOL		660 U	600 UJ	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
4-NITROANILINE		3300 U	3000 U	2700 U	2000 U	2200 U	3200 U	3100 U	1900 U		2100 U	2000 U	1900 U		
4-NITROPHENOL		3300 U	3000 UJ	2700 U	2000 U	2200 U	3200 U	3100 U	1900 U		2100 U	2000 U	1900 U		
ACENAPHTHENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
ACENAPHTHYLENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
ANTHRACENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
BENZO(A)ANTHRACENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
BENZO(A)PYRENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
BENZO(B)FLUORANTHENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
BENZO(G,H,I)PERYLENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
BENZO(K)FLUORANTHENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
BENZYL ALCOHOL		56 U	51 U	45 U	34 U	43 U	61 U	60 U	38 U		36 U	35 U	38 U		
BIS(2-CHLOROETHOXY)METHANE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
BIS(2-CHLOROETHYL)ETHER		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
BIS(2-CHLOROISOPROPYL)ETHER		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
BIS(2-ETHYLHEXYL)PHTHALATE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
BUTYLBENZYLPHTHALATE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
CHRYSENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
DIBENZ(A,H)ANTHRACENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
DIBENZOFURAN		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
DIETHYL PHTHALATE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
DIMETHYLPHTHALATE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
DI-N-BUTYL PHTHALATE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
DI-N-OCTYL PHTHALATE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
FLUORANTHENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
FLUORENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
HEXACHLOROBENZENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
HEXACHLOROBUTADIENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
HEXACHLOROCYCLOPENTADIENE		280 U	260 U	230 U	170 U	460 U	650 U	640 U	400 U		180 U	170 U	400 U		
HEXACHLOROETHANE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
INDENO(1,2,3-CD)PYRENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
ISOPHORONE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
NAPHTHALENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
NITROBENZENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
N-NITROSO-DI-N-PROPYLAMINE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
N-NITROSODIPHENYLAMINE		320 U	300 U	260 U	190 U	150 U	210 U	210 U	130 U		210 U	200 U	130 U		
PENTACHLOROPHENOL		3300 U	3000 UJ	2700 U	2000 U	2200 U	3200 U	3100 U	1900 U		2100 U	2000 U	1900 U		
PHENANTHRENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
PHENOL		660 U	600 UJ	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		
PYRENE		660 U	600 U	540 U	400 U	450 U	630 U	620 U	390 U		430 U	410 U	390 U		

Intentionally Left Blank

DirectPush Refusal @ 8 Feet - No Sample Collected

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample (refer to CDQAR for details)..

UJ = The analyte was not detected above the reported quantitation limit. However, the reported quatitation limit is approximate and may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

U = Not Detected.

Table B-4. Analytical Data Table for SVOCs (Continued).

NW Alleged Disposal Area	Sample ID	HAAFADA 207				HAAFADA 208				HAAFADA 209				HAAFADA 210						HAAFADA 211				HAAFADA 212			
	Depth (ft)	5 ft bgs		14 ft bgs		6 ft bgs		14 ft bgs		4 ft bgs		14 ft bgs		2 ft bgs		14 ft bgs		14 ft DUP		6 ft bgs		14 ft bgs		6 ft bgs		14 ft bgs	
Analyte Names																											
SVOC's - EPA Test Method 8270C (All units are in ug/kg)																											
1,2,4-TRICHLOROBENZENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
1,2-DICHLOROBENZENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
1,3-DICHLOROBENZENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
1,4-DICHLOROBENZENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
2,4,5-TRICHLOROPHENOL		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
2,4,6-TRICHLOROPHENOL		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
2,4-DICHLOROPHENOL		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
2,4-DIMETHYLPHENOL		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
2,4-DINITROPHENOL		3100	U	2000	U	3200	U	2000	U	2900	U	2800	U	2500	U	2100	U	3100	U	3000	U	1800	U	2900	U	1900	U
2,4-DINITROTOLUENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
2,6-DICHLOROPHENOL		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
2,6-DINITROTOLUENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
2-CHLORONAPHTHALENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
2-CHLOROPHENOL		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
2-METHYL-4,6-DINITROPHENOL		3100	U	2000	U	3200	U	2000	U	2900	U	2800	U	2500	U	2100	U	3100	U	3000	U	1800	U	2900	U	1900	U
2-METHYLNAPHTHALENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
2-METHYLPHENOL		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
2-NITROANILINE		6300	U	4000	U	6500	U	3900	U	5800	U	5700	U	4900	U	4200	U	6200	U	6000	U	3700	U	5700	U	3900	U
2-NITROPHENOL		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
3,3'-DICHLOROBENZIDINE		250	U	160	U	130	U	79	U	230	U	220	U	190	U	170	U	240	U	240	U	140	U	110	U	78	U
3-NITROANILINE		3100	U	2000	U	3200	U	2000	U	2900	U	2800	U	2500	U	2100	U	3100	U	3000	U	1800	U	2900	U	1900	U
4-BROMOPHENYL-PHENYLETHER		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
4-CHLORO-3-METHYLPHENOL		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
4-CHLOROANILINE		190	U	120	U	220	U	130	U	180	U	170	U	150	U	130	U	190	U	180	U	110	U	190	U	130	U
4-CHLOROPHENYL PHENYL ETHER		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
4-METHYLPHENOL		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
4-NITROANILINE		3100	U	2000	U	3200	U	2000	U	2900	U	2800	U	2500	U	2100	U	3100	U	3000	U	1800	U	2900	U	1900	U
4-NITROPHENOL		3100	U	2000	U	3200	U	2000	U	2900	U	2800	U	2500	U	2100	U	3100	U	3000	U	1800	U	2900	U	1900	U
ACENAPHTHENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
ACENAPHTHYLENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
ANTHRACENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
BENZO(A)ANTHRACENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
BENZO(A)PYRENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
BENZO(B)FLUORANTHENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
BENZO(G,H,I)PERYLENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
BENZO(K)FLUORANTHENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
BENZYL ALCOHOL		53	U	34	U	63	U	38	U	49	U	48	U	42	U	36	U	52	U	51	U	31	U	56	U	38	U
BIS(2-CHLOROETHOXY)METHANE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
BIS(2-CHLOROETHYL)ETHER		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
BIS(2-CHLOROISOPROPYL)ETHER		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
BIS(2-ETHYLHEXYL)PHTHALATE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	49	J	390	U
BUTYLBENZYLPHTHALATE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
CHRYSENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
DIBENZ(A,H)ANTHRACENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
DIBENZOFURAN		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
DIETHYL PHTHALATE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
DIMETHYLPHTHALATE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
DI-N-BUTYL PHTHALATE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
DI-N-OCTYL PHTHALATE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
FLUORANTHENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
FLUORENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
HEXACHLOROBENZENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
HEXACHLOROBUTADIENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
HEXACHLOROCYCLOPENTADIENE		270	U	170	U	670	U	410	U	250	U	240	U	210	U	180	U	260	U	250	U	160	U	590	U	400	U
HEXACHLOROETHANE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
INDENO(1,2,3-CD)PYRENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
ISOPHORONE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
NAPHTHALENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
NITROBENZENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
N-NITROSO-DI-N-PROPYLAMINE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
N-NITROSODIPHENYLAMINE		310	U	200	U	220	U	130	U	290	U	280	U	240	U	210	U	300	U	290	U	180	U	190	U	130	U
PENTACHLOROPHENOL		3100	U	2000	U	3200	U	2000	U	2900	U	2800	U	2500	U	2100	U	3100	U	3000	U	1800	U	2900	U	1900	U
PHENANTHRENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
PHENOL		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U
PYRENE		630	U	400	U	650	U	390	U	580	U	570	U	490	U	420	U	620	U	600	U	370	U	570	U	390	U

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample (refer to CDQAR for details)..

UJ = The analyte was not detected above the reported quantitation limit. However, the reported quatitation limit is approximate and may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

U = Not Detected.

Table B-5. Analytical Data Table for Pesticides.

NW Alleged Disposal Area	Sample ID	HAAFADA 201				HAAFADA 202				HAAFADA 203				HAAFADA 204					HAAFADA 205				HAAFADA 206			
	Depth (ft)	6 ft bgs		14 ft bgs		2 ft bgs		14 ft bgs		0 ft bgs		6 ft bgs		6 ft bgs		14 ft bgs			6 ft bgs		14 ft bgs		1 ft bgs		Refusal	
Analyte Names																										
Pesticides - EPA Test Method 8081A (All units are in ug/kg)																										
4,4'-DDD		10	J	60		Sample Not Analyzed for Pesticide	6	U		Sample Not Analyzed for Pesticide	9.6	U		9.3	U	5.9	U	Intentionally Left Blank	0.5	J	6.2	U	Sample Not Analyzed for Pesticide		Refusual @ Eight Feet - No Sample Collected	
4,4'-DDE		2	J	8	J		6	U			9.6	U		9.3	U	5.9	U		0.3	J	6.2	U				
4,4'-DDT		45		**339**			6	U			9.6	U		9.3	U	5.9	U		0.9	J	6.2	U				
ALDRIN		10	U	9.1	U		6	U			9.6	U		9.3	U	5.9	U		6.5	U	6.2	U				
ALPHA-BHC		10	U	9.1	U		6	U			9.6	U		9.3	U	5.9	U		6.5	U	6.2	U				
ALPHA-CHLORDANE		10	U	9.1	U		6	U			9.6	U		9.3	U	5.9	U		6.5	U	6.2	U				
BETA-BHC		10	U	9.1	U		6	U			9.6	U		9.3	U	5.9	U		6.5	U	6.2	U				
DELTA-BHC		10	U	9.1	U		6	U			9.6	U		9.3	U	5.9	U		6.5	U	6.2	U				
DIELDRIN		10	U	9.1	U		6	U			9.6	U		9.3	U	5.9	U		6.5	U	6.2	U				
ENDOSULFAN I		10	U	9.1	U		6	U			9.6	U		9.3	U	5.9	U		6.5	U	6.2	U				
ENDOSULFAN II		10	U	9.1	U		6	U			9.6	U		9.3	U	5.9	U		6.5	U	6.2	U				
ENDOSULFAN SULFATE		10	U	9.1	U		6	U			9.6	U		9.3	U	5.9	U		6.5	U	6.2	U				
ENDRIN		10	U	9.1	U		6	U			9.6	U		9.3	U	5.9	U		6.5	U	6.2	U				
ENDRIN ALDEHYDE		10	U	9.1	U		6	U			9.6	U		9.3	U	5.9	U		6.5	U	6.2	U				
GAMMA-BHC		10	U	9.1	U		6	U			9.6	U		9.3	U	5.9	U		6.5	U	6.2	U				
GAMMA-CHLORDANE		10	U	9.1	U		6	U			9.6	U		9.3	U	5.9	U		6.5	U	6.2	U				
HEPTACHLOR		10	U	9.1	U		6	U			9.6	U		9.3	U	5.9	U		6.5	U	6.2	U				
HEPTACHLOR EPOXIDE		10	U	9.1	U		6	U			9.6	U		9.3	U	5.9	U		6.5	U	6.2	U				
METHOXYCHLOR		34	U	31	U		20	U			33	U		32	U	20	U		22	U	21	U				
TOXAPHENE		200	U	180	U		120	U			190	U		190	U	120	U		130	U	120	U				

NW Alleged Disposal Area	Sample ID	HAAFADA 207				HAAFADA 208				HAAFADA 209				HAAFADA 210					HAAFADA 211				HAAFADA 212			
	Depth (ft)	5 ft bgs		14 ft bgs		6 ft bgs		14 ft bgs		4 ft bgs		14 ft bgs		2 ft bgs		14 ft bgs		14 ft DUP	6 ft bgs		14 ft bgs		6 ft bgs		14 ft bgs	
Analyte Names																										
Pesticides - EPA Test Method 8081A (All units are in ug/kg)																										
4,4'-DDD		9.5	U	6.1	U	9.8	U	5.9	U	8.8	U	0.6	J	Sample Not Analyzed for Pesticide	6.4	U	9.4	U	9.1	U	5.6	U	8.7	U	5.9	U
4,4'-DDE		9.5	U	6.1	U	9.8	U	5.9	U	8.8	U	0.4	J		6.4	U	9.4	U	9.1	U	5.6	U	8.7	U	5.9	U
4,4'-DDT		9.5	U	6.1	U	9.8	U	5.9	U	8.8	U	0.2	J		6.4	U	9.4	U	9.1	U	5.6	U	8.7	U	5.9	U
ALDRIN		9.5	U	6.1	U	9.8	U	5.9	U	8.8	U	8.6	U		6.4	U	9.4	U	9.1	U	5.6	U	8.7	U	5.9	U
ALPHA-BHC		9.5	U	6.1	U	9.8	U	5.9	U	8.8	U	8.6	U		6.4	U	9.4	U	9.1	U	5.6	U	8.7	U	5.9	U
ALPHA-CHLORDANE		9.5	U	6.1	U	9.8	U	5.9	U	8.8	U	8.6	U		6.4	U	9.4	U	9.1	U	5.6	U	8.7	U	5.9	U
BETA-BHC		9.5	U	6.1	U	9.8	U	5.9	U	8.8	U	8.6	U		6.4	U	9.4	U	9.1	U	5.6	U	8.7	U	5.9	U
DELTA-BHC		9.5	U	6.1	U	9.8	U	5.9	U	8.8	U	8.6	U		6.4	U	9.4	U	9.1	U	5.6	U	8.7	U	5.9	U
DIELDRIN		9.5	U	6.1	U	9.8	U	5.9	U	8.8	U	8.6	U		6.4	U	9.4	U	9.1	U	5.6	U	8.7	U	5.9	U
ENDOSULFAN I		9.5	U	6.1	U	9.8	U	5.9	U	8.8	U	8.6	U		6.4	U	9.4	U	9.1	U	5.6	U	8.7	U	5.9	U
ENDOSULFAN II		9.5	U	6.1	U	9.8	U	5.9	U	8.8	U	8.6	U		6.4	U	9.4	U	9.1	U	5.6	U	8.7	U	5.9	U
ENDOSULFAN SULFATE		9.5	U	6.1	U	9.8	U	5.9	U	8.8	U	8.6	U		6.4	U	9.4	U	9.1	U	5.6	U	8.7	U	5.9	U
ENDRIN		9.5	U	6.1	U	9.8	U	5.9	U	8.8	U	8.6	U		6.4	U	9.4	U	9.1	U	5.6	U	8.7	U	5.9	U
ENDRIN ALDEHYDE		9.5	U	6.1	U	9.8	U	5.9	U	8.8	U	8.6	U		6.4	U	9.4	U	9.1	U	5.6	U	8.7	U	5.9	U
GAMMA-BHC		9.5	U	6.1	U	9.8	U	5.9	U	8.8	U	8.6	U		6.4	U	9.4	U	9.1	U	5.6	U	8.7	U	5.9	U
GAMMA-CHLORDANE		9.5	U	6.1	U	9.8	U	5.9	U	8.8	U	8.6	U		6.4	U	9.4	U	9.1	U	5.6	U	8.7	U	5.9	U
HEPTACHLOR		9.5	U	6.1	U	9.8	U	5.9	U	8.8	U	8.6	U		6.4	U	9.4	U	9.1	U	5.6	U	8.7	U	5.9	U
HEPTACHLOR EPOXIDE		9.5	U	6.1	U	9.8	U	5.9	U	8.8	U	8.6	U		6.4	U	9.4	U	9.1	U	5.6	U	8.7	U	5.9	U
METHOXYCHLOR		32	U	21	U	33	U	20	U	30	U	29	U		22	U	32	U	31	U	19	U	30	U	20	U
TOXAPHENE		190	U	120	U	200	U	120	U	180	U	170	U		130	U	190	U	180	U	110	U	170	U	120	U

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample (refer to CDQAR for details)..
UJ = The analyte was not detected above the reported quantitation limit. However, the reported quatitation limit is approximate and may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U = Not Detected.

Table B-6. Analytical Data Table for Metals.

NW Alleged Disposal Area	Sample ID	HAAFADA 201				HAAFADA 202				HAAFADA 203				HAAFADA 204					HAAFADA 205				HAAFADA 206				
	Depth (ft)	6 ft bgs		14 ft bgs		2 ft bgs		14 ft bgs		0 ft bgs		6 ft bgs		6 ft bgs		14 ft bgs			6 ft bgs		14 ft bgs		1 ft bgs		Refusal		
Analyte Names																											
Metals - EPA Test Method 6010B and 7471A (All units are in mg/kg)																											
Antimony (Sb)		6	U	5.5	U	4.9	U	3.6	U	4.1	U	5.7	U	5.6	U	3.5	U	Intentially left blank	3.9	U	3.7	U	3.5	U	Refusal @ Eight Feet - No Sample Collected		Intentially left blank
Arsenic (As)		9.8	J	5.9	J	12.1		1	J	5.7	J	8.8	J	9	J	0.95	J		3.3	J	2.8	J	3.7	J			
Barium (Ba)		43.6	J	43.3	J	60.7	J	108	J	207		49.5	J	43.7	J	66.4	J		22.1	J	62.1	J	147				
Beryllium (Be)		1	U	0.1	J	0.2	J	0.19	J	0.47	J	0.96	U	0.93	U	0.17	J		0.65	U	0.48	J	0.27	J			
Cadmium (Cd)		0.25	J	0.12	J	0.03	J	0.6	U	0.68	U	0.96	U	0.93	U	0.25	J		0.06	J	0.62	U	0.59	U			
Chromium (Cr)		91		76.9		104		18.1		43.7		94.3		97.6		6.9	J		23		19.8		9.6	J			
Cobalt (Co)		19.4	J	17.2	J	12.8	J	5.6	J	9.6	J	17.6	J	18.3	J	9.6	J		3.3	J	8.6	J	4.2	J			
Copper (Cu)		38		37.1		36.6		4.8	J	20.3		35.4		38.4		4.2	J		9.6	J	9.9	J	3.9	J			
Lead (Pb)		9.7	J	10.8	J	11	J	9.7	J	18.2	J	9.5	J	9.2	J	6	J		6.3	J	7.6	J	8.3	J			
Mercury (Hg)		0.13	J	0.11	J	0.08	J	0.06	J	0.19		0.09	J	0.09	J	0.34			0.04	J	0.1	J	0.68				
Molybdenum (Mo)		4	U	3.7	U	3.8		2.4	U	1.1	J	3.8	U	3.7	U	2.4	U		2.5	J	2.5	U	2.3	U			
Nickel (Ni)		90.3		80.1		69.2		10.3	J	44.2		90.6		95.4		4.1	J		12.2	J	16.1		8.6	J			
Selenium (Se)		2.3		0.77	J	2.7		0.98		0.68	U	0.96	U	0.93	U	0.59	U		0.49	J	0.59	J	0.59	U			
Silver (Ag)		1	U	0.91	U	0.81	U	0.6	U	0.68	U	0.96	U	0.93	U	0.3	J		0.65	U	0.62	U	0.59	U			
Thallium (Tl)		20	U	18	U	16	U	12	U	14	U	19	U	19	U	12	U		13	U	12	U	12	U			
Vanadium (V)		74.9		65.7		90.5		27.2		46.1		74.4		75.3		12.2			28.9		37		26.8				
Zinc (Zn)		88.4		80.7		93.4		14.5		57.7		91.1		95.5		12.2			21.4		19.7		22.6				

NW Alleged Disposal Area	Sample ID	HAAFADA 207				HAAFADA 208				HAAFADA 209				HAAFADA 210						HAAFADA 211				HAAFADA 212					
	Depth (ft)	5 ft bgs		14 ft bgs		6 ft bgs		14 ft bgs		4 ft bgs		14 ft bgs		2 ft bgs		14 ft bgs		14 ft DUP		6 ft bgs		14 ft bgs		6 ft bgs		14 ft bgs		14 ft Dup	
Analyte Names																													
Metals - EPA Test Method 6010B and 7471A (All units are in mg/kg)																													
Antimony (Sb)		5.7	U	3.6	U	5.9	U	3.6	U	5.3	U	5.2	U	4.5	U	3.9	U	3.9	U	5.4	U	3.3	U	5.2	U	0.52	J		
Arsenic (As)		13.6		8.3		10.5		1.9	J	7.7	J	4.2	J	6.1	J	1.9	J	6.4	U	4.5	J	2.7	J	9.5		3.3	J		
Barium (Ba)		128	J	63.4	J	47.3	J	135		46.8	J	41.6	J	83	J	23.9	J	130	U	43.6	J	83.7	J	45.4	J	28.3	J	43.5	J
Beryllium (Be)		1.9		0.37	J	0.98	U	0.2	J	0.88	U	0.86	U	0.35	J	0.64	U	0.64	U	0.91	U	0.92		0.87	U	0.75		0.94	U
Cadmium (Cd)		0.95	U	0.61	U	0.98	U	0.59	U	0.88	U	0.06	J	0.74	U	0.64	U	0.64	U	0.91	U	0.56	U	0.87	U	0.59	U	0.11	J
Chromium (Cr)		61.6		35.4		93.4		14.3		95.3		81.1		110		27.3		27.9		89		9.1	J	78.6		18		82.9	
Cobalt (Co)		12.7	J	7.9	J	18.1	J	2.9	J	10.5	J	17	J	17.6		4.5	J	4.5	J	12.3	J	5.9	J	15.5	J	6.9	J	18.1	J
Copper (Cu)		48.4		20.2		37.8		10.1	J	31.4		31.7		33.1		9.3	J	9.3	J	27.5		4.8	J	31.4		4.2	J	33.7	
Lead (Pb)		20.4	J	16.2	J	9.9	J	4.7	J	6.9	J	8.1	J	8.7	J	6.4	J	5.6	J	4.8	J	10	J	7.9	J	15.3	J	9.2	J
Mercury (Hg)		0.36		0.09	J	0.1	J	0.1	J	0.1	J	0.08	J	0.22		0.41		0.41		0.1	J	0.64		0.08	J	0.17		0.1	J
Molybdenum (Mo)		1.7	J	2.4	U	3.9	U	2.4	U	3.5	U	3.4	U	3	U	2.6	U	2.6	U	3.6	U	2.2	U	3.5	U	2.4	U	3.7	U
Nickel (Ni)		105		37.4		89.9		11.4	J	54.1		77.2		84.2		19		19.1		64.6		12.2		77.5		14.9		81.7	
Selenium (Se)		0.95	U	2		1.8		0.59	U	0.72	J	0.86	U	0.95		1.1		1.1		0.58	J	0.84		0.87	U	0.5	J	2.7	
Silver (Ag)		0.95	U	0.61	U	0.98	U	0.59	U	0.88	U	0.86	U	0.74	U	0.64	U	0.64	U	0.91	U	0.56	U	0.21	J	0.59	U	0.94	U
Thallium (Tl)		19	U	12	U	20	U	12	U	18	U	17	U	15	U	13	U	13	U	18	U	11	U	17	U	12	U	19	U
Vanadium (V)		55.8		48		74		17.1		74.3		67.8		78.4		39.5		40.1		69.8		30.6		62.3		30.4		69.8	
Zinc (Zn)		79.1		40.6		89.8		13.4		70.6		75.4		111		16.5		16.4		76		25		76.8		21.6		80	

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample (refer to CDQAR for details)..

UJ = The analyte was not detected above the reported quantitation limit. However, the reported quatitation limit is approximate and may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

U = Not Detected.

Appendix C

DIRECT PUSH SOIL LOGS

DRILLING LOG

DIVISION: USACE SPK SACRAMENTO

INSTALLATION: HAMILTON AAF (HAAF)

SHEET 1 OF 2 SHEETS

1. PROJECT: Northwest Alleged Disposal Area
2. LOCATION (Coordinates or Station): N 4,213,553.3 E 541,826.3
3. DRILLING AGENCY: VIRONEX
4. HOLE NO. *(As shown on drawing title and file number)*: HAAF-ADA-201
5. NAME OF DRILLER: Brian McColgan
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED --- DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 16.0
10. SIZE AND TYPE OF BIT: 3.74 in
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*: MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Direct Push
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 0; UNDISTURBED 2
14. TOTAL NUMBER CORE BOXES: 0
15. ELEVATION GROUND WATER: 2.8
16. DATE HOLE: STARTED 11/19/2003; COMPLETED 11/19/2003
17. ELEVATION TOP OF HOLE: +3.0
18. TOTAL CORE RECOVERY FOR BORING: 80 %
19. GEOLOGIST: Tim Crummett

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
+3.0	0.0		Moist, Soft Lean Clay: 85% Organic Fine Clay, 15% Fine-grained Sand, Dark.			
+2.0	1.0		Moist, Soft Lean Clay: 70% Plastic Fine Clay, 25% Fine-grained sand, 5% Organic Clay. Note: Sulfur Odor from soil. .			
-2.5	5.5		Moist, Soft Lean Clay: 60% Plastic Fine Clay, 35% Fine Sand, 5% Organic Clay. Dark yellow-brown (4/4).	100	201-6 6.0 7.0	

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE: 3.0

Hole No. HAAF-ADA-201

PROJECT: Northwest Alleged Disposal Area

INSTALLATION: HAMILTON AAF (HAAF)

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Moist, Soft Lean Clay: 60% Plastic Fine Clay, 35% Fine Sand, 5% Organic Clay. Dark yellow-brown (4/4). *(continued)*			
				100	201-14 14.0 15.0	
-12.5	15.5					
-13.0	16.0		Moist, Soft 100% Non-Plastic Organic Silt. Dark Brown (2/2). Note: Sulphur odor from soil.			

DRILLING LOG

DIVISION: USACE SPK SACRAMENTO

INSTALLATION: HAMILTON AAF (HAAF)

SHEET 1 OF 2 SHEETS

1. PROJECT: Northwest Alleged Disposal Area
2. LOCATION (Coordinates or Station): N 4,213,528.5 E 541,827.4
3. DRILLING AGENCY: VIRONEX
4. HOLE NO. *(As shown on drawing title and file number)*: HAAF-ADA-202
5. NAME OF DRILLER: Brian McColgan
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED --- DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN
8. DEPTH DRILLED INTO ROCK
9. TOTAL DEPTH OF HOLE: 16.0
10. SIZE AND TYPE OF BIT: 3.74 in
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*: MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Direct Push
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 0; UNDISTURBED 2
14. TOTAL NUMBER CORE BOXES: 0
15. ELEVATION GROUND WATER: 2.8
16. DATE HOLE: STARTED 11/19/2003; COMPLETED 11/19/2003
17. ELEVATION TOP OF HOLE: +3.0
18. TOTAL CORE RECOVERY FOR BORING: 80 %
19. GEOLOGIST: Tim Crummett

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
+3.0	0.0		Soft Organic Clay.			
+2.0	1.0		Moist, Loose Silty Sand; 60% Fine Sand, 40% Non-plastic Fines, Yellow-Brown (5/6).			
				100	202-2 2.0 3.0	
-1.0	4.0		Moist Soft, Lean Clay; 90% Plastic Fines, 10% Sand, Trace of Organic Matter, Brown (4/3).			

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE: 3.0

Hole No. HAAF-ADA-202

PROJECT: Northwest Alleged Disposal Area

INSTALLATION: HAMILTON AAF (HAAF)

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Moist Soft, Lean Clay; 90% Plastic Fines, 10% Sand, Trace of Organic Matter, Brown (4/3). *(continued)*			
-11.0	14.0					
			Dry, Loose Silty Sand; 70% Fine Sand, 30% Non-plastic Fines, Brown-Yellow (6/8) (Possibly Decomposed Bedrock).	100	202-14 14.0 15.0	
-13.0	16.0					

Hole No. HAAF-ADA-203

DRILLING LOG	DIVISION	INSTALLATION	SHEET / OF
	USACE SPK SACRAMENTO	HAMILTON AAF (HAAF)	1 OF 2 SHEETS

1. PROJECT	Northwest Alleged Disposal Area
2. LOCATION (Coordinates or Station)	N 4,213,462.3 E 541,852.9
3. DRILLING AGENCY	VIRONEX
4. HOLE NO. *(As shown on drawing title and file number)*	HAAF-ADA-203
5. NAME OF DRILLER	Brian McColgan
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED --- DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	10.0
10. SIZE AND TYPE OF BIT	3.74 in
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*	MSL
12. MANUFACTURER'S DESIGNATION OF DRILL	Direct Push
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED 0 / UNDISTURBED 2
14. TOTAL NUMBER CORE BOXES	0
15. ELEVATION GROUND WATER	2.8
16. DATE HOLE	STARTED 11/18/2003 / COMPLETED 11/18/2003
17. ELEVATION TOP OF HOLE	+3.0
18. TOTAL CORE RECOVERY FOR BORING	80 %
19. GEOLOGIST	Tim Crummett

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
+3.0	0.0		Moist Organic Clay.	100	203-0 0.0 1.0	
+2.5	0.5					
			Moist, Loose Lean Clay, 80% Plastic Fines, 20% Organics, Dark Brown (3/3).			
0.0	3.0					
			Moist, Loose Lean Clay, 95% Plastic Fines, 5% Organics, with Fine-grained Sand, Dark Brown (3/3).			
				100	203-6 6.0 7.0	
-4.0	7.0					
			Wet, Soft, Silt; Dark Grey (4/1).			

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE: 3.0

Hole No. HAAF-ADA-203

PROJECT: Northwest Alleged Disposal Area

INSTALLATION: HAMILTON AAF (HAAF)

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Wet, Soft, Silt; Dark Grey (4/1). *(continued)*			
-7.0	10.0					
			Gravelly Greenstone (serpentine?). Note: Drilling refused at approximately 10 Feet.			
-7.5	10.5					

Hole No. HAAF-ADA-204

DRILLING LOG	DIVISION	INSTALLATION	SHEET / OF
	USACE SPK SACRAMENTO	HAMILTON AAF (HAAF)	1 OF 2 SHEETS

1. PROJECT	Northwest Alleged Disposal Area
2. LOCATION (Coordinates or Station)	N 4,213,437.6 E 541,853.0
3. DRILLING AGENCY	VIRONEX
4. HOLE NO. *(As shown on drawing title and file number)*	HAAF-ADA-204
5. NAME OF DRILLER	Brian McColgan
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED --- DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	16.0
10. SIZE AND TYPE OF BIT	3.74 in
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*	MSL
12. MANUFACTURER'S DESIGNATION OF DRILL	Direct Push
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED 0 / UNDISTURBED 2
14. TOTAL NUMBER CORE BOXES	0
15. ELEVATION GROUND WATER	2.8
16. DATE HOLE	STARTED 11/18/2003 / COMPLETED 11/18/2003
17. ELEVATION TOP OF HOLE	+3.0
18. TOTAL CORE RECOVERY FOR BORING	80 %
19. GEOLOGIST	Tim Crummett

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
+3.0	0.0		Moist Organic Clay with Roots.			
+1.5	1.5		Moist, Soft Lean Clay: 85% Plastic Fine Clay, 10% Fine sand, 5% Organic Clay. Dark Grey-Brown (4/2).			
-1.0	4.0		Wet, Soft, Silt; 90% Fine Sand, 10% Fine-grained Sand, Trace of Organic Clay. Dark Grey (4/1).			
				100	204-6 5.0 6.0	

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE: 3.0

Hole No. HAAF-ADA-204

PROJECT: Northwest Alleged Disposal Area

INSTALLATION: HAMILTON AAF (HAAF)

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Wet, Soft, Silt; 90% Fine Sand, 10% Fine-grained Sand, Trace of Organic Clay. Dark Grey (4/1). *(continued)*			
-7.5	10.5					
			Wet, Soft, Silty Sand; 60% Fine-grained Sand, 40% Non Plastic Fines, Grey-Brown (5/2). Note: Broken Carbonate Shells present at 11.0 feet.			
-11.0	14.0					
			Moist, Soft, Sandy Silt; 60% Silt, 40% Fine-grained Sand. Light Brown Grey (6/2).	100	204-14 14.0 15.0	
-13.0	16.0					

Hole No. HAAF-ADA-205

DRILLING LOG	DIVISION	INSTALLATION	SHEET / OF
	USACE SPK SACRAMENTO	HAMILTON AAF (HAAF)	1 OF 2 SHEETS

1. PROJECT	Northwest Alleged Disposal Area
2. LOCATION (Coordinates or Station)	N 4,213,458.6 E 541,878.1
3. DRILLING AGENCY	VIRONEX
4. HOLE NO. *(As shown on drawing title and file number)*	HAAF-ADA-205
5. NAME OF DRILLER	Brian McColgan
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED --- DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	14.0
10. SIZE AND TYPE OF BIT	3.74 in
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*	MSL
12. MANUFACTURER'S DESIGNATION OF DRILL	Direct Push
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED 0 / UNDISTURBED 2
14. TOTAL NUMBER CORE BOXES	0
15. ELEVATION GROUND WATER	2.8
16. DATE HOLE	STARTED 11/19/2003 / COMPLETED 11/19/2003
17. ELEVATION TOP OF HOLE	+3.0
18. TOTAL CORE RECOVERY FOR BORING	80 %
19. GEOLOGIST	Tim Crummett

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
+3.0	0.0		Organic Top Soil with Root matter.			
+2.0	1.0		Moist, Soft Lean Clay: 70% Plastic Fine Clay, 30% Organic Clay. Dark Grey-Brown (4/2).			
+0.5	2.5		Moist Clayey Sand; 70% Medium to Fine-grained Sand, 30% plastic clay, Tace of Organic, Dark Yellow-Brown (4/4).			
-3.3	6.3		Wet, Soft, Silt; 90% Fine Sand, 10% Fine-grained Sand, Trace of Organic Clay. Dark Grey (4/1).	100	205-6 6.0 7.0	

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE: 3.0

Hole No. HAAF-ADA-205

PROJECT: Northwest Alleged Disposal Area

INSTALLATION: HAMILTON AAF (HAAF)

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
-5.5	8.5		Wet, Soft, Silt; 90% Fine Sand, 10% Fine-grained Sand, Trace of Organic Clay. Dark Grey (4/1). *(continued)*			
-11.0	14.0		Wet to Moist, Soft Sandy Lean Clay; 60% Fine Sand, 40% Plastic Fine Clay. Gray (6/1).			
-13.0	16.0		Moist Clayey Sand; 60% Fine-grained Sand, 40% Plastic Fines, Brown (4/3). Note: Driller hit Bedrock at 16 feet.	100	205-14 14.0 15.0	

Hole No. HAAF-ADA-206

DRILLING LOG	DIVISION	INSTALLATION	SHEET / OF
	USACE SPK SACRAMENTO	HAMILTON AAF (HAAF)	1 OF 2 SHEETS

1. PROJECT	Northwest Alleged Disposal Area
2. LOCATION (Coordinates or Station)	N 4,213,447.2 E 541,818.0
3. DRILLING AGENCY	VIRONEX
4. HOLE NO. *(As shown on drawing title and file number)*	HAAF-ADA-206
5. NAME OF DRILLER	Brian McColgan
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED --- DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	8.0
10. SIZE AND TYPE OF BIT	3.74 in
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*	MSL
12. MANUFACTURER'S DESIGNATION OF DRILL	Direct Push
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED 0 / UNDISTURBED 2
14. TOTAL NUMBER CORE BOXES	0
15. ELEVATION GROUND WATER	2.8
16. DATE HOLE	STARTED 11/18/2003 / COMPLETED 11/18/2003
17. ELEVATION TOP OF HOLE	+3.0
18. TOTAL CORE RECOVERY FOR BORING	80 %
19. GEOLOGIST	Tim Crummett

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
+3.0	0.0		Moist Organic Top Soil with roots.			
+2.7	0.3		Dry, Hard, Silty Sand; 70% Fine-grained Sand, 30% Non Plastic Fines, Brown-Yellow (6/8). Note: Very Tough Drilling.			
				100	206-01 1.0 2.0	Possibly sandstone and not soil.
-5.0	8.0					

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE: 3.0

Hole No. HAAF-ADA-206

PROJECT: Northwest Alleged Disposal Area

INSTALLATION: HAMILTON AAF (HAAF)

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
-5.2	8.2		Drilling Refused at approximately 8 feet. Bedrock material.			

Hole No. HAAF-ADA-207

DRILLING LOG	DIVISION	INSTALLATION	SHEET / OF
	USACE SPK SACRAMENTO	HAMILTON AAF (HAAF)	1 OF 2 SHEETS

1. PROJECT	Northwest Alleged Disposal Area
2. LOCATION (Coordinates or Station)	N 4,213,499.2 E 541,878.9
3. DRILLING AGENCY	VIRONEX
4. HOLE NO. *(As shown on drawing title and file number)*	HAAF-ADA-207
5. NAME OF DRILLER	Brian McColgan
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED --- DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	16.0
10. SIZE AND TYPE OF BIT	3.74 in
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*	MSL
12. MANUFACTURER'S DESIGNATION OF DRILL	Direct Push
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED 0 / UNDISTURBED 2
14. TOTAL NUMBER CORE BOXES	0
15. ELEVATION GROUND WATER	2.8
16. DATE HOLE	STARTED 11/19/2003 / COMPLETED 11/19/2003
17. ELEVATION TOP OF HOLE	+3.0
18. TOTAL CORE RECOVERY FOR BORING	80 %
19. GEOLOGIST	Tim Crummett

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
+3.0	0.0		Organic Clay with Root Particles.			
+2.0	1.0		Moist, Soft Lean Clay: 85% Plastic Fine Clay, 10% Fine sand, 5% Organic Clay. Dark Yellow-Brown (4/4).			
				100	207-4 4.0 5.0	
-3.0	6.0		Wet, Soft Plastic Clay; 90% Plastic Fine Clay, 5% Fine Sand, 5% Organic Clay. Dark Brown.			

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE: 3.0

Hole No. HAAF-ADA-207

PROJECT: Northwest Alleged Disposal Area

INSTALLATION: HAMILTON AAF (HAAF)

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Wet, Soft Plastic Clay; 90% Plastic Fine Clay, 5% Fine Sand, 5% Organic Clay. Dark Brown. *(continued)*			
-11.0	14.0					
			Moist, Stiff Sandy Clay; 60% Fine Sand, 40% Plastic Fine Clay. Gray (6/1).	100	207-14 14.0 15.0	
				100	207-21 15.0 16.0	QC Sample
-13.0	16.0					

Hole No. HAAF-ADA-208

DRILLING LOG

DIVISION: USACE SPK SACRAMENTO

INSTALLATION: HAMILTON AAF (HAAF)

SHEET 1 OF 2 SHEETS

1. PROJECT: Northwest Alleged Disposal Area
2. LOCATION (Coordinates or Station): N 4,213,408.3 E 541,877.7
3. DRILLING AGENCY: VIRONEX
4. HOLE NO. *(As shown on drawing title and file number)*: HAAF-ADA-208
5. NAME OF DRILLER: Brian McColgan
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED --- DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 16.0
10. SIZE AND TYPE OF BIT: 3.74 in
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*: MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Direct Push
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 0; UNDISTURBED 2
14. TOTAL NUMBER CORE BOXES: 0
15. ELEVATION GROUND WATER: 2.8
16. DATE HOLE: STARTED 11/18/2003; COMPLETED 11/18/2003
17. ELEVATION TOP OF HOLE: +3.0
18. TOTAL CORE RECOVERY FOR BORING: 80 %
19. GEOLOGIST: Tim Crummett

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
+3.0	0.0		Organic Soil/Clay with Root Particles.			
+1.0	2.0		Moist, Loose, Sandy Silt; 80% Silt, 20% Fine-grained Sand. Brown (4/3).			
-1.0	4.0		Moist, Loose, Sandy Silt; 80% Silt, 20% Fine-grained Sand. Dark Grey (5/2).			
				100	208-06 6.0 7.0	

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE: 3.0

Hole No. HAAF-ADA-208

PROJECT: Northwest Alleged Disposal Area

INSTALLATION: HAMILTON AAF (HAAF)

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
-5.2	8.2					
			Wet, Loose, Sandy Silt; 80% Silt, 10% Clay, 10% Fine-grained Sand. Dark Grey (5/2).			
-9.0	12.0					
			Moist, Soft, Clay; 70% Plastic Fines, 30% Fined-grained Sand, Olive Gray (5/2 5Y).			
				100	208-14 14.0 15.0	
-13.0	16.0					

Hole No. HAAF-ADA-2081

DRILLING LOG	DIVISION: USACE SPK SACRAMENTO	INSTALLATION: HAMILTON AAF (HAAF)	SHEET 1 OF 2 SHEETS

1. PROJECT	Northwest Alleged Disposal Area
2. LOCATION (Coordinates or Station)	N 4,213,408.3 E 541,877.7
3. DRILLING AGENCY	VIRONEX
4. HOLE NO. *(As shown on drawing title and file number)*	HAAF-ADA-2081
5. NAME OF DRILLER	Brian McColgan
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED --- DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	16.0
10. SIZE AND TYPE OF BIT	3.74 in.
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*	MSL
12. MANUFACTURER'S DESIGNATION OF DRILL	Direct Push
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED: 0 / UNDISTURBED: 0
14. TOTAL NUMBER CORE BOXES	0
15. ELEVATION GROUND WATER	2.8
16. DATE HOLE	STARTED: 11/18/2003 / COMPLETED: 11/18/2003
17. ELEVATION TOP OF HOLE	+3.0
18. TOTAL CORE RECOVERY FOR BORING	80 %
19. GEOLOGIST	Tim Crummett

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
+3.0	0.0		Organic Soil/Clay with Root Particles.		0 0.0 0.0	No Samples Collected.
+1.5	1.5		Moist, Soft, Lean Clay; 5% Organic Particles, Dark Brown (3/3).			
-5.0	8.0					

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE: 3.0

Hole No. HAAF-ADA-2081

PROJECT: Northwest Alleged Disposal Area

INSTALLATION: HAMILTON AAF (HAAF)

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
			Wet Non-plastic and Plastic Clays, Dark Gray().			
-8.5	11.5					
			Moist, Stiff Sandy Lean Clay; 30% Fine-grained Sand, Dark Brown (3/3).			
-13.0	16.0					

Hole No. HAAF-ADA-2082

DRILLING LOG	DIVISION: USACE SPK SACRAMENTO	INSTALLATION: HAMILTON AAF (HAAF)	SHEET 1 OF 2 SHEETS

1. PROJECT	Northwest Alleged Disposal Area
2. LOCATION (Coordinates or Station)	N 4,213,408.3 E 541,877.7
3. DRILLING AGENCY	VIRONEX
4. HOLE NO. *(As shown on drawing title and file number)*	HAAF-ADA-2082
5. NAME OF DRILLER	Brian McColgan
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED --- DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	16.0
10. SIZE AND TYPE OF BIT	3.74 in.
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*	MSL
12. MANUFACTURER'S DESIGNATION OF DRILL	Direct Push
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED: 0 / UNDISTURBED: 0
14. TOTAL NUMBER CORE BOXES	0
15. ELEVATION GROUND WATER	2.8
16. DATE HOLE	STARTED: 11/18/2003 / COMPLETED: 11/18/2003
17. ELEVATION TOP OF HOLE	+3.0
18. TOTAL CORE RECOVERY FOR BORING	80 %
19. GEOLOGIST	Tim Crummett

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
+3.0	0.0		Organic Soil/Clay with Root Particles.		0 0.0 0.0	No Samples Collected.
+2.0	1.0		Poorly-graded, Fine-grade Sand w/Clay; 90% Fine-grained Sand, 10% Non-Plastic Fines, Pale Brown (6/3).			
-1.5	4.5		Wet/Moist, Soft, Silt; 80% Non-plastic Fines, 10% Fine-grained Sand, 10% Organics, Dark Grey (5/2).			

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE: 3.0

Hole No. HAAF-ADA-2082

PROJECT: Northwest Alleged Disposal Area

INSTALLATION: HAMILTON AAF (HAAF)

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Wet/Moist, Soft, Silt; 80% Non-plastic Fines, 10% Fine-grained Sand, 10% Organics, Dark Grey (5/2). *(continued)*			
-10.0	13.0					
			Moist, Soft, Sandy Silt; 70% Silt, 30% Fine-grained Sand. Brown (5/3).			
-13.0	16.0					

Hole No. HAAF-ADA-209

DRILLING LOG

DIVISION: USACE SPK SACRAMENTO

INSTALLATION: HAMILTON AAF (HAAF)

SHEET 1 OF 2 SHEETS

1. PROJECT: Northwest Alleged Disposal Area
2. LOCATION (Coordinates or Station): N 4,213,508.5 E 541,856.5
3. DRILLING AGENCY: VIRONEX
4. HOLE NO. (As shown on drawing title and file number): HAAF-ADA-209
5. NAME OF DRILLER: Brian McColgan
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED --- DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 16.0
10. SIZE AND TYPE OF BIT: 3.74 in
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Direct Push
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 0; UNDISTURBED 2
14. TOTAL NUMBER CORE BOXES: 0
15. ELEVATION GROUND WATER: 2.8
16. DATE HOLE: STARTED 11/19/2003; COMPLETED 11/19/2003
17. ELEVATION TOP OF HOLE: +3.0
18. TOTAL CORE RECOVERY FOR BORING: 80 %
19. GEOLOGIST: Tim Crummett

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
+3.0	0.0		Moist, Soft Lean Clay: 85% Plastic Fine Clay, 10% Fine Sand, 5% Organic Clay. Dark yellow-brown (4/4).			
+1.8	1.3		Moist, Soft Lean Clay: 90% Plastic Fine Clay, 5% Fine sand, 5% Organic Clay. Dark gray-brown (4/2).			
-0.8	3.8		Moist, Soft Lean Clay: 60% Plastic Fine Clay, 40% Fine Sand, Trace Organic Clay. Dark yellow-brown (4/4).	100	209-4 4.0 5.0	

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE: 3.0

Hole No. HAAF-ADA-209

PROJECT: Northwest Alleged Disposal Area

INSTALLATION: HAMILTON AAF (HAAF)

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
-5.3	8.3					
			Wet, Soft Clay: 90% Plastic Fine Clay, 10% Fine Sand, Dark Brown (3/3).			
-9.0	12.0					
			Moist to Wet Soft Clay: 60% Plastic Fine Clay, 40% Fine Sand, Brown (4/3).			
				100	209-14 14.0 15.0	
-12.0	15.0					
			Wet, Soft Clay: 90% Plastic Fine Clay, 10% Fine Sand, Dark Brown (3/3).			
-13.0	16.0					

Hole No. HAAF-ADA-210

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	USACE SPK SACRAMENTO	HAMILTON AAF (HAAF)	1 OF 2 SHEETS

1. PROJECT	Northwest Alleged Disposal Area
2. LOCATION (Coordinates or Station)	N 4,213,506.6 E 541,812.9
3. DRILLING AGENCY	VIRONEX
4. HOLE NO. *(As shown on drawing title and file number)*	HAAF-ADA-210
5. NAME OF DRILLER	Brian McColgan
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED --- DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	16.0
10. SIZE AND TYPE OF BIT	3.74 in
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*	MSL
12. MANUFACTURER'S DESIGNATION OF DRILL	Direct Push
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED 0 / UNDISTURBED 2
14. TOTAL NUMBER CORE BOXES	0
15. ELEVATION GROUND WATER	2.8
16. DATE HOLE	STARTED 11/18/2003 / COMPLETED 11/18/2003
17. ELEVATION TOP OF HOLE	+3.0
18. TOTAL CORE RECOVERY FOR BORING	80 %
19. GEOLOGIST	Tim Crummett

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
+3.0	0.0		Moist, Soft Lean Organic Clay			
+2.0	1.0		Moist, Soft, Sandy Lean Clay; 70% Plastic Fines, 25% Fine-grained Sand, 5% Organic, Dark Brown (3/3).			
				100	210-7 2.0 3.0	
-4.0	7.0		Wet, Soft, Sandy Lean Clay; 70% Plastic Fines, 25% Fine-grained Sand, 5% Organic, Dark Brown (3/3).			

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE: 3.0

Hole No. HAAF-ADA-210

PROJECT: Northwest Alleged Disposal Area

INSTALLATION: HAMILTON AAF (HAAF)

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Wet, Soft, Sandy Lean Clay; 70% Plastic Fines, 25% Fine-grained Sand, 5% Organic, Dark Brown (3/3). *(continued)*			
-7.0	10.0					
			Wet, Soft, 70% Plastic Fines, 30% Fine-grained Sand, Dark Grey (3/1).			
-8.5	11.5					
			Wet, Stiff, 70% Plastic Fines, 30 Fine-grained Sand, Dark Grey (3/1).			
				100	210-14 13.5 14.5	MS/MSD
-13.0	16.0					

DRILLING LOG

DIVISION: USACE SPK SACRAMENTO

INSTALLATION: HAMILTON AAF (HAAF)

SHEET 1 OF 2 SHEETS

1. PROJECT: Northwest Alleged Disposal Area
2. LOCATION (Coordinates or Station): N 4,213,481.8 E 541,827.9
3. DRILLING AGENCY: VIRONEX
4. HOLE NO. *(As shown on drawing title and file number)*: HAAF-ADA-211
5. NAME OF DRILLER: Brian McColgan
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ___ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 16.0
10. SIZE AND TYPE OF BIT: 3.74 in
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*: MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Direct Push
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 0; UNDISTURBED 2
14. TOTAL NUMBER CORE BOXES: 0
15. ELEVATION GROUND WATER: 2.8
16. DATE HOLE: STARTED 11/19/2003; COMPLETED 11/19/2003
17. ELEVATION TOP OF HOLE: +3.0
18. TOTAL CORE RECOVERY FOR BORING: 80 %
19. GEOLOGIST: Tim Crummett

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
+3.0	0.0		Saturated, Organic Clay.			
+2.5	0.5		Moist Soft Lean Clay; 80% Plastic Fines, 15% Fine Sand, 5% Organic matter. Dark Grey and Brown (3/2).			
-1.0	4.0		Moist Soft Lean Clay; 90% Plastic Fines, 10% Fine Sand, Tarce Organic matter. Dark Grey-Brown (3/2).	100	211-6 5.0 6.0	
-4.0	7.0		Wet, Soft Lean Clay; 90% Plastic Fines, 10% Fine Sand, Tarce Organic matter. Dark Grey-Brown (3/2).			

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE: 3.0

Hole No. HAAF-ADA-211

PROJECT: Northwest Alleged Disposal Area

INSTALLATION: HAMILTON AAF (HAAF)

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
-6.0	9.0		Wet, Soft Lean Clay; 90% Plastic Fines, 10% Fine Sand, Tarce Organic matter. Dark Grey-Brown (3/2). *(continued)*			
-7.0	10.0		Wet to Moist Sandy Clay; 60% Fine-grained Sand, 40% Fine to medium-grained Sand, Dark Grey (4/1). Note: Also found the presence of Carbonate Shell Fragments.			
-11.0	14.0		Dry, Loose Silty Sand; 70% Fine-grained Sand, 30% Non-plastic Fines, Brown-Yellow (6/8). Possibly Decomposed Bedrock.	100	211-14 13.0 14.0	
-13.0	16.0		Bedrock Matrerial. Refusal at 14 feet.			

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PROJECT: Northwest Alleged Disposal Area

HOLE NO.: HAAF-ADA-211

Hole No. HAAF-ADA-212

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	USACE SPK SACRAMENTO	HAMILTON AAF (HAAF)	1 OF 2 SHEETS

1. PROJECT	Northwest Alleged Disposal Area
2. LOCATION (Coordinates or Station)	N 4,213,414.4 E 541,852.0
3. DRILLING AGENCY	VIRONEX
4. HOLE NO. *(As shown on drawing title and file number)*	HAAF-ADA-212
5. NAME OF DRILLER	Brian McColgan
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED --- DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	16.0
10. SIZE AND TYPE OF BIT	3.74 in
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*	MSL
12. MANUFACTURER'S DESIGNATION OF DRILL	Direct Push
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED 0 / UNDISTURBED 2
14. TOTAL NUMBER CORE BOXES	0
15. ELEVATION GROUND WATER	2.8
16. DATE HOLE	STARTED 11/18/2003 / COMPLETED 11/18/2003
17. ELEVATION TOP OF HOLE	+3.0
18. TOTAL CORE RECOVERY FOR BORING	80 %
19. GEOLOGIST	Tim Crummett

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
+3.0	0.0		Organic Clay with Root Particles.			
+1.5	1.5		Moist, Soft Lean Clay: 85% Plastic Fine Clay, 10% Fine-grained Sand, 5% Organic Clay. Dark Yellow-Brown (4/4). Note: Carbonate shells found at approximately 7 feet.			
				100	212-06 6.0 7.0	
-5.0	8.0					

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE: 3.0

Hole No. HAAF-ADA-212

PROJECT: Northwest Alleged Disposal Area

INSTALLATION: HAMILTON AAF (HAAF)

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
-6.0	9.0		Wet, Soft, Silt; 60% Non-plastic Fines, 40% Fine-grained Sand, Trace of Organic Clay. Grey-Brown (5/2).			
-9.3	12.3		Moist, Stiff Lean Clay: 80% Non-plastic Fine Clay, 20% Fine-grained Sand. Grey-Brown (5/2).			
-13.0	16.0		Moist, Hard Lean Clay: 90% Non-plastic Fine Clay, 10% Fine-grained Sand. Dark Yellow-Brown (5/4).	100	212-14 14.0 15.0	

Appendix D

CHEMICAL ANALYTICAL REPORT
AND
CHAIN OF CUSTODY FORMS

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
U.S. Army Corps of Engineers
Attention: Carleton Fong.
1325 J Street
Sacramento CA 95814-2922
Tel: (916)557-7646 Fax: (916)557-5307

Service ID #: 801-036230
Collected by: BV/TC
Collected on: 11/19/03

Received: 11/20/03
Extracted: 11/24/03
Tested: 11/20-12/02/03
Reported: 12/10/03

Sample Description: Soil from Hamilton AAF
Project Description: Northwest Alleged Disposal Area

Analysis of Soil Samples

Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-21-14 03-06230-1	HAAF-ADA-201-06 03-06230-2	HAAF-ADA-201-14 03-06230-3
MOISTURE	ASTM-D2216	%Moisture	0.5	0.10	46.6	49.8	45.3
PH	9045C	pH unit	0.01	0.01	7.66	7.27	7.93
TTLC 17 METALS							
Dilution Factor					1	1	1
ANTIMONY	SW6010B	mg/kg	3	0.11	<5.6	<6.0	<5.5
ARSENIC	SW6010B	mg/kg	5	0.099	5.4J	9.8J	5.9J
BARIUM	SW6010B	mg/kg	100	0.074	43.5J	43.6J	43.3J
BERYLLIUM	SW6010B	mg/kg	0.5	0.004	<0.94	<1.0	0.10J
CADMIUM	SW6010B	mg/kg	0.5	0.011	0.11J	0.25J	0.12J
CHROMIUM	SW6010B	mg/kg	10	0.051	82.9	91.0	76.9
COBALT	SW6010B	mg/kg	10	0.020	18.1J	19.4J	17.2J
COPPER	SW6010B	mg/kg	10	0.088	33.7	38.0	37.1
LEAD	SW6010B	mg/kg	20	0.050	9.2J	9.7J	10.8J
MERCURY	SW7471A	mg/kg	0.1	0.007	0.10J	0.13J	0.11J
MOLYBDENUM	SW6010B	mg/kg	2	0.040	<3.7	<4.0	<3.7
NICKEL	SW6010B	mg/kg	10	0.056	81.7	90.3	80.1
SELENIUM	SW6010B	mg/kg	0.5	0.069	2.7	2.3	0.77J
SILVER	SW6010B	mg/kg	0.5	0.030	<0.94	<1.0	<0.91
THALLIUM	SW6010B	mg/kg	10	0.062	<19	<20	<18
VANADIUM	SW6010B	mg/kg	10	0.028	69.8	74.9	65.7
ZINC	SW6010B	mg/kg	10	0.14	80.0	88.4	80.7
Dilution Factor					1.11	1.85	1.51
PHC AS GASOLINE(C6-C10)	SW8015B	mg/kg	5	0.015	0.03J	0.07J	0.05J
Dilution Factor					1	1	1
PHC AS DIESEL FUEL(C10-C28)	SW8015B	mg/kg	100	1.1	3J (a)	4J (a)	4J (a)

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-21-14 03-06230-1	HAAF-ADA-201-06 03-06230-2	HAAF-ADA-201-14 03-06230-3
VOLATILE ORGANICS							
Dilution Factor					1.1	1.68	1.61
ACETONE	SW8260B	µg/kg	50	6.8	25J	72J	44J
BENZENE	SW8260B	µg/kg	5	0.21	<10	<17	<15
BROMODICHLOROMETHANE	SW8260B	µg/kg	5	0.94	<10	<17	<15
BROMOFORM	SW8260B	µg/kg	5	0.40	<10	<17	<15
BROMOMETHANE	SW8260B	µg/kg	5	0.59	<10	<17	<15
2-BUTANONE (MEK)	SW8260B	µg/kg	100	3.6	<210	13J	<290
CARBON DISULFIDE	SW8260B	µg/kg	5	0.21	8J	<17	6J
CARBON TETRACHLORIDE	SW8260B	µg/kg	5	0.78	<10	<17	<15
CHLOROBENZENE	SW8260B	µg/kg	5	0.28	<10	<17	<15
DIBROMOCHLOROMETHANE	SW8260B	µg/kg	5	0.43	<10	<17	<15
CHLOROETHANE	SW8260B	µg/kg	5	0.75	<10	<17	<15
CHLOROFORM	SW8260B	µg/kg	5	0.46	<10	<17	<15
CHLOROMETHANE	SW8260B	µg/kg	5	0.33	<10	<17	<15
1,2-DICHLOROBENZENE	SW8260B	µg/kg	5	0.19	<10	<17	<15
1,3-DICHLOROBENZENE	SW8260B	µg/kg	5	0.29	<10	<17	<15
1,4-DICHLOROBENZENE	SW8260B	µg/kg	5	0.20	<10	<17	<15
DICHLORODIFLUOROMETHANE	SW8260B	µg/kg	5	0.77	<10	<17	<15
1,1-DICHLOROETHANE	SW8260B	µg/kg	5	0.30	<10	<17	<15
1,2-DICHLOROETHANE	SW8260B	µg/kg	5	0.39	<10	<17	<15
1,1-DICHLOROETHENE	SW8260B	µg/kg	5	0.23	<10	<17	<15
CIS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	0.51	<10	<17	<15
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	0.40	<10	<17	<15
1,2-DICHLOROPROPANE	SW8260B	µg/kg	5	0.52	<10	<17	<15
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	0.45	<10	<17	<15
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	0.28	<10	<17	<15
ETHYLBENZENE	SW8260B	µg/kg	5	0.32	<10	<17	<15
2-HEXANONE	SW8260B	µg/kg	10	0.25	<21	<33	<29
METHYLENE CHLORIDE	SW8260B	µg/kg	5	0.52	6J	9J	9J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/kg	50	0.50	<100	<170	<150
STYRENE	SW8260B	µg/kg	5	0.25	<10	<17	<15
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	0.47	<10	<17	<15
TETRACHLOROETHENE	SW8260B	µg/kg	5	0.50	<10	<17	<15
TOLUENE	SW8260B	µg/kg	5	0.57	<10	<17	<15
1,1,1-TRICHLOROETHANE	SW8260B	µg/kg	5	0.78	<10	<17	<15
1,1,2-TRICHLOROETHANE	SW8260B	µg/kg	5	0.60	<10	<17	<15
TRICHLOROETHENE	SW8260B	µg/kg	5	0.47	<10	<17	<15
TRICHLOROFLUOROMETHANE	SW8260B	µg/kg	5	0.40	<10	<17	<15
1,1,2-TRICHLOROTRIFLUOROETHANE	SW8260B	µg/kg	10	0.88	<21	<33	<29
VINYL ACETATE	SW8260B	µg/kg	10	0.98	<21	<33	<29
VINYL CHLORIDE	SW8260B	µg/kg	5	0.52	<10	<17	<15
XYLENES, TOTAL	SW8260B	µg/kg	15	0.39	<31	<50	<44

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Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-21-14 03-06230-1	HAAF-ADA-201-06 03-06230-2	HAAF-ADA-201-14 03-06230-3
SEMI-VOC COMPOUNDS							
Dilution Factor					1	1	1
ACENAPHTHENE	SW8270C	µg/kg	330	25	< 620	< 660	< 600
ACENAPHTHYLENE	SW8270C	µg/kg	330	22	< 620	< 660	< 600
ANTHRACENE	SW8270C	µg/kg	330	28	< 620	< 660	< 600
BENZO(A)ANTHRACENE	SW8270C	µg/kg	330	21	< 620	< 660	< 600
BENZO(A)PYRENE	SW8270C	µg/kg	330	24	< 620	< 660	< 600
BENZO(B)FLUORANTHENE	SW8270C	µg/kg	330	25	< 620	< 660	< 600
BENZO(G,H,I)PERYLENE	SW8270C	µg/kg	330	37	< 620	< 660	< 600
BENZO(K)FLUORANTHENE	SW8270C	µg/kg	330	27	< 620	< 660	< 600
BENZYL ALCOHOL	SW8270C	µg/kg	28 (b)	28	< 52	< 56	< 51
BIS(2-CHLOROETHOXY)METHANE	SW8270C	µg/kg	330	24	< 620	< 660	< 600
BIS(2-CHLOROETHYL)ETHER	SW8270C	µg/kg	330	39	< 620	< 660	< 600
BIS(2-CHLOROISOPROPYL)ETHER	SW8270C	µg/kg	330	25	< 620	< 660	< 600
BIS(2-ETHYLHEXYL)PHTHALATE	SW8270C	µg/kg	330	27	< 620	< 660	< 600
4-BROMOPHENYL-PHENYLETHER	SW8270C	µg/kg	330	33	< 620	< 660	< 600
BUTYLBENZYLPHTHALATE	SW8270C	µg/kg	330	23	< 620	< 660	< 600
4-CHLORO-3-METHYLPHENOL	SW8270C	µg/kg	330	25	< 620	< 660	< 600
4-CHLOROANILINE	SW8270C	µg/kg	100 (b)	101	< 190	< 200	< 180
2-CHLORONAPHTHALENE	SW8270C	µg/kg	330	32	< 620	< 660	< 600
2-CHLOROPHENOL	SW8270C	µg/kg	330	29	< 620	< 660	< 600
4-CHLOROPHENYL PHENYL ETHER	SW8270C	µg/kg	330	28	< 620	< 660	< 600
CHRYSENE	SW8270C	µg/kg	330	26	< 620	< 660	< 600
DI-N-BUTYL PHTHALATE	SW8270C	µg/kg	330	34	< 620	< 660	< 600
DI-N-OCTYLPHTHALATE	SW8270C	µg/kg	330	25	< 620	< 660	< 600
DIBENZ(A,H)ANTHRACENE	SW8270C	µg/kg	330	31	< 620	< 660	< 600
DIBENZOFURAN	SW8270C	µg/kg	330	25	< 620	< 660	< 600
1,2-DICHLOROBENZENE	SW8270C	µg/kg	330	26	< 620	< 660	< 600
1,3-DICHLOROBENZENE	SW8270C	µg/kg	330	22	< 620	< 660	< 600
1,4-DICHLOROBENZENE	SW8270C	µg/kg	330	18	< 620	< 660	< 600
3,3'-DICHLOROBENZIDINE	SW8270C	µg/kg	130 (b)	130	< 240	< 260	< 240
2,4-DICHLOROPHENOL	SW8270C	µg/kg	330	18	< 620	< 660	< 600
2,6-DICHLOROPHENOL	SW8270C	µg/kg	330	25	< 620	< 660	< 600
DIETHYL PHTHALATE	SW8270C	µg/kg	330	33	< 620	< 660	< 600
DIMETHYLPHTHALATE	SW8270C	µg/kg	330	35	< 620	< 660	< 600
2,4-DIMETHYLPHENOL	SW8270C	µg/kg	330	20	< 620	< 660	< 600
4,6-DINITRO-2-METHYLPHENOL	SW8270C	µg/kg	1700	93	< 3100	< 3300	< 3000
2,4-DINITROPHENOL	SW8270C	µg/kg	1700	131	< 3100	< 3300	< 3000
2,4-DINITROTOLUENE	SW8270C	µg/kg	330	24	< 620	< 660	< 600
2,6-DINITROTOLUENE	SW8270C	µg/kg	330	27	< 620	< 660	< 600
FLUORANTHENE	SW8270C	µg/kg	330	27	< 620	< 660	< 600
FLUORENE	SW8270C	µg/kg	330	28	< 620	< 660	< 600
HEXACHLOROBENZENE	SW8270C	µg/kg	330	33	< 620	< 660	< 600
HEXACHLOROBUTADIENE	SW8270C	µg/kg	330	27	< 620	< 660	< 600

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-21-14 03-06230-1	HAAF-ADA-201-06 03-06230-2	HAAF-ADA-201-14 03-06230-3
HEXACHLOROCYCLOPENTADIENE	SW8270C	µg/kg	140 (b)	140	<260	<280	<260
HEXACHLOROETHANE	SW8270C	µg/kg	330	28	<620	<660	<600
INDENO(1,2,3-C,D)PYRENE	SW8270C	µg/kg	330	31	<620	<660	<600
ISOPHORONE	SW8270C	µg/kg	330	29	<620	<660	<600
2-METHYLNAPHTHALENE	SW8270C	µg/kg	330	25	<620	<660	<600
3/4-METHYLPHENOL	SW8270C	µg/kg	330	36	<620	<660	<600
2-METHYLPHENOL	SW8270C	µg/kg	330	28	<620	<660	<600
NAPHTHALENE	SW8270C	µg/kg	330	22	<620	<660	<600
2-NITROANILINE	SW8270C	µg/kg	3300	111	<6200	<6600	<6000
3-NITROANILINE	SW8270C	µg/kg	1700	109	<3100	<3300	<3000
4-NITROANILINE	SW8270C	µg/kg	1700	122	<3100	<3300	<3000
NITROBENZENE	SW8270C	µg/kg	330	23	<620	<660	<600
2-NITROPHENOL	SW8270C	µg/kg	330	18	<620	<660	<600
4-NITROPHENOL	SW8270C	µg/kg	1700	161	<3100	<3300	<3000
N-NITROSODI-N-PROPYLAMINE	SW8270C	µg/kg	330	32	<620	<660	<600
N-NITROSO-DIPHENYLAMINE	SW8270C	µg/kg	160 (b)	162	<300	<320	<300
PENTACHLOROPHENOL	SW8270C	µg/kg	1700	65	<3100	<3300	<3000
PHENANTHRENE	SW8270C	µg/kg	330	25	<620	<660	<600
PHENOL	SW8270C	µg/kg	330	23	<620	<660	<600
PYRENE	SW8270C	µg/kg	330	25	<620	<660	<600
1,2,4-TRICHLOROBENZENE	SW8270C	µg/kg	330	28	<620	<660	<600
2,4,5-TRICHLOROPHENOL	SW8270C	µg/kg	330	31	<620	<660	<600
2,4,6-TRICHLOROPHENOL	SW8270C	µg/kg	330	34	<620	<660	<600
ORGANOCHLORINE PESTICIDES							
Dilution Factor					1	1	1
ALDRIN	SW8081A	µg/kg	5	0.18	<9.4	<10	<9.1
BETA-BHC	SW8081A	µg/kg	5	0.086	<9.4	<10	<9.1
ALPHA-BHC	SW8081A	µg/kg	5	0.014	<9.4	<10	<9.1
DELTA-BHC	SW8081A	µg/kg	5	0.051	<9.4	<10	<9.1
GAMMA-BHC	SW8081A	µg/kg	5	0.036	<9.4	<10	<9.1
ALPHA-CHLORDANE	SW8081A	µg/kg	5	0.050	<9.4	<10	<9.1
GAMMA-CHLORDANE	SW8081A	µg/kg	5	0.040	<9.4	<10	<9.1
4,4'-DDD	SW8081A	µg/kg	5	0.10	<9.4	10J	60
4,4'-DDE	SW8081A	µg/kg	5	0.064	<9.4	2J	8J
4,4'-DDT	SW8081A	µg/kg	5	0.024	<9.4	45	339 (c)
DIELDRIN	SW8081A	µg/kg	5	0.034	<9.4	<10	<9.1
ENDOSULFAN I	SW8081A	µg/kg	5	0.017	<9.4	<10	<9.1
ENDOSULFAN II	SW8081A	µg/kg	5	0.12	<9.4	<10	<9.1
ENDOSULFAN SULFATE	SW8081A	µg/kg	5	0.35	<9.4	<10	<9.1
ENDRIN	SW8081A	µg/kg	5	0.026	<9.4	<10	<9.1
ENDRIN ALDEHYDE	SW8081A	µg/kg	5	0.030	<9.4	<10	<9.1
HEPTACHLOR	SW8081A	µg/kg	5	0.063	<9.4	<10	<9.1
HEPTACHLOR EPOXIDE	SW8081A	µg/kg	5	0.016	<9.4	<10	<9.1
METHOXYCHLOR	SW8081A	µg/kg	17	0.068	<32	<34	<31
TOXAPHENE	SW8081A	µg/kg	100	18	<190	<200	<180

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-202-02 03-06230-4	HAAF-ADA-202-14 03-06230-5	HAAF-ADA-205-06 03-06230-6
MOISTURE	ASTM-D2216	%Moisture	0.5	0.10	38.4	16.8	23.2
PH	9045C	pH unit	0.01	0.01	6.26	7.72	6.08
TTLC 17 METALS							
Dilution Factor					1	1	1
ANTIMONY	SW6010B	mg/kg	3	0.11	<4.9	<3.6	<3.9
ARSENIC	SW6010B	mg/kg	5	0.099	12.1	1.0J	3.3J
BARIUM	SW6010B	mg/kg	100	0.074	60.7J	108J	22.1J
BERYLLIUM	SW6010B	mg/kg	0.5	0.004	0.20J	0.19J	<0.65
CADMIUM	SW6010B	mg/kg	0.5	0.011	0.030J	<0.60	0.056J
CHROMIUM	SW6010B	mg/kg	10	0.051	104	18.1	23.0
COBALT	SW6010B	mg/kg	10	0.020	12.8J	5.6J	3.3J
COPPER	SW6010B	mg/kg	10	0.088	36.6	4.8J	9.6J
LEAD	SW6010B	mg/kg	20	0.050	11.0J	9.7J	6.3J
MERCURY	SW7471A	mg/kg	0.1	0.007	0.081J	0.059J	0.043J
MOLYBDENUM	SW6010B	mg/kg	2	0.040	3.8	<2.4	2.5J
NICKEL	SW6010B	mg/kg	10	0.056	69.2	10.3J	12.2J
SELENIUM	SW6010B	mg/kg	0.5	0.069	2.7	0.98	0.49J
SILVER	SW6010B	mg/kg	0.5	0.030	<0.81	<0.60	<0.65
THALLIUM	SW6010B	mg/kg	10	0.062	<16	<12	<13
VANADIUM	SW6010B	mg/kg	10	0.028	90.5	27.2	28.9
ZINC	SW6010B	mg/kg	10	0.14	93.4	14.5	21.4
Dilution Factor					1	0.85	0.85
PHC AS GASOLINE(C6-C10)	SW8015B	mg/kg	5	0.015	0.03J	0.02J	0.02J
Dilution Factor					1	1	1
PHC AS DIESEL FUEL(C10-C28)	SW8015B	mg/kg	100	1.1	6J [a]	<120	<130
VOLATILE ORGANICS							
Dilution Factor					0.96	0.87	1.2
ACETONE	SW8260B	µg/kg	50	6.8	<78	11J	<78
BENZENE	SW8260B	µg/kg	5	0.21	<7.8	<5.2	<7.8
BROMODICHLOROMETHANE	SW8260B	µg/kg	5	0.94	<7.8	<5.2	<7.8
BROMOFORM	SW8260B	µg/kg	5	0.40	<7.8	<5.2	<7.8
BROMOMETHANE	SW8260B	µg/kg	5	0.59	<7.8	<5.2	<7.8
2-BUTANONE (MEK)	SW8260B	µg/kg	100	3.6	<160	<100	<160
CARBON DISULFIDE	SW8260B	µg/kg	5	0.21	<7.8	2J	<7.8
CARBON TETRACHLORIDE	SW8260B	µg/kg	5	0.78	<7.8	<5.2	<7.8
CHLOROBENZENE	SW8260B	µg/kg	5	0.28	<7.8	<5.2	<7.8
DIBROMOCHLOROMETHANE	SW8260B	µg/kg	5	0.43	<7.8	<5.2	<7.8
CHLOROETHANE	SW8260B	µg/kg	5	0.75	<7.8	<5.2	<7.8
CHLOROFORM	SW8260B	µg/kg	5	0.46	<7.8	<5.2	<7.8
CHLOROMETHANE	SW8260B	µg/kg	5	0.33	<7.8	<5.2	<7.8
1,2-DICHLOROBENZENE	SW8260B	µg/kg	5	0.19	<7.8	<5.2	<7.8

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-202-02 03-06230-4	HAAF-ADA-202-14 03-06230-5	HAAF-ADA-205-06 03-06230-6
1,3-DICHLOROBENZENE	SW8260B	µg/kg	5	0.29	<7.8	<5.2	<7.8
1,4-DICHLOROBENZENE	SW8260B	µg/kg	5	0.20	<7.8	<5.2	<7.8
DICHLORODIFLUOROMETHANE	SW8260B	µg/kg	5	0.77	<7.8	<5.2	<7.8
1,1-DICHLOROETHANE	SW8260B	µg/kg	5	0.30	<7.8	<5.2	<7.8
1,2-DICHLOROETHANE	SW8260B	µg/kg	5	0.39	<7.8	<5.2	<7.8
1,1-DICHLOROETHENE	SW8260B	µg/kg	5	0.23	<7.8	<5.2	<7.8
CIS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	0.51	<7.8	<5.2	<7.8
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	0.40	<7.8	<5.2	<7.8
1,2-DICHLOROPROPANE	SW8260B	µg/kg	5	0.52	<7.8	<5.2	<7.8
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	0.45	<7.8	<5.2	<7.8
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	0.28	<7.8	<5.2	<7.8
ETHYLBENZENE	SW8260B	µg/kg	5	0.32	<7.8	<5.2	<7.8
2-HEXANONE	SW8260B	µg/kg	10	0.25	<16	<10	<16
METHYLENE CHLORIDE	SW8260B	µg/kg	5	0.52	5J	3J	5J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/kg	50	0.50	<78	<52	<78
STYRENE	SW8260B	µg/kg	5	0.25	<7.8	<5.2	<7.8
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	0.47	<7.8	<5.2	<7.8
TETRACHLOROETHENE	SW8260B	µg/kg	5	0.50	<7.8	<5.2	<7.8
TOLUENE	SW8260B	µg/kg	5	0.57	<7.8	<5.2	<7.8
1,1,1-TRICHLOROETHANE	SW8260B	µg/kg	5	0.78	<7.8	<5.2	<7.8
1,1,2-TRICHLOROETHANE	SW8260B	µg/kg	5	0.60	<7.8	<5.2	<7.8
TRICHLOROETHENE	SW8260B	µg/kg	5	0.47	<7.8	<5.2	<7.8
TRICHLOROFLUOROMETHANE	SW8260B	µg/kg	5	0.40	<7.8	<5.2	<7.8
1,1,2-TRICHLOROTRIFLUOROETHANE	SW8260B	µg/kg	10	0.88	<16	<10	<16
VINYL ACETATE	SW8260B	µg/kg	10	0.98	<16	<10	<16
VINYL CHLORIDE	SW8260B	µg/kg	5	0.52	<7.8	<5.2	<7.8
XYLENES, TOTAL	SW8260B	µg/kg	15	0.39	<23	<16	<23
SEMI-VOC COMPOUNDS							
Dilution Factor					1	1	1
ACENAPHTHENE	SW8270C	µg/kg	330	25	<540	<400	<430
ACENAPHTHYLENE	SW8270C	µg/kg	330	22	<540	<400	<430
ANTHRACENE	SW8270C	µg/kg	330	28	<540	<400	<430
BENZO(A)ANTHRACENE	SW8270C	µg/kg	330	21	<540	<400	<430
BENZO(A)PYRENE	SW8270C	µg/kg	330	24	<540	<400	<430
BENZO(B)FLUORANTHENE	SW8270C	µg/kg	330	25	<540	<400	<430
BENZO(G,H,I)PERYLENE	SW8270C	µg/kg	330	37	<540	<400	<430
BENZO(K)FLUORANTHENE	SW8270C	µg/kg	330	27	<540	<400	<430
BENZYL ALCOHOL	SW8270C	µg/kg	28 (b)	28	<45	<34	<36
BIS(2-CHLOROETHOXY)METHANE	SW8270C	µg/kg	330	24	<540	<400	<430
BIS(2-CHLOROETHYL)ETHER	SW8270C	µg/kg	330	39	<540	<400	<430
BIS(2-CHLOROISOPROPYL)ETHER	SW8270C	µg/kg	330	25	<540	<400	<430
BIS(2-ETHYLHEXYL)PHTHALATE	SW8270C	µg/kg	330	27	<540	<400	<430
4-BROMOPHENYL-PHENYLETHER	SW8270C	µg/kg	330	33	<540	<400	<430
BUTYLBENZYLPHTHALATE	SW8270C	µg/kg	330	23	<540	<400	<430
4-CHLORO-3-METHYLPHENOL	SW8270C	µg/kg	330	25	<540	<400	<430
4-CHLOROANILINE	SW8270C	µg/kg	100 (b)	101	<160	<120	<130
2-CHLORONAPHTHALENE	SW8270C	µg/kg	330	32	<540	<400	<430

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Tel: (909) 590-1828 Fax: (909) 590-1498

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Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-202-02 03-06230-4	HAAF-ADA-202-14 03-06230-5	HAAF-ADA-205-06 03-06230-6
2-CHLOROPHENOL	SW8270C	µg/kg	330	29	< 540	< 400	< 430
4-CHLOROPHENYL PHENYL ETHER	SW8270C	µg/kg	330	28	< 540	< 400	< 430
CHRYSENE	SW8270C	µg/kg	330	26	< 540	< 400	< 430
DI-N-BUTYL PHTHALATE	SW8270C	µg/kg	330	34	< 540	< 400	< 430
DI-N-OCTYLPHTHALATE	SW8270C	µg/kg	330	25	< 540	< 400	< 430
DIBENZ(A,H)ANTHRACENE	SW8270C	µg/kg	330	31	< 540	< 400	< 430
DIBENZOFURAN	SW8270C	µg/kg	330	25	< 540	< 400	< 430
1,2-DICHLOROBENZENE	SW8270C	µg/kg	330	26	< 540	< 400	< 430
1,3-DICHLOROBENZENE	SW8270C	µg/kg	330	22	< 540	< 400	< 430
1,4-DICHLOROBENZENE	SW8270C	µg/kg	330	18	< 540	< 400	< 430
3,3'-DICHLOROBENZIDINE	SW8270C	µg/kg	130 (b)	130	< 210	< 160	< 170
2,4-DICHLOROPHENOL	SW8270C	µg/kg	330	18	< 540	< 400	< 430
2,6-DICHLOROPHENOL	SW8270C	µg/kg	330	25	< 540	< 400	< 430
DIETHYL PHTHALATE	SW8270C	µg/kg	330	33	< 540	< 400	< 430
DIMETHYLPHTHALATE	SW8270C	µg/kg	330	35	< 540	< 400	< 430
2,4-DIMETHYLPHENOL	SW8270C	µg/kg	330	20	< 540	< 400	< 430
4,6-DINITRO-2-METHYLPHENOL	SW8270C	µg/kg	1700	93	< 2700	< 2000	< 2100
2,4-DINITROPHENOL	SW8270C	µg/kg	1700	131	< 2700	< 2000	< 2100
2,4-DINITROTOLUENE	SW8270C	µg/kg	330	24	< 540	< 400	< 430
2,6-DINITROTOLUENE	SW8270C	µg/kg	330	27	< 540	< 400	< 430
FLUORANTHENE	SW8270C	µg/kg	330	27	< 540	< 400	< 430
FLUORENE	SW8270C	µg/kg	330	28	< 540	< 400	< 430
HEXACHLOROBENZENE	SW8270C	µg/kg	330	33	< 540	< 400	< 430
HEXACHLOROBUTADIENE	SW8270C	µg/kg	330	27	< 540	< 400	< 430
HEXACHLOROCYCLOPENTADIENE	SW8270C	µg/kg	140 (b)	140	< 230	< 170	< 180
HEXACHLOROETHANE	SW8270C	µg/kg	330	28	< 540	< 400	< 430
INDENO(1,2,3-C,D)PYRENE	SW8270C	µg/kg	330	31	< 540	< 400	< 430
ISOPHORONE	SW8270C	µg/kg	330	29	< 540	< 400	< 430
2-METHYLNAPHTHALENE	SW8270C	µg/kg	330	25	< 540	< 400	< 430
3/4-METHYLPHENOL	SW8270C	µg/kg	330	36	< 540	< 400	< 430
2-METHYLPHENOL	SW8270C	µg/kg	330	28	< 540	< 400	< 430
NAPHTHALENE	SW8270C	µg/kg	330	22	< 540	< 400	< 430
2-NITROANILINE	SW8270C	µg/kg	3300	111	< 5400	< 4000	< 4300
3-NITROANILINE	SW8270C	µg/kg	1700	109	< 2700	< 2000	< 2100
4-NITROANILINE	SW8270C	µg/kg	1700	122	< 2700	< 2000	< 2100
NITROBENZENE	SW8270C	µg/kg	330	23	< 540	< 400	< 430
2-NITROPHENOL	SW8270C	µg/kg	330	18	< 540	< 400	< 430
4-NITROPHENOL	SW8270C	µg/kg	1700	161	< 2700	< 2000	< 2100
N-NITROSODI-N-PROPYLAMINE	SW8270C	µg/kg	330	32	< 540	< 400	< 430
N-NITROSO-DIPHENYLAMINE	SW8270C	µg/kg	160 (b)	162	< 260	< 190	< 210
PENTACHLOROPHENOL	SW8270C	µg/kg	1700	65	< 2700	< 2000	< 2100
PHENANTHRENE	SW8270C	µg/kg	330	25	< 540	< 400	< 430
PHENOL	SW8270C	µg/kg	330	23	< 540	< 400	< 430
PYRENE	SW8270C	µg/kg	330	25	< 540	< 400	< 430
1,2,4-TRICHLOROBENZENE	SW8270C	µg/kg	330	28	< 540	< 400	< 430
2,4,5-TRICHLOROPHENOL	SW8270C	µg/kg	330	31	< 540	< 400	< 430
2,4,6-TRICHLOROPHENOL	SW8270C	µg/kg	330	34	< 540	< 400	< 430

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Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-202-02 03-06230-4	HAAF-ADA-202-14 03-06230-5	HAAF-ADA-205-06 03-06230-6
ORGANOCHLORINE PESTICIDES							
Dilution Factor					1	1	1
ALDRIN	SW8081A	µg/kg	5	0.18	-	<6.0	<6.5
BETA-BHC	SW8081A	µg/kg	5	0.086	-	<6.0	<6.5
ALPHA-BHC	SW8081A	µg/kg	5	0.014	-	<6.0	<6.5
DELTA-BHC	SW8081A	µg/kg	5	0.051	-	<6.0	<6.5
GAMMA-BHC	SW8081A	µg/kg	5	0.036	-	<6.0	<6.5
ALPHA-CHLORDANE	SW8081A	µg/kg	5	0.050	-	<6.0	<6.5
GAMMA-CHLORDANE	SW8081A	µg/kg	5	0.040	-	<6.0	<6.5
4,4'-DDD	SW8081A	µg/kg	5	0.10	-	<6.0	0.5J
4,4'-DDE	SW8081A	µg/kg	5	0.064	-	<6.0	0.3J
4,4'-DDT	SW8081A	µg/kg	5	0.024	-	<6.0	0.9J
DIELDRIN	SW8081A	µg/kg	5	0.034	-	<6.0	<6.5
ENDOSULFAN I	SW8081A	µg/kg	5	0.017	-	<6.0	<6.5
ENDOSULFAN II	SW8081A	µg/kg	5	0.12	-	<6.0	<6.5
ENDOSULFAN SULFATE	SW8081A	µg/kg	5	0.35	-	<6.0	<6.5
ENDRIN	SW8081A	µg/kg	5	0.026	-	<6.0	<6.5
ENDRIN ALDEHYDE	SW8081A	µg/kg	5	0.030	-	<6.0	<6.5
HEPTACHLOR	SW8081A	µg/kg	5	0.063	-	<6.0	<6.5
HEPTACHLOR EPOXIDE	SW8081A	µg/kg	5	0.016	-	<6.0	<6.5
METHOXYCHLOR	SW8081A	µg/kg	17	0.068	-	<20	<22
TOXAPHENE	SW8081A	µg/kg	100	18	-	<120	<130

Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-205-14 03-06230-7	HAAF-ADA-207-05 03-06230-8	HAAF-ADA-207-14 03-06230-9
MOISTURE	ASTM-D2216	%Moisture	0.5	0.10	19.3	47.3	17.5
PH	9045C	pH unit	0.01	0.01	7.36	5.27	7.18
TTLC 17 METALS							
Dilution Factor					1	1	1
ANTIMONY	SW6010B	mg/kg	3	0.11	<3.7	<5.7	<3.6
ARSENIC	SW6010B	mg/kg	5	0.099	2.8J	13.6	8.3
BARIUM	SW6010B	mg/kg	100	0.074	62.1J	128J	63.4J
BERYLLIUM	SW6010B	mg/kg	0.5	0.004	0.48J	1.9	0.37J
CADMIUM	SW6010B	mg/kg	0.5	0.011	<0.62	<0.95	<0.61
CHROMIUM	SW6010B	mg/kg	10	0.051	19.8	61.6	35.4
COBALT	SW6010B	mg/kg	10	0.020	8.6J	12.7J	7.9J
COPPER	SW6010B	mg/kg	10	0.088	9.9J	48.4	20.2
LEAD	SW6010B	mg/kg	20	0.050	7.6J	20.4J	16.2J
MERCURY	SW7471A	mg/kg	0.1	0.007	0.10J	0.36	0.088J
MOLYBDENUM	SW6010B	mg/kg	2	0.040	<2.5	1.7J	<2.4
NICKEL	SW6010B	mg/kg	10	0.056	16.1	105	37.4
SELENIUM	SW6010B	mg/kg	0.5	0.069	0.59J	<0.95	2.0
SILVER	SW6010B	mg/kg	0.5	0.030	<0.62	<0.95	<0.61
THALLIUM	SW6010B	mg/kg	10	0.062	<12	<19	<12
VANADIUM	SW6010B	mg/kg	10	0.028	37.0	55.8	48.0
ZINC	SW6010B	mg/kg	10	0.14	19.7	79.1	40.6
Dilution Factor					0.77	1.25	0.89
PHC AS GASOLINE(C6-C10)	SW8015B	mg/kg	5	0.015	0.02J	0.04J	0.02J
Dilution Factor					1	1	1
PHC AS DIESEL FUEL(C10-C28)	SW8015B	mg/kg	100	1.1	<120	4J [a]	<120

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Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-205-14 03-06230-7	HAAF-ADA-207-05 03-06230-8	HAAF-ADA-207-14 03-06230-9
VOLATILE ORGANICS							
Dilution Factor					1.02	1.51	0.9
ACETONE	SW8260B	µg/kg	50	6.8	14J	<140	16J
BENZENE	SW8260B	µg/kg	5	0.21	<6.3	<14	<5.5
BROMODICHLOROMETHANE	SW8260B	µg/kg	5	0.94	<6.3	<14	<5.5
BROMOFORM	SW8260B	µg/kg	5	0.40	<6.3	<14	<5.5
BROMOMETHANE	SW8260B	µg/kg	5	0.59	<6.3	<14	<5.5
2-BUTANONE (MEK)	SW8260B	µg/kg	100	3.6	<130	<290	<110
CARBON DISULFIDE	SW8260B	µg/kg	5	0.21	<6.3	<14	<5.5
CARBON TETRACHLORIDE	SW8260B	µg/kg	5	0.78	<6.3	<14	<5.5
CHLOROBENZENE	SW8260B	µg/kg	5	0.28	<6.3	<14	<5.5
DIBROMOCHLOROMETHANE	SW8260B	µg/kg	5	0.43	<6.3	<14	<5.5
CHLOROETHANE	SW8260B	µg/kg	5	0.75	<6.3	<14	<5.5
CHLOROFORM	SW8260B	µg/kg	5	0.46	<6.3	<14	<5.5
CHLOROMETHANE	SW8260B	µg/kg	5	0.33	<6.3	<14	<5.5
1,2-DICHLOROBENZENE	SW8260B	µg/kg	5	0.19	<6.3	<14	<5.5
1,3-DICHLOROBENZENE	SW8260B	µg/kg	5	0.29	<6.3	<14	<5.5
1,4-DICHLOROBENZENE	SW8260B	µg/kg	5	0.20	<6.3	<14	<5.5
DICHLORODIFLUOROMETHANE	SW8260B	µg/kg	5	0.77	<6.3	<14	<5.5
1,1-DICHLOROETHANE	SW8260B	µg/kg	5	0.30	<6.3	<14	<5.5
1,2-DICHLOROETHANE	SW8260B	µg/kg	5	0.39	<6.3	<14	<5.5
1,1-DICHLOROETHENE	SW8260B	µg/kg	5	0.23	<6.3	<14	<5.5
CIS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	0.51	<6.3	<14	<5.5
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	0.40	<6.3	<14	<5.5
1,2-DICHLOROPROPANE	SW8260B	µg/kg	5	0.52	<6.3	<14	<5.5
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	0.45	<6.3	<14	<5.5
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	0.28	<6.3	<14	<5.5
ETHYLBENZENE	SW8260B	µg/kg	5	0.32	<6.3	<14	<5.5
2-HEXANONE	SW8260B	µg/kg	10	0.25	<13	<29	<11
METHYLENE CHLORIDE	SW8260B	µg/kg	5	0.52	4J	9J	4J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/kg	50	0.50	<63	<140	<55
STYRENE	SW8260B	µg/kg	5	0.25	<6.3	<14	<5.5
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	0.47	<6.3	<14	<5.5
TETRACHLOROETHENE	SW8260B	µg/kg	5	0.50	<6.3	<14	<5.5
TOLUENE	SW8260B	µg/kg	5	0.57	<6.3	<14	<5.5
1,1,1-TRICHLOROETHANE	SW8260B	µg/kg	5	0.78	<6.3	<14	<5.5
1,1,2-TRICHLOROETHANE	SW8260B	µg/kg	5	0.60	<6.3	<14	<5.5
TRICHLOROETHENE	SW8260B	µg/kg	5	0.47	<6.3	<14	<5.5
TRICHLOROFLUOROMETHANE	SW8260B	µg/kg	5	0.40	<6.3	<14	<5.5
1,1,2-TRICHLOROTRIFLUOROETHANE	SW8260B	µg/kg	10	0.88	<13	<29	<11
VINYL ACETATE	SW8260B	µg/kg	10	0.98	<13	<29	<11
VINYL CHLORIDE	SW8260B	µg/kg	5	0.52	<6.3	<14	<5.5
XYLENES, TOTAL	SW8260B	µg/kg	15	0.39	<19	<43	<16

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Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-205-14 03-06230-7	HAAF-ADA-207-05 03-06230-8	HAAF-ADA-207-14 03-06230-9
SEMI-VOC COMPOUNDS							
Dilution Factor					1	1	1
ACENAPHTHENE	SW8270C	µg/kg	330	25	<410	<630	<400
ACENAPHTHYLENE	SW8270C	µg/kg	330	22	<410	<630	<400
ANTHRACENE	SW8270C	µg/kg	330	28	<410	<630	<400
BENZO(A)ANTHRACENE	SW8270C	µg/kg	330	21	<410	<630	<400
BENZO(A)PYRENE	SW8270C	µg/kg	330	24	<410	<630	<400
BENZO(B)FLUORANTHENE	SW8270C	µg/kg	330	25	<410	<630	<400
BENZO(G,H,I)PERYLENE	SW8270C	µg/kg	330	37	<410	<630	<400
BENZO(K)FLUORANTHENE	SW8270C	µg/kg	330	27	<410	<630	<400
BENZYL ALCOHOL	SW8270C	µg/kg	28 (b)	28	<35	<53	<34
BIS(2-CHLOROETHOXY)METHANE	SW8270C	µg/kg	330	24	<410	<630	<400
BIS(2-CHLOROETHYL)ETHER	SW8270C	µg/kg	330	39	<410	<630	<400
BIS(2-CHLOROISOPROPYL)ETHER	SW8270C	µg/kg	330	25	<410	<630	<400
BIS(2-ETHYLHEXYL)PHTHALATE	SW8270C	µg/kg	330	27	<410	<630	<400
4-BROMOPHENYL-PHENYLETHER	SW8270C	µg/kg	330	33	<410	<630	<400
BUTYLBENZYLPHTHALATE	SW8270C	µg/kg	330	23	<410	<630	<400
4-CHLORO-3-METHYLPHENOL	SW8270C	µg/kg	330	25	<410	<630	<400
4-CHLOROANILINE	SW8270C	µg/kg	100 (b)	101	<130	<190	<120
2-CHLORONAPHTHALENE	SW8270C	µg/kg	330	32	<410	<630	<400
2-CHLOROPHENOL	SW8270C	µg/kg	330	29	<410	<630	<400
4-CHLOROPHENYL PHENYL ETHER	SW8270C	µg/kg	330	28	<410	<630	<400
CHRYSENE	SW8270C	µg/kg	330	26	<410	<630	<400
DI-N-BUTYL PHTHALATE	SW8270C	µg/kg	330	34	<410	<630	<400
DI-N-OCTYLPHTHALATE	SW8270C	µg/kg	330	25	<410	<630	<400
DIBENZ(A,H)ANTHRACENE	SW8270C	µg/kg	330	31	<410	<630	<400
DIBENZOFURAN	SW8270C	µg/kg	330	25	<410	<630	<400
1,2-DICHLOROBENZENE	SW8270C	µg/kg	330	26	<410	<630	<400
1,3-DICHLOROBENZENE	SW8270C	µg/kg	330	22	<410	<630	<400
1,4-DICHLOROBENZENE	SW8270C	µg/kg	330	18	<410	<630	<400
3,3'-DICHLOROBENZIDINE	SW8270C	µg/kg	130 (b)	130	<160	<250	<160
2,4-DICHLOROPHENOL	SW8270C	µg/kg	330	18	<410	<630	<400
2,6-DICHLOROPHENOL	SW8270C	µg/kg	330	25	<410	<630	<400
DIETHYL PHTHALATE	SW8270C	µg/kg	330	33	<410	<630	<400
DIMETHYLPHTHALATE	SW8270C	µg/kg	330	35	<410	<630	<400
2,4-DIMETHYLPHENOL	SW8270C	µg/kg	330	20	<410	<630	<400
4,6-DINITRO-2-METHYLPHENOL	SW8270C	µg/kg	1700	93	<2000	<3100	<2000
2,4-DINITROPHENOL	SW8270C	µg/kg	1700	131	<2000	<3100	<2000
2,4-DINITROTOLUENE	SW8270C	µg/kg	330	24	<410	<630	<400
2,6-DINITROTOLUENE	SW8270C	µg/kg	330	27	<410	<630	<400
FLUORANTHENE	SW8270C	µg/kg	330	27	<410	<630	<400
FLUORENE	SW8270C	µg/kg	330	28	<410	<630	<400
HEXACHLOROBENZENE	SW8270C	µg/kg	330	33	<410	<630	<400
HEXACHLOROBUTADIENE	SW8270C	µg/kg	330	27	<410	<630	<400

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-205-14 03-06230-7	HAAF-ADA-207-05 03-06230-8	HAAF-ADA-207-14 03-06230-9
HEXACHLOROCYCLOPENTADIENE	SW8270C	µg/kg	140 (b)	140	< 170	< 270	< 170
HEXACHLOROETHANE	SW8270C	µg/kg	330	28	< 410	< 630	< 400
INDENO(1,2,3-C,D)PYRENE	SW8270C	µg/kg	330	31	< 410	< 630	< 400
ISOPHORONE	SW8270C	µg/kg	330	29	< 410	< 630	< 400
2-METHYLNAPHTHALENE	SW8270C	µg/kg	330	25	< 410	< 630	< 400
3/4-METHYLPHENOL	SW8270C	µg/kg	330	36	< 410	< 630	< 400
2-METHYLPHENOL	SW8270C	µg/kg	330	28	< 410	< 630	< 400
NAPHTHALENE	SW8270C	µg/kg	330	22	< 410	< 630	< 400
2-NITROANILINE	SW8270C	µg/kg	3300	111	< 4100	< 6300	< 4000
3-NITROANILINE	SW8270C	µg/kg	1700	109	< 2000	< 3100	< 2000
4-NITROANILINE	SW8270C	µg/kg	1700	122	< 2000	< 3100	< 2000
NITROBENZENE	SW8270C	µg/kg	330	23	< 410	< 630	< 400
2-NITROPHENOL	SW8270C	µg/kg	330	18	< 410	< 630	< 400
4-NITROPHENOL	SW8270C	µg/kg	1700	161	< 2000	< 3100	< 2000
N-NITROSODI-N-PROPYLAMINE	SW8270C	µg/kg	330	32	< 410	< 630	< 400
N-NITROSO-DIPHENYLAMINE	SW8270C	µg/kg	160 (b)	162	< 200	< 310	< 200
PENTACHLOROPHENOL	SW8270C	µg/kg	1700	65	< 2000	< 3100	< 2000
PHENANTHRENE	SW8270C	µg/kg	330	25	< 410	< 630	< 400
PHENOL	SW8270C	µg/kg	330	23	< 410	< 630	< 400
PYRENE	SW8270C	µg/kg	330	25	< 410	< 630	< 400
1,2,4-TRICHLOROBENZENE	SW8270C	µg/kg	330	28	< 410	< 630	< 400
2,4,5-TRICHLOROPHENOL	SW8270C	µg/kg	330	31	< 410	< 630	< 400
2,4,6-TRICHLOROPHENOL	SW8270C	µg/kg	330	34	< 410	< 630	< 400
ORGANOCHLORINE PESTICIDES							
Dilution Factor					1	1	1
ALDRIN	SW8081A	µg/kg	5	0.18	< 6.2	< 9.5	< 6.1
BETA-BHC	SW8081A	µg/kg	5	0.086	< 6.2	< 9.5	< 6.1
ALPHA-BHC	SW8081A	µg/kg	5	0.014	< 6.2	< 9.5	< 6.1
DELTA-BHC	SW8081A	µg/kg	5	0.051	< 6.2	< 9.5	< 6.1
GAMMA-BHC	SW8081A	µg/kg	5	0.036	< 6.2	< 9.5	< 6.1
ALPHA-CHLORDANE	SW8081A	µg/kg	5	0.050	< 6.2	< 9.5	< 6.1
GAMMA-CHLORDANE	SW8081A	µg/kg	5	0.040	< 6.2	< 9.5	< 6.1
4,4'-DDD	SW8081A	µg/kg	5	0.10	< 6.2	< 9.5	< 6.1
4,4'-DDE	SW8081A	µg/kg	5	0.064	< 6.2	< 9.5	< 6.1
4,4'-DDT	SW8081A	µg/kg	5	0.024	< 6.2	< 9.5	< 6.1
DIELDRIN	SW8081A	µg/kg	5	0.034	< 6.2	< 9.5	< 6.1
ENDOSULFAN I	SW8081A	µg/kg	5	0.017	< 6.2	< 9.5	< 6.1
ENDOSULFAN II	SW8081A	µg/kg	5	0.12	< 6.2	< 9.5	< 6.1
ENDOSULFAN SULFATE	SW8081A	µg/kg	5	0.35	< 6.2	< 9.5	< 6.1
ENDRIN	SW8081A	µg/kg	5	0.026	< 6.2	< 9.5	< 6.1
ENDRIN ALDEHYDE	SW8081A	µg/kg	5	0.030	< 6.2	< 9.5	< 6.1
HEPTACHLOR	SW8081A	µg/kg	5	0.063	< 6.2	< 9.5	< 6.1
HEPTACHLOR EPOXIDE	SW8081A	µg/kg	5	0.016	< 6.2	< 9.5	< 6.1
METHOXYCHLOR	SW8081A	µg/kg	17	0.068	< 21	< 32	< 21
TOXAPHENE	SW8081A	µg/kg	100	18	< 120	< 190	< 120

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Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-209-04 03-06230-10	HAAF-ADA-209-14 03-06230-11	HAAF-ADA-210-02 03-06230-12
MOISTURE	ASTM-D2216	%Moisture	0.5	0.10	43.3	41.9	32.9
PH	9045C	pH unit	0.01	0.01	4.12	6.63	5.10
TTLC 17 METALS							
Dilution Factor					1	1	1
ANTIMONY	SW6010B	mg/kg	3	0.11	<5.3	<5.2	<4.5
ARSENIC	SW6010B	mg/kg	5	0.099	7.7J	4.2J	6.1J
BARIUM	SW6010B	mg/kg	100	0.074	46.8J	41.6J	83.0J
BERYLLIUM	SW6010B	mg/kg	0.5	0.004	<0.88	<0.86	0.35J
CADMIUM	SW6010B	mg/kg	0.5	0.011	<0.88	0.057J	<0.74
CHROMIUM	SW6010B	mg/kg	10	0.051	95.3	81.1	110
COBALT	SW6010B	mg/kg	10	0.020	10.5J	17.0J	17.6
COPPER	SW6010B	mg/kg	10	0.088	31.4	31.7	33.1
LEAD	SW6010B	mg/kg	20	0.050	6.9J	8.1J	8.7J
MERCURY	SW7471A	mg/kg	0.1	0.007	0.097J	0.079J	0.22
MOLYBDENUM	SW6010B	mg/kg	2	0.040	<3.5	<3.4	<3.0
NICKEL	SW6010B	mg/kg	10	0.056	54.1	77.2	84.2
SELENIUM	SW6010B	mg/kg	0.5	0.069	0.72J	<0.86	0.95
SILVER	SW6010B	mg/kg	0.5	0.030	<0.88	<0.86	<0.74
THALLIUM	SW6010B	mg/kg	10	0.062	<18	<17	<15
VANADIUM	SW6010B	mg/kg	10	0.028	74.3	67.8	78.4
ZINC	SW6010B	mg/kg	10	0.14	70.6	75.4	111
Dilution Factor					1.28	1	1.15
PHC AS GASOLINE(C6-C10)	SW8015B	mg/kg	5	0.015	0.05J	0.04J	0.03J
Dilution Factor					1	1	1
PHC AS DIESEL FUEL(C10-C28)	SW8015B	mg/kg	100	1.1	3J (a)	2J (a)	9J (a)
VOLATILE ORGANICS							
Dilution Factor					1.24	1.35	1.17
ACETONE	SW8260B	µg/kg	50	6.8	<110	27J	<87
BENZENE	SW8260B	µg/kg	5	0.21	<11	<12	<8.7
BROMODICHLOROMETHANE	SW8260B	µg/kg	5	0.94	<11	<12	<8.7
BROMOFORM	SW8260B	µg/kg	5	0.40	<11	<12	<8.7
BROMOMETHANE	SW8260B	µg/kg	5	0.59	<11	<12	<8.7
2-BUTANONE (MEK)	SW8260B	µg/kg	100	3.6	<220	<230	<170
CARBON DISULFIDE	SW8260B	µg/kg	5	0.21	<11	7J	<8.7
CARBON TETRACHLORIDE	SW8260B	µg/kg	5	0.78	<11	<12	<8.7
CHLOROBENZENE	SW8260B	µg/kg	5	0.28	<11	<12	<8.7
DIBROMOCHLOROMETHANE	SW8260B	µg/kg	5	0.43	<11	<12	<8.7
CHLOROETHANE	SW8260B	µg/kg	5	0.75	<11	<12	<8.7
CHLOROFORM	SW8260B	µg/kg	5	0.46	<11	<12	<8.7
CHLOROMETHANE	SW8260B	µg/kg	5	0.33	<11	<12	<8.7
1,2-DICHLOROBENZENE	SW8260B	µg/kg	5	0.19	<11	<12	<8.7

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Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-209-04 03-06230-10	HAAF-ADA-209-14 03-06230-11	HAAF-ADA-210-02 03-06230-12
1,3-DICHLOROBENZENE	SW8260B	µg/kg	5	0.29	<11	<12	<8.7
1,4-DICHLOROBENZENE	SW8260B	µg/kg	5	0.20	<11	<12	<8.7
DICHLORODIFLUOROMETHANE	SW8260B	µg/kg	5	0.77	<11	<12	<8.7
1,1-DICHLOROETHANE	SW8260B	µg/kg	5	0.30	<11	<12	<8.7
1,2-DICHLOROETHANE	SW8260B	µg/kg	5	0.39	<11	<12	<8.7
1,1-DICHLOROETHENE	SW8260B	µg/kg	5	0.23	<11	<12	<8.7
CIS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	0.51	<11	<12	<8.7
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	0.40	<11	<12	<8.7
1,2-DICHLOROPROPANE	SW8260B	µg/kg	5	0.52	<11	<12	<8.7
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	0.45	<11	<12	<8.7
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	0.28	<11	<12	<8.7
ETHYLBENZENE	SW8260B	µg/kg	5	0.32	<11	<12	<8.7
2-HEXANONE	SW8260B	µg/kg	10	0.25	<22	<23	<17
METHYLENE CHLORIDE	SW8260B	µg/kg	5	0.52	7J	8J	5J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/kg	50	0.50	<110	<120	<87
STYRENE	SW8260B	µg/kg	5	0.25	<11	<12	<8.7
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	0.47	<11	<12	<8.7
TETRACHLOROETHENE	SW8260B	µg/kg	5	0.50	<11	<12	<8.7
TOLUENE	SW8260B	µg/kg	5	0.57	<11	<12	<8.7
1,1,1-TRICHLOROETHANE	SW8260B	µg/kg	5	0.78	<11	<12	<8.7
1,1,2-TRICHLOROETHANE	SW8260B	µg/kg	5	0.60	<11	<12	<8.7
TRICHLOROETHENE	SW8260B	µg/kg	5	0.47	<11	<12	<8.7
TRICHLOROFLUOROMETHANE	SW8260B	µg/kg	5	0.40	<11	<12	<8.7
1,1,2-TRICHLOROTRIFLUOROETHANE	SW8260B	µg/kg	10	0.88	<22	<23	<17
VINYL ACETATE	SW8260B	µg/kg	10	0.98	<22	<23	<17
VINYL CHLORIDE	SW8260B	µg/kg	5	0.52	<11	<12	<8.7
XYLENES, TOTAL	SW8260B	µg/kg	15	0.39	<33	<35	<26
SEMI-VOC COMPOUNDS							
Dilution Factor					1	1	1
ACENAPHTHENE	SW8270C	µg/kg	330	25	<580	<570	<490
ACENAPHTHYLENE	SW8270C	µg/kg	330	22	<580	<570	<490
ANTHRACENE	SW8270C	µg/kg	330	28	<580	<570	<490
BENZO(A)ANTHRACENE	SW8270C	µg/kg	330	21	<580	<570	<490
BENZO(A)PYRENE	SW8270C	µg/kg	330	24	<580	<570	<490
BENZO(B)FLUORANTHENE	SW8270C	µg/kg	330	25	<580	<570	<490
BENZO(G,H,I)PERYLENE	SW8270C	µg/kg	330	37	<580	<570	<490
BENZO(K)FLUORANTHENE	SW8270C	µg/kg	330	27	<580	<570	<490
BENZYL ALCOHOL	SW8270C	µg/kg	28 (b)	28	<49	<48	<42
BIS(2-CHLOROETHOXY)METHANE	SW8270C	µg/kg	330	24	<580	<570	<490
BIS(2-CHLOROETHYL)ETHER	SW8270C	µg/kg	330	39	<580	<570	<490
BIS(2-CHLOROISOPROPYL)ETHER	SW8270C	µg/kg	330	25	<580	<570	<490
BIS(2-ETHYLHEXYL)PHTHALATE	SW8270C	µg/kg	330	27	<580	<570	<490
4-BROMOPHENYL-PHENYLETHER	SW8270C	µg/kg	330	33	<580	<570	<490
BUTYLBENZYLPHTHALATE	SW8270C	µg/kg	330	23	<580	<570	<490
4-CHLORO-3-METHYLPHENOL	SW8270C	µg/kg	330	25	<580	<570	<490
4-CHLOROANILINE	SW8270C	µg/kg	100 (b)	101	<180	<170	<150
2-CHLORONAPHTHALENE	SW8270C	µg/kg	330	32	<580	<570	<490

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Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-209-04 03-06230-10	HAAF-ADA-209-14 03-06230-11	HAAF-ADA-210-02 03-06230-12
2-CHLOROPHENOL	SW8270C	µg/kg	330	29	< 580	< 570	< 490
4-CHLOROPHENYL PHENYL ETHER	SW8270C	µg/kg	330	28	< 580	< 570	< 490
CHRYSENE	SW8270C	µg/kg	330	26	< 580	< 570	< 490
DI-N-BUTYL PHTHALATE	SW8270C	µg/kg	330	34	< 580	< 570	< 490
DI-N-OCTYLPHTHALATE	SW8270C	µg/kg	330	25	< 580	< 570	< 490
DIBENZ(A,H)ANTHRACENE	SW8270C	µg/kg	330	31	< 580	< 570	< 490
DIBENZOFURAN	SW8270C	µg/kg	330	25	< 580	< 570	< 490
1,2-DICHLOROBENZENE	SW8270C	µg/kg	330	26	< 580	< 570	< 490
1,3-DICHLOROBENZENE	SW8270C	µg/kg	330	22	< 580	< 570	< 490
1,4-DICHLOROBENZENE	SW8270C	µg/kg	330	18	< 580	< 570	< 490
3,3'-DICHLOROBENZIDINE	SW8270C	µg/kg	130 (b)	130	< 230	< 220	< 190
2,4-DICHLOROPHENOL	SW8270C	µg/kg	330	18	< 580	< 570	< 490
2,6-DICHLOROPHENOL	SW8270C	µg/kg	330	25	< 580	< 570	< 490
DIETHYL PHTHALATE	SW8270C	µg/kg	330	33	< 580	< 570	< 490
DIMETHYLPHTHALATE	SW8270C	µg/kg	330	35	< 580	< 570	< 490
2,4-DIMETHYLPHENOL	SW8270C	µg/kg	330	20	< 580	< 570	< 490
4,6-DINITRO-2-METHYLPHENOL	SW8270C	µg/kg	1700	93	< 2900	< 2800	< 2500
2,4-DINITROPHENOL	SW8270C	µg/kg	1700	131	< 2900	< 2800	< 2500
2,4-DINITROTOLUENE	SW8270C	µg/kg	330	24	< 580	< 570	< 490
2,6-DINITROTOLUENE	SW8270C	µg/kg	330	27	< 580	< 570	< 490
FLUORANTHENE	SW8270C	µg/kg	330	27	< 580	< 570	< 490
FLUORENE	SW8270C	µg/kg	330	28	< 580	< 570	< 490
HEXACHLOROBENZENE	SW8270C	µg/kg	330	33	< 580	< 570	< 490
HEXACHLOROBUTADIENE	SW8270C	µg/kg	330	27	< 580	< 570	< 490
HEXACHLOROCYCLOPENTADIENE	SW8270C	µg/kg	140 (b)	140	< 250	< 240	< 210
HEXACHLOROETHANE	SW8270C	µg/kg	330	28	< 580	< 570	< 490
INDENO(1,2,3-C,D)PYRENE	SW8270C	µg/kg	330	31	< 580	< 570	< 490
ISOPHORONE	SW8270C	µg/kg	330	29	< 580	< 570	< 490
2-METHYLNAPHTHALENE	SW8270C	µg/kg	330	25	< 580	< 570	< 490
3/4-METHYLPHENOL	SW8270C	µg/kg	330	36	< 580	< 570	< 490
2-METHYLPHENOL	SW8270C	µg/kg	330	28	< 580	< 570	< 490
NAPHTHALENE	SW8270C	µg/kg	330	22	< 580	< 570	< 490
2-NITROANILINE	SW8270C	µg/kg	3300	111	< 5800	< 5700	< 4900
3-NITROANILINE	SW8270C	µg/kg	1700	109	< 2900	< 2800	< 2500
4-NITROANILINE	SW8270C	µg/kg	1700	122	< 2900	< 2800	< 2500
NITROBENZENE	SW8270C	µg/kg	330	23	< 580	< 570	< 490
2-NITROPHENOL	SW8270C	µg/kg	330	18	< 580	< 570	< 490
4-NITROPHENOL	SW8270C	µg/kg	1700	161	< 2900	< 2800	< 2500
N-NITROSODI-N-PROPYLAMINE	SW8270C	µg/kg	330	32	< 580	< 570	< 490
N-NITROSO-DIPHENYLAMINE	SW8270C	µg/kg	160 (b)	162	< 290	< 280	< 240
PENTACHLOROPHENOL	SW8270C	µg/kg	1700	65	< 2900	< 2800	< 2500
PHENANTHRENE	SW8270C	µg/kg	330	25	< 580	< 570	< 490
PHENOL	SW8270C	µg/kg	330	23	< 580	< 570	< 490
PYRENE	SW8270C	µg/kg	330	25	< 580	< 570	< 490
1,2,4-TRICHLOROBENZENE	SW8270C	µg/kg	330	28	< 580	< 570	< 490
2,4,5-TRICHLOROPHENOL	SW8270C	µg/kg	330	31	< 580	< 570	< 490
2,4,6-TRICHLOROPHENOL	SW8270C	µg/kg	330	34	< 580	< 570	< 490

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-209-04 03-06230-10	HAAF-ADA-209-14 03-06230-11	HAAF-ADA-210-02 03-06230-12
ORGANOCHLORINE PESTICIDES							
Dilution Factor					1	1	1
ALDRIN	SW8081A	µg/kg	5	0.18	<8.8	<8.6	-
BETA-BHC	SW8081A	µg/kg	5	0.086	<8.8	<8.6	-
ALPHA-BHC	SW8081A	µg/kg	5	0.014	<8.8	<8.6	-
DELTA-BHC	SW8081A	µg/kg	5	0.051	<8.8	<8.6	-
GAMMA-BHC	SW8081A	µg/kg	5	0.036	<8.8	<8.6	-
ALPHA-CHLORDANE	SW8081A	µg/kg	5	0.050	<8.8	<8.6	-
GAMMA-CHLORDANE	SW8081A	µg/kg	5	0.040	<8.8	<8.6	-
4,4'-DDD	SW8081A	µg/kg	5	0.10	<8.8	0.6J	-
4,4'-DDE	SW8081A	µg/kg	5	0.064	<8.8	0.4J	-
4,4'-DDT	SW8081A	µg/kg	5	0.024	<8.8	0.2J	-
DIELDRIN	SW8081A	µg/kg	5	0.034	<8.8	<8.6	-
ENDOSULFAN I	SW8081A	µg/kg	5	0.017	<8.8	<8.6	-
ENDOSULFAN II	SW8081A	µg/kg	5	0.12	<8.8	<8.6	-
ENDOSULFAN SULFATE	SW8081A	µg/kg	5	0.35	<8.8	<8.6	-
ENDRIN	SW8081A	µg/kg	5	0.026	<8.8	<8.6	-
ENDRIN ALDEHYDE	SW8081A	µg/kg	5	0.030	<8.8	<8.6	-
HEPTACHLOR	SW8081A	µg/kg	5	0.063	<8.8	<8.6	-
HEPTACHLOR EPOXIDE	SW8081A	µg/kg	5	0.016	<8.8	<8.6	-
METHOXYCHLOR	SW8081A	µg/kg	17	0.068	<30	<29	-
TOXAPHENE	SW8081A	µg/kg	100	18	<180	<170	-

Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-210-14 03-06230-13	HAAF-ADA-211-06 03-06230-14	HAAF-ADA-211-14 03-06230-15
MOISTURE	ASTM-D2216	%Moisture	0.5	0.10	22.1	44.8	10.1
PH	9045C	pH unit	0.01	0.01	6.32	4.55	6.28
TTLC 17 METALS							
Dilution Factor					1	1	1
ANTIMONY	SW6010B	mg/kg	3	0.11	<3.9	<5.4	<3.3
ARSENIC	SW6010B	mg/kg	5	0.099	1.9J	4.5J	2.7J
BARIUM	SW6010B	mg/kg	100	0.074	23.9J	43.6J	83.7J
BERYLLIUM	SW6010B	mg/kg	0.5	0.004	<0.64	<0.91	0.92
CADMIUM	SW6010B	mg/kg	0.5	0.011	<0.64	<0.91	<0.56
CHROMIUM	SW6010B	mg/kg	10	0.051	27.3	89.0	9.1J
COBALT	SW6010B	mg/kg	10	0.020	4.5J	12.3J	5.9J
COPPER	SW6010B	mg/kg	10	0.088	9.3J	27.5	4.8J
LEAD	SW6010B	mg/kg	20	0.050	6.4J	4.8J	10J
MERCURY	SW7471A	mg/kg	0.1	0.007	0.41	0.098J	0.64
MOLYBDENUM	SW6010B	mg/kg	2	0.040	<2.6	<3.6	<2.2
NICKEL	SW6010B	mg/kg	10	0.056	19.0	64.6	12.2
SELENIUM	SW6010B	mg/kg	0.5	0.069	1.1	0.58J	0.84
SILVER	SW6010B	mg/kg	0.5	0.030	<0.64	<0.91	<0.56
THALLIUM	SW6010B	mg/kg	10	0.062	<13	<18	<11
VANADIUM	SW6010B	mg/kg	10	0.028	39.5	69.8	30.6
ZINC	SW6010B	mg/kg	10	0.14	16.5	76.0	25.0
Dilution Factor					1.34	1.17	0.9
PHC AS GASOLINE(C6-C10)	SW8015B	mg/kg	5	0.015	0.04J	0.05J	0.03J
Dilution Factor					1	1	1
PHC AS DIESEL FUEL(C10-C28)	SW8015B	mg/kg	100	1.1	<130	4J [a]	<110

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-210-14 03-06230-13	HAAF-ADA-211-06 03-06230-14	HAAF-ADA-211-14 03-06230-15
VOLATILE ORGANICS							
Dilution Factor					0.94	1.38	0.86
ACETONE	SW8260B	µg/kg	50	6.8	19J	97J	<48
BENZENE	SW8260B	µg/kg	5	0.21	<6.0	<13	<4.8
BROMODICHLOROMETHANE	SW8260B	µg/kg	5	0.94	<6.0	<13	<4.8
BROMOFORM	SW8260B	µg/kg	5	0.40	<6.0	<13	<4.8
BROMOMETHANE	SW8260B	µg/kg	5	0.59	<6.0	<13	<4.8
2-BUTANONE (MEK)	SW8260B	µg/kg	100	3.6	<120	<250	<96
CARBON DISULFIDE	SW8260B	µg/kg	5	0.21	<6.0	20	<4.8
CARBON TETRACHLORIDE	SW8260B	µg/kg	5	0.78	<6.0	<13	<4.8
CHLOROBENZENE	SW8260B	µg/kg	5	0.28	<6.0	<13	<4.8
DIBROMOCHLOROMETHANE	SW8260B	µg/kg	5	0.43	<6.0	<13	<4.8
CHLOROETHANE	SW8260B	µg/kg	5	0.75	<6.0	<13	<4.8
CHLOROFORM	SW8260B	µg/kg	5	0.46	<6.0	<13	<4.8
CHLOROMETHANE	SW8260B	µg/kg	5	0.33	<6.0	<13	<4.8
1,2-DICHLOROBENZENE	SW8260B	µg/kg	5	0.19	<6.0	<13	<4.8
1,3-DICHLOROBENZENE	SW8260B	µg/kg	5	0.29	<6.0	<13	<4.8
1,4-DICHLOROBENZENE	SW8260B	µg/kg	5	0.20	<6.0	<13	<4.8
DICHLORODIFLUOROMETHANE	SW8260B	µg/kg	5	0.77	<6.0	<13	<4.8
1,1-DICHLOROETHANE	SW8260B	µg/kg	5	0.30	<6.0	<13	<4.8
1,2-DICHLOROETHANE	SW8260B	µg/kg	5	0.39	<6.0	<13	<4.8
1,1-DICHLOROETHENE	SW8260B	µg/kg	5	0.23	<6.0	<13	<4.8
CIS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	0.51	<6.0	<13	<4.8
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	0.40	<6.0	<13	<4.8
1,2-DICHLOROPROPANE	SW8260B	µg/kg	5	0.52	<6.0	<13	<4.8
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	0.45	<6.0	<13	<4.8
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	0.28	<6.0	<13	<4.8
ETHYLBENZENE	SW8260B	µg/kg	5	0.32	<6.0	<13	<4.8
2-HEXANONE	SW8260B	µg/kg	10	0.25	<12	<25	<9.6
METHYLENE CHLORIDE	SW8260B	µg/kg	5	0.52	4J	7J	3J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/kg	50	0.50	<60	<130	<48
STYRENE	SW8260B	µg/kg	5	0.25	<6.0	<13	<4.8
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	0.47	<6.0	<13	<4.8
TETRACHLOROETHENE	SW8260B	µg/kg	5	0.50	<6.0	<13	<4.8
TOLUENE	SW8260B	µg/kg	5	0.57	<6.0	<13	<4.8
1,1,1-TRICHLOROETHANE	SW8260B	µg/kg	5	0.78	<6.0	<13	<4.8
1,1,2-TRICHLOROETHANE	SW8260B	µg/kg	5	0.60	<6.0	<13	<4.8
TRICHLOROETHENE	SW8260B	µg/kg	5	0.47	<6.0	<13	<4.8
TRICHLOROFLUOROMETHANE	SW8260B	µg/kg	5	0.40	<6.0	<13	<4.8
1,1,2-TRICHLOROTRIFLUOROETHANE	SW8260B	µg/kg	10	0.88	<12	<25	<9.6
VINYL ACETATE	SW8260B	µg/kg	10	0.98	<12	<25	<9.6
VINYL CHLORIDE	SW8260B	µg/kg	5	0.52	<6.0	<13	<4.8
XYLENES, TOTAL	SW8260B	µg/kg	15	0.39	<18	<38	<14

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-210-14 03-06230-13	HAAF-ADA-211-06 03-06230-14	HAAF-ADA-211-14 03-06230-15
SEMI-VOC COMPOUNDS							
Dilution Factor					1	1	1
ACENAPHTHENE	SW8270C	µg/kg	330	25	<420	<600	<370
ACENAPHTHYLENE	SW8270C	µg/kg	330	22	<420	<600	<370
ANTHRACENE	SW8270C	µg/kg	330	28	<420	<600	<370
BENZO(A)ANTHRACENE	SW8270C	µg/kg	330	21	<420	<600	<370
BENZO(A)PYRENE	SW8270C	µg/kg	330	24	<420	<600	<370
BENZO(B)FLUORANTHENE	SW8270C	µg/kg	330	25	<420	<600	<370
BENZO(G,H,I)PERYLENE	SW8270C	µg/kg	330	37	<420	<600	<370
BENZO(K)FLUORANTHENE	SW8270C	µg/kg	330	27	<420	<600	<370
BENZYL ALCOHOL	SW8270C	µg/kg	28 (b)	28	<36	<51	<31
BIS(2-CHLOROETHOXY)METHANE	SW8270C	µg/kg	330	24	<420	<600	<370
BIS(2-CHLOROETHYL)ETHER	SW8270C	µg/kg	330	39	<420	<600	<370
BIS(2-CHLOROISOPROPYL)ETHER	SW8270C	µg/kg	330	25	<420	<600	<370
BIS(2-ETHYLHEXYL)PHTHALATE	SW8270C	µg/kg	330	27	<420	<600	<370
4-BROMOPHENYL-PHENYLETHER	SW8270C	µg/kg	330	33	<420	<600	<370
BUTYLBENZYLPHTHALATE	SW8270C	µg/kg	330	23	<420	<600	<370
4-CHLORO-3-METHYLPHENOL	SW8270C	µg/kg	330	25	<420	<600	<370
4-CHLOROANILINE	SW8270C	µg/kg	100 (b)	101	<130	<180	<110
2-CHLORONAPHTHALENE	SW8270C	µg/kg	330	32	<420	<600	<370
2-CHLOROPHENOL	SW8270C	µg/kg	330	29	<420	<600	<370
4-CHLOROPHENYL PHENYL ETHER	SW8270C	µg/kg	330	28	<420	<600	<370
CHRYSENE	SW8270C	µg/kg	330	26	<420	<600	<370
DI-N-BUTYL PHTHALATE	SW8270C	µg/kg	330	34	<420	<600	<370
DI-N-OCTYLPHTHALATE	SW8270C	µg/kg	330	25	<420	<600	<370
DIBENZ(A,H)ANTHRACENE	SW8270C	µg/kg	330	31	<420	<600	<370
DIBENZOFURAN	SW8270C	µg/kg	330	25	<420	<600	<370
1,2-DICHLOROBENZENE	SW8270C	µg/kg	330	26	<420	<600	<370
1,3-DICHLOROBENZENE	SW8270C	µg/kg	330	22	<420	<600	<370
1,4-DICHLOROBENZENE	SW8270C	µg/kg	330	18	<420	<600	<370
3,3'-DICHLOROBENZIDINE	SW8270C	µg/kg	130 (b)	130	<170	<240	<140
2,4-DICHLOROPHENOL	SW8270C	µg/kg	330	18	<420	<600	<370
2,6-DICHLOROPHENOL	SW8270C	µg/kg	330	25	<420	<600	<370
DIETHYL PHTHALATE	SW8270C	µg/kg	330	33	<420	<600	<370
DIMETHYLPHTHALATE	SW8270C	µg/kg	330	35	<420	<600	<370
2,4-DIMETHYLPHENOL	SW8270C	µg/kg	330	20	<420	<600	<370
4,6-DINITRO-2-METHYLPHENOL	SW8270C	µg/kg	1700	93	<2100	<3000	<1800
2,4-DINITROPHENOL	SW8270C	µg/kg	1700	131	<2100	<3000	<1800
2,4-DINITROTOLUENE	SW8270C	µg/kg	330	24	<420	<600	<370
2,6-DINITROTOLUENE	SW8270C	µg/kg	330	27	<420	<600	<370
FLUORANTHENE	SW8270C	µg/kg	330	27	<420	<600	<370
FLUORENE	SW8270C	µg/kg	330	28	<420	<600	<370
HEXACHLOROBENZENE	SW8270C	µg/kg	330	33	<420	<600	<370
HEXACHLOROBUTADIENE	SW8270C	µg/kg	330	27	<420	<600	<370
HEXACHLOROCYCLOPENTADIENE	SW8270C	µg/kg	140 (b)	140	<180	<250	<160
HEXACHLOROETHANE	SW8270C	µg/kg	330	28	<420	<600	<370
INDENO(1,2,3-C,D)PYRENE	SW8270C	µg/kg	330	31	<420	<600	<370
ISOPHORONE	SW8270C	µg/kg	330	29	<420	<600	<370
2-METHYLNAPHTHALENE	SW8270C	µg/kg	330	25	<420	<600	<370
3/4-METHYLPHENOL	SW8270C	µg/kg	330	36	<420	<600	<370
2-METHYLPHENOL	SW8270C	µg/kg	330	28	<420	<600	<370
NAPHTHALENE	SW8270C	µg/kg	330	22	<420	<600	<370

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-210-14 03-06230-13	HAAF-ADA-211-06 03-06230-14	HAAF-ADA-211-14 03-06230-15
2-NITROANILINE	SW8270C	µg/kg	3300	111	<4200	<6000	<3700
3-NITROANILINE	SW8270C	µg/kg	1700	109	<2100	<3000	<1800
4-NITROANILINE	SW8270C	µg/kg	1700	122	<2100	<3000	<1800
NITROBENZENE	SW8270C	µg/kg	330	23	<420	<600	<370
2-NITROPHENOL	SW8270C	µg/kg	330	18	<420	<600	<370
4-NITROPHENOL	SW8270C	µg/kg	1700	161	<2100	<3000	<1800
N-NITROSODI-N-PROPYLAMINE	SW8270C	µg/kg	330	32	<420	<600	<370
N-NITROSO-DIPHENYLAMINE	SW8270C	µg/kg	160 (b)	162	<210	<290	<180
PENTACHLOROPHENOL	SW8270C	µg/kg	1700	65	<2100	<3000	<1800
PHENANTHRENE	SW8270C	µg/kg	330	25	<420	<600	<370
PHENOL	SW8270C	µg/kg	330	23	<420	<600	<370
PYRENE	SW8270C	µg/kg	330	25	<420	<600	<370
1,2,4-TRICHLOROBENZENE	SW8270C	µg/kg	330	28	<420	<600	<370
2,4,5-TRICHLOROPHENOL	SW8270C	µg/kg	330	31	<420	<600	<370
2,4,6-TRICHLOROPHENOL	SW8270C	µg/kg	330	34	<420	<600	<370
ORGANOCHLORINE PESTICIDES							
Dilution Factor					1	1	1
ALDRIN	SW8081A	µg/kg	5	0.18	<6.4	<9.1	<5.6
BETA-BHC	SW8081A	µg/kg	5	0.086	<6.4	<9.1	<5.6
ALPHA-BHC	SW8081A	µg/kg	5	0.014	<6.4	<9.1	<5.6
DELTA-BHC	SW8081A	µg/kg	5	0.051	<6.4	<9.1	<5.6
GAMMA-BHC	SW8081A	µg/kg	5	0.036	<6.4	<9.1	<5.6
ALPHA-CHLORDANE	SW8081A	µg/kg	5	0.050	<6.4	<9.1	<5.6
GAMMA-CHLORDANE	SW8081A	µg/kg	5	0.040	<6.4	<9.1	<5.6
4,4'-DDD	SW8081A	µg/kg	5	0.10	<6.4	<9.1	<5.6
4,4'-DDE	SW8081A	µg/kg	5	0.064	<6.4	<9.1	<5.6
4,4'-DDT	SW8081A	µg/kg	5	0.024	<6.4	<9.1	<5.6
DIELDRIN	SW8081A	µg/kg	5	0.034	<6.4	<9.1	<5.6
ENDOSULFAN I	SW8081A	µg/kg	5	0.017	<6.4	<9.1	<5.6
ENDOSULFAN II	SW8081A	µg/kg	5	0.12	<6.4	<9.1	<5.6
ENDOSULFAN SULFATE	SW8081A	µg/kg	5	0.35	<6.4	<9.1	<5.6
ENDRIN	SW8081A	µg/kg	5	0.026	<6.4	<9.1	<5.6
ENDRIN ALDEHYDE	SW8081A	µg/kg	5	0.030	<6.4	<9.1	<5.6
HEPTACHLOR	SW8081A	µg/kg	5	0.063	<6.4	<9.1	<5.6
HEPTACHLOR EPOXIDE	SW8081A	µg/kg	5	0.016	<6.4	<9.1	<5.6
METHOXYCHLOR	SW8081A	µg/kg	17	0.068	<22	<31	<19
TOXAPHENE	SW8081A	µg/kg	100	18	<130	<180	<110

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
† All results are reported on dry basis for soil samples.
Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0
(a) Unknown mixture in Diesel range.
(b) MDL reported.
(c) Analyzed with a dilution factor of 10.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

005200

CHAIN OF CUSTODY RECORD

Page 1 of 2

US ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
Environmental Engineering Branch
SPK-ED-E
1325 J Street
Sacramento, California
95814-2922

Project Name: Northwest Alleged Disposal Area
Project Location: Hamilton AAF
Project Coordinator: Carleton Fong
Phone: (916) 557-7513 FAX: (916)-557-5307
Sampler: Van Etten, Tim Crannell Phone:

Laboratory: APCL
Address: 13760 Magnolia
Chino, CA 91710
Contact: Eric Wendland
Phone: (909) 590-1828

ANALYSIS REQUESTED →

SAMPLE IDENTIFICATION Field	Laboratory	GRAB	COMP	DATE 19	TIME	EPA 8015 8-D	EPA 8015B-E	EPA 8260B	EPA 8270C	EPA 9310	EPA 8081	EPA 8010	EPA 7471	MS/MSD	TURN AROUND TIME (DAYS)	MATRIX CODE	NUMBER OF PLASTIC	GLASS	VOA	SLEEVE	ENCORE	PRESERVATIVE CODE
HAAF-ADA-211-06	APCL	X		11/19/03	0900		X		X	X	X	X	Y			S		W				
HAAF-ADA-211-14					0910		X		X	X	X	X	X					W				
HAAF-ADA-202-02					0925		X		X	X	NO	X	X					W				
HAAF-ADA-202-14					0945		X		X	X	X	X	X					W				
HAAF-ADA-210-02					1015		X		X	X		X	X					W				
~~HAAF-ADA-210-14~~					~~1015~~		~~X~~		~~X~~	~~X~~	~~X~~	~~X~~	~~X~~			RE		~~W~~				
HAAF-ADA-201-06					1100		X		X	X	X	X	X			S		W				
HAAF-ADA-201-14					1130		X		X	X	X	X	X					W				
HAAF-ADA-209-04					1200		X		X	X	X	X	X					W				
HAAF-ADA-209-14					1210		X		X	X	X	X	X					W				

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COMMENTS/SPECIAL INSTRUCTIONS:
TEMP. BLANK INCLUDED

CHECKED BY:

PRESERVATIVE CODES:
C = HCl N = HNO_3 S = H_2SO_4

SAMPLE DISPOSAL:
☑ Hold ☐ Dispose ☐ Return

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
	11/19/03 1400	TC FED EX	
			11/20/03 1000

MATRIX CODES:
W = Water Sl = Sludge SP = Solid Product
S = Soil A = Air LP = Liquid Product
Sd = Sediment

SHIPPING:
☑ Fed Ex ☐ Courier ☐ Hand Deliver
Airbill Number: 8386 0625 3650

CESPK FORM 111
13 Feb 02

DISTRIBUTION: WHITE and YELLOW - send to testing laboratory; PINK - retained by originator

005191

CHAIN OF CUSTODY RECORD

Page 1 of 1

US ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
Environmental Engineering Branch
SPK-ED-E
1325 J Street
Sacramento, California
95814-2922

Project Name: Northwest Alleged Disposal Area
Project Location: Hamilton AAF
Project Coordinator: Carleton Fong
Phone: (916) 557-7513 FAX: (916) 557-5307
Sampler: Van Etten, Tim Crummett Phone:

Laboratory: APCL
Address: 13760 Magnolia
Chino, CA 91710
Contact: Eric Wendland
Phone: (909) 590-1828

ANALYSIS REQUESTED →

SAMPLE IDENTIFICATION Field	Laboratory	GRAB	COMP	DATE	TIME	EPA 8015B-P	EPA 8015B-E	EPA 8260B	EPA 8270C	EPA 9310	EPA 8081	EPA 6010	EPA 7471	MS/MSD	TURN AROUND TIME (DAYS)	MATRIX CODE	NUMBER OF PLASTIC	GLASS	VOA	SLEEVE	ENCORE	PRESERVATIVE CODE
HAAF-ADA-207-05	APCL	X		11/19/03	1235		X		X	X	X	X	X					3				
HAAF-ADA-207-14		X		11/19/03	1245		X		X	X	X	X	X					3				
HAAF-ADA-205-06		X		11/19/03	0830		X		X	X	X	X	X					3				
HAAF-ADA-205-14		X		11/19/03	0840		X		X	X	X	X	X					3				
HAAF-ADA-210-14		X		11/19/03	1045		X		X	X	X	X	X	X				9				
HAAF-ADA-211-14		X		11/19/03	1215		X		X	X	X	X	X					3				

6230

COMMENTS/SPECIAL INSTRUCTIONS:
TEMP. BLANK INCLUDED

CHECKED BY: TC

PRESERVATIVE CODES:
C = HCl N = HNO_3 S = H_2SO_4

SAMPLE DISPOSAL:
☐ Hold ☐ Dispose ☐ Return

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
Tim Crummett	11/19/03 1600	FED EX	
			11/20/03 1000

MATRIX CODES:
W = Water Sl = Sludge SP = Solid Product
S = Soil A = Air LP = Liquid Product
Sd = Sediment

SHIPPING:
X Fed Ex ☐ Courier ☐ Hand Deliver
Airbill Number: 8386 0625 3650

CESPK FORM 111
13 Feb 02

DISTRIBUTION: WHITE and YELLOW - send to testing laboratory; PINK - retained by originator

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CHAIN OF CUSTODY RECORD

US ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
Environmental Engineering Branch
SPK-ED-E
1325 J Street
Sacramento, California
95814-2922

Project Name: Northwest Alleged Disposal Area
Project Location: Hamilton AAF
Project Coordinator: Carleton Fong
Phone: (916) 557-7573 FAX: (916) 557-5307
Sampler: B. VanEtten, Tim Crammer Phone:

Laboratory: APCL
Address: 13760 Magnolia
Chino, CA 91710
Contact: Eric Woodland
Phone: (909) 590-1828

ANALYSIS REQUESTED →

SAMPLE IDENTIFICATION Field	Laboratory	GRAB	COMP	DATE	TIME	EPA 8015B-P	EPA 8260B
~~HAAF-ADA-210-14~~	APCL			11/19/03	1045		
HAAF-ADA-21-14	APCL	X		11/19/03	1215	X	X
HAAF-ADA-205-06		X		1	0830	X	X
HAAF-ADA-207-05		X			1235	X	X
HAAF-ADA-210-14		X			1015	X	X
HAAF-ADA-207-14		X			1235	X	X
HAAF-ADA-205-14		X			0840	X	X
					KE		

MS/MSD	TURN AROUND TIME (DAYS)	MATRIX CODE	NUMBER OF PLASTIC	GLASS	VOA	SLEEVE	ENCORE	PRESERVATIVE CODE
X				9				TC
							6	
							6	
							6	
X							18	
							6	
							6	

6230

COMMENTS/SPECIAL INSTRUCTIONS:

CHECKED BY: TC

PRESERVATIVE CODES:
C = HCl N = HNO_3 S = H_2SO_4

SAMPLE DISPOSAL:
☐ Hold ☐ Dispose ☐ Return

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
Eric Enrick	11/19/03 1400	FED EX	
			11/20/03 1000

MATRIX CODES:
W = Water Sl = Sludge SP = Solid Product
S = Soil A = Air LP = Liquid Product
Sd = Sediment

SHIPPING:
☒ Fed Ex ☐ Courier ☐ Hand Deliver
Airbill Number: 838606253650

CESPK FORM 111
13 Feb 02

DISTRIBUTION: WHITE and YELLOW - send to testing laboratory; PINK - retained by originator

005193

CHAIN OF CUSTODY RECORD

US ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
Environmental Engineering Branch
SPK-ED-E
1325 J Street
Sacramento, California
95814-2922

Project Name: Northwest Alleged Disposal Area
Project Location: Hamilton AAF
Project Coordinator: Carleton Tong
Phone: (916) 557-7513 FAX: (916) 557-5307
Sampler: B. Van Etten, Tim Crammer Phone:

Laboratory: APCL
Address: 13760 Magnolia
Chino, CA 91710
Contact: Eric Wendland
Phone: (909) 590-1828

ANALYSIS REQUESTED →

SAMPLE IDENTIFICATION Field	Laboratory	GRAB	COMP	DATE	TIME	EPA 8015B-P	EPA 8260B	MS/MSD	TURN AROUND TIME (DAYS)	MATRIX CODE	NUMBER OF PLASTIC	GLASS	VOA	SLEEVE	ENCORE	PRESERVATIVE CODE
HAAF-ADA-211-06	APCL			11/19/03	0900	X	X								6	
HAAF-ADA-211-14					1910	X	X								6	
HAAF-ADA-202-02					0925	X	X								6	
HAAF-ADA-202-14					0945	X	X								6	
HAAF-ADA-210-02					1015	X	X								6	
~~HAAF-ADA-210-14 BE~~																
HAAF-ADA-201-06					1100	X	X								6	
HAAF-ADA-201-14					1130	X	X								6	
HAAF-ADA-209-04					1200	X	X								6	
HAAF-ADA-209-14					1210	X	X								6	

6230

COMMENTS/SPECIAL INSTRUCTIONS:

CHECKED BY: TC

PRESERVATIVE CODES:
C = HCl N = HNO_3 S = H_2SO_4

SAMPLE DISPOSAL:
☐ Hold ☐ Dispose ☐ Return

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
	11/19/03 1400	Fed Ex	
			11/20/03 1000

MATRIX CODES:
W = Water SI = Sludge SP = Solid Product
S = Soil A = Air LP = Liquid Product
Sd = Sediment

SHIPPING:
☒ Fed Ex ☐ Courier ☐ Hand Deliver
Airbill Number: 8386 0625 3650

CESPK FORM 111
13 Feb 02

DISTRIBUTION: WHITE and YELLOW - send to testing laboratory; PINK - retained by originator

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
U.S. Army Corps of Engineers
Attention: Carleton Fong.
1325 J Street
Sacramento CA 95814-2922
Tel: (916)557-7646 Fax: (916)557-5307

Service ID #: 801-036205
Collected by: BV/TC
Collected on: 11/18/03

Received: 11/19/03
Extracted: 11/21/03
Tested: 11/20-24/03
Reported: 12/10/03

Sample Description: Soil from Hamilton AAF
Project Description: Northwest Alleged Disposal Area

Analysis of Soil Samples

Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-203-00 03-06205-1	HAAF-ADA-203-06 03-06205-2	HAAF-ADA-204-06 03-06205-3
MOISTURE	ASTM-D2216	%Moisture	0.5	0.10	26.2	47.7	46.5
PH	9045C	pH unit	0.01	0.01	7.13	7.54	7.32
TTLC 17 METALS							
Dilution Factor					1	1	1
ANTIMONY	SW6010B	mg/kg	3	0.12	<4.1	<5.7	<5.6
ARSENIC	SW6010B	mg/kg	5	0.078	5.7J	8.8J	9.0J
BARIUM	SW6010B	mg/kg	100	0.050	207	49.5J	43.7J
BERYLLIUM	SW6010B	mg/kg	0.5	0.002	0.47J	<0.96	<0.93
CADMIUM	SW6010B	mg/kg	0.5	0.022	<0.68	<0.96	<0.93
CHROMIUM	SW6010B	mg/kg	10	0.043	43.7	94.3	97.6
COBALT	SW6010B	mg/kg	10	0.031	9.6J	17.6J	18.3J
COPPER	SW6010B	mg/kg	10	0.060	20.3	35.4	38.4
LEAD	SW6010B	mg/kg	20	0.062	18.2J	9.5J	9.2J
MERCURY	SW7471A	mg/kg	0.1	0.007	0.19	0.085J	0.088J
MOLYBDENUM	SW6010B	mg/kg	2	0.063	1.1J	<3.8	<3.7
NICKEL	SW6010B	mg/kg	10	0.042	44.2	90.6	95.4
SELENIUM	SW6010B	mg/kg	0.5	0.11	<0.68	<0.96	<0.93
SILVER	SW6010B	mg/kg	0.5	0.029	<0.68	<0.96	<0.93
THALLIUM	SW6010B	mg/kg	10	0.070	<14	<19	<19
VANADIUM	SW6010B	mg/kg	10	0.024	46.1	74.4	75.3
ZINC	SW6010B	mg/kg	10	0.19	57.7	91.1	95.5
Dilution Factor					0.96	1.36	1.83
PHC AS GASOLINE(C6-C10)	SW8015B	mg/kg	5	0.015	0.1J	0.2J	0.2J
Dilution Factor					1	1	1
PHC AS DIESEL FUEL(C10-C28)	SW8015B	mg/kg	100	1.1	13J (a)	6J (a)	5J (a)

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-203-00 03-06205-1	HAAF-ADA-203-06 03-06205-2	HAAF-ADA-204-06 03-06205-3
VOLATILE ORGANICS							
Dilution Factor					1.19	1.2	1.14
ACETONE	SW8260B	µg/kg	50	6.8	<81	87J	86J
BENZENE	SW8260B	µg/kg	5	0.21	<8.1	<11	<11
BROMODICHLOROMETHANE	SW8260B	µg/kg	5	0.94	<8.1	<11	<11
BROMOFORM	SW8260B	µg/kg	5	0.40	<8.1	<11	<11
BROMOMETHANE	SW8260B	µg/kg	5	0.59	<8.1	<11	<11
2-BUTANONE (MEK)	SW8260B	µg/kg	100	3.6	<160	15J	16J
CARBON DISULFIDE	SW8260B	µg/kg	5	0.21	<8.1	7J	10
CARBON TETRACHLORIDE	SW8260B	µg/kg	5	0.78	<8.1	<11	<11
CHLOROBENZENE	SW8260B	µg/kg	5	0.28	<8.1	<11	<11
DIBROMOCHLOROMETHANE	SW8260B	µg/kg	5	0.43	<8.1	<11	<11
CHLOROETHANE	SW8260B	µg/kg	5	0.75	<8.1	<11	<11
CHLOROFORM	SW8260B	µg/kg	5	0.46	<8.1	<11	<11
CHLOROMETHANE	SW8260B	µg/kg	5	0.33	<8.1	<11	<11
1,2-DICHLOROBENZENE	SW8260B	µg/kg	5	0.19	<8.1	<11	<11
1,3-DICHLOROBENZENE	SW8260B	µg/kg	5	0.29	<8.1	<11	<11
1,4-DICHLOROBENZENE	SW8260B	µg/kg	5	0.20	<8.1	<11	<11
DICHLORODIFLUOROMETHANE	SW8260B	µg/kg	5	0.77	<8.1	<11	<11
1,1-DICHLOROETHANE	SW8260B	µg/kg	5	0.30	<8.1	<11	<11
1,2-DICHLOROETHANE	SW8260B	µg/kg	5	0.39	<8.1	<11	<11
1,1-DICHLOROETHENE	SW8260B	µg/kg	5	0.23	<8.1	<11	<11
CIS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	0.51	<8.1	<11	<11
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	0.40	<8.1	<11	<11
1,2-DICHLOROPROPANE	SW8260B	µg/kg	5	0.52	<8.1	<11	<11
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	0.45	<8.1	<11	<11
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	0.28	<8.1	<11	<11
ETHYLBENZENE	SW8260B	µg/kg	5	0.32	<8.1	<11	<11
2-HEXANONE	SW8260B	µg/kg	10	0.25	<16	<23	<21
METHYLENE CHLORIDE	SW8260B	µg/kg	5	0.52	5J	7J	6J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/kg	50	0.50	<81	<110	<110
STYRENE	SW8260B	µg/kg	5	0.25	<8.1	<11	<11
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	0.47	<8.1	<11	<11
TETRACHLOROETHENE	SW8260B	µg/kg	5	0.50	<8.1	<11	<11
TOLUENE	SW8260B	µg/kg	5	0.57	<8.1	<11	<11
1,1,1-TRICHLOROETHANE	SW8260B	µg/kg	5	0.78	<8.1	<11	<11
1,1,2-TRICHLOROETHANE	SW8260B	µg/kg	5	0.60	<8.1	<11	<11
TRICHLOROETHENE	SW8260B	µg/kg	5	0.47	<8.1	<11	<11
TRICHLOROFLUOROMETHANE	SW8260B	µg/kg	5	0.40	<8.1	<11	<11
1,1,2-TRICHLOROTRIFLUOROETHANE	SW8260B	µg/kg	10	0.88	<16	<23	<21
VINYL ACETATE	SW8260B	µg/kg	10	0.98	<16	<23	<21
VINYL CHLORIDE	SW8260B	µg/kg	5	0.52	<8.1	<11	<11
XYLENES, TOTAL	SW8260B	µg/kg	15	0.39	<24	<34	<32

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-203-00 03-06205-1	HAAF-ADA-203-06 03-06205-2	HAAF-ADA-204-06 03-06205-3
SEMI-VOC COMPOUNDS							
Dilution Factor					1	1	1
ACENAPHTHENE	SW8270C	µg/kg	330	20	<450	<630	<620
ACENAPHTHYLENE	SW8270C	µg/kg	330	21	<450	<630	<620
ANTHRACENE	SW8270C	µg/kg	330	20	<450	<630	<620
BENZO(A)ANTHRACENE	SW8270C	µg/kg	330	17	<450	<630	<620
BENZO(A)PYRENE	SW8270C	µg/kg	330	26	<450	<630	<620
BENZO(B)FLUORANTHENE	SW8270C	µg/kg	330	28	<450	<630	<620
BENZO(G,H,I)PERYLENE	SW8270C	µg/kg	330	32	<450	<630	<620
BENZO(K)FLUORANTHENE	SW8270C	µg/kg	330	63	<450	<630	<620
BENZYL ALCOHOL	SW8270C	µg/kg	32 (b)	32	<43	<61	<60
BIS(2-CHLOROETHOXY)METHANE	SW8270C	µg/kg	330	20	<450	<630	<620
BIS(2-CHLOROETHYL)ETHER	SW8270C	µg/kg	330	49	<450	<630	<620
BIS(2-CHLOROISOPROPYL)ETHER	SW8270C	µg/kg	330	37	<450	<630	<620
BIS(2-ETHYLHEXYL)PHTHALATE	SW8270C	µg/kg	330	18	<450	<630	<620
4-BROMOPHENYL-PHENYLETHER	SW8270C	µg/kg	330	16	<450	<630	<620
BUTYLBENZYLPHTHALATE	SW8270C	µg/kg	330	18	<450	<630	<620
4-CHLORO-3-METHYLPHENOL	SW8270C	µg/kg	330	29	<450	<630	<620
4-CHLOROANILINE	SW8270C	µg/kg	110 (b)	110	<150	<210	<210
2-CHLORONAPHTHALENE	SW8270C	µg/kg	330	29	<450	<630	<620
2-CHLOROPHENOL	SW8270C	µg/kg	330	34	<450	<630	<620
4-CHLOROPHENYL PHENYL ETHER	SW8270C	µg/kg	330	18	<450	<630	<620
CHRYSENE	SW8270C	µg/kg	330	12	<450	<630	<620
DI-N-BUTYL PHTHALATE	SW8270C	µg/kg	330	28	<450	<630	<620
DI-N-OCTYLPHTHALATE	SW8270C	µg/kg	330	32	<450	<630	<620
DIBENZ(A,H)ANTHRACENE	SW8270C	µg/kg	330	23	<450	<630	<620
DIBENZOFURAN	SW8270C	µg/kg	330	24	<450	<630	<620
1,2-DICHLOROBENZENE	SW8270C	µg/kg	330	34	<450	<630	<620
1,3-DICHLOROBENZENE	SW8270C	µg/kg	330	32	<450	<630	<620
1,4-DICHLOROBENZENE	SW8270C	µg/kg	330	32	<450	<630	<620
3,3'-DICHLOROBENZIDINE	SW8270C	µg/kg	66 (b)	66	<89	<130	<120
2,4-DICHLOROPHENOL	SW8270C	µg/kg	330	27	<450	<630	<620
2,6-DICHLOROPHENOL	SW8270C	µg/kg	330	26	<450	<630	<620
DIETHYL PHTHALATE	SW8270C	µg/kg	330	19	<450	<630	<620
DIMETHYLPHTHALATE	SW8270C	µg/kg	330	20	<450	<630	<620
2,4-DIMETHYLPHENOL	SW8270C	µg/kg	330	26	<450	<630	<620
4,6-DINITRO-2-METHYLPHENOL	SW8270C	µg/kg	1700	125	<2200	<3200	<3100
2,4-DINITROPHENOL	SW8270C	µg/kg	1700	49	<2200	<3200	<3100
2,4-DINITROTOLUENE	SW8270C	µg/kg	330	19	<450	<630	<620
2,6-DINITROTOLUENE	SW8270C	µg/kg	330	23	<450	<630	<620
FLUORANTHENE	SW8270C	µg/kg	330	16	<450	<630	<620
FLUORENE	SW8270C	µg/kg	330	24	<450	<630	<620
HEXACHLOROBENZENE	SW8270C	µg/kg	330	18	<450	<630	<620
HEXACHLOROBUTADIENE	SW8270C	µg/kg	330	32	<450	<630	<620

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-203-00 03-06205-1	HAAF-ADA-203-06 03-06205-2	HAAF-ADA-204-06 03-06205-3
HEXACHLOROCYCLOPENTADIENE	SW8270C	µg/kg	340 (b)	342	< 460	< 650	< 640
HEXACHLOROETHANE	SW8270C	µg/kg	330	30	< 450	< 630	< 620
INDENO(1,2,3-C,D)PYRENE	SW8270C	µg/kg	330	27	< 450	< 630	< 620
ISOPHORONE	SW8270C	µg/kg	330	29	< 450	< 630	< 620
2-METHYLNAPHTHALENE	SW8270C	µg/kg	330	22	< 450	< 630	< 620
3/4-METHYLPHENOL	SW8270C	µg/kg	330	32	< 450	< 630	< 620
2-METHYLPHENOL	SW8270C	µg/kg	330	35	< 450	< 630	< 620
NAPHTHALENE	SW8270C	µg/kg	330	29	< 450	< 630	< 620
2-NITROANILINE	SW8270C	µg/kg	3300	105	< 4500	< 6300	< 6200
3-NITROANILINE	SW8270C	µg/kg	1700	91	< 2200	< 3200	< 3100
4-NITROANILINE	SW8270C	µg/kg	1700	85	< 2200	< 3200	< 3100
NITROBENZENE	SW8270C	µg/kg	330	29	< 450	< 630	< 620
2-NITROPHENOL	SW8270C	µg/kg	330	25	< 450	< 630	< 620
4-NITROPHENOL	SW8270C	µg/kg	1700	123	< 2200	< 3200	< 3100
N-NITROSODI-N-PROPYLAMINE	SW8270C	µg/kg	330	39	< 450	< 630	< 620
N-NITROSO-DIPHENYLAMINE	SW8270C	µg/kg	110 (b)	111	< 150	< 210	< 210
PENTACHLOROPHENOL	SW8270C	µg/kg	1700	121	< 2200	< 3200	< 3100
PHENANTHRENE	SW8270C	µg/kg	330	17	< 450	< 630	< 620
PHENOL	SW8270C	µg/kg	330	34	< 450	< 630	< 620
PYRENE	SW8270C	µg/kg	330	19	< 450	< 630	< 620
1,2,4-TRICHLOROBENZENE	SW8270C	µg/kg	330	31	< 450	< 630	< 620
2,4,5-TRICHLOROPHENOL	SW8270C	µg/kg	330	13	< 450	< 630	< 620
2,4,6-TRICHLOROPHENOL	SW8270C	µg/kg	330	17	< 450	< 630	< 620
ORGANOCHLORINE PESTICIDES							
Dilution Factor					1	1	1
ALDRIN	SW8081A	µg/kg	5	0.18	-	< 9.6	< 9.3
BETA-BHC	SW8081A	µg/kg	5	0.086	-	< 9.6	< 9.3
ALPHA-BHC	SW8081A	µg/kg	5	0.014	-	< 9.6	< 9.3
DELTA-BHC	SW8081A	µg/kg	5	0.051	-	< 9.6	< 9.3
GAMMA-BHC	SW8081A	µg/kg	5	0.036	-	< 9.6	< 9.3
ALPHA-CHLORDANE	SW8081A	µg/kg	5	0.050	-	< 9.6	< 9.3
GAMMA-CHLORDANE	SW8081A	µg/kg	5	0.040	-	< 9.6	< 9.3
4,4'-DDD	SW8081A	µg/kg	5	0.10	-	< 9.6	< 9.3
4,4'-DDE	SW8081A	µg/kg	5	0.064	-	< 9.6	< 9.3
4,4'-DDT	SW8081A	µg/kg	5	0.024	-	< 9.6	< 9.3
DIELDRIN	SW8081A	µg/kg	5	0.034	-	< 9.6	< 9.3
ENDOSULFAN I	SW8081A	µg/kg	5	0.017	-	< 9.6	< 9.3
ENDOSULFAN II	SW8081A	µg/kg	5	0.12	-	< 9.6	< 9.3
ENDOSULFAN SULFATE	SW8081A	µg/kg	5	0.35	-	< 9.6	< 9.3
ENDRIN	SW8081A	µg/kg	5	0.026	-	< 9.6	< 9.3
ENDRIN ALDEHYDE	SW8081A	µg/kg	5	0.030	-	< 9.6	< 9.3
HEPTACHLOR	SW8081A	µg/kg	5	0.063	-	< 9.6	< 9.3
HEPTACHLOR EPOXIDE	SW8081A	µg/kg	5	0.016	-	< 9.6	< 9.3
METHOXYCHLOR	SW8081A	µg/kg	17	0.068	-	< 33	< 32
TOXAPHENE	SW8081A	µg/kg	100	18	-	< 190	< 190

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-204-14 03-06205-4	HAAF-ADA-206-01 03-06205-5	HAAF-ADA-208-6 03-06205-6
MOISTURE	ASTM-D2216	%Moisture	0.5	0.10	15.0	14.8	48.9
PH	9045C	pH unit	0.01	0.01	7.86	7.88	7.96
TTLC 17 METALS							
Dilution Factor					1	1	1
ANTIMONY	SW6010B	mg/kg	3	0.12	<3.5	<3.5	<5.9
ARSENIC	SW6010B	mg/kg	5	0.078	0.95J	3.7J	10.5
BARIUM	SW6010B	mg/kg	100	0.050	66.4J	147	47.3J
BERYLLIUM	SW6010B	mg/kg	0.5	0.002	0.17J	0.27J	<0.98
CADMIUM	SW6010B	mg/kg	0.5	0.022	0.25J	<0.59	<0.98
CHROMIUM	SW6010B	mg/kg	10	0.043	6.9J	9.6J	93.4
COBALT	SW6010B	mg/kg	10	0.031	9.6J	4.2J	18.1J
COPPER	SW6010B	mg/kg	10	0.060	4.2J	3.9J	37.8
LEAD	SW6010B	mg/kg	20	0.062	6.0J	8.3J	9.9J
MERCURY	SW7471A	mg/kg	0.1	0.007	0.34	0.68	0.10J
MOLYBDENUM	SW6010B	mg/kg	2	0.063	<2.4	<2.3	<3.9
NICKEL	SW6010B	mg/kg	10	0.042	4.1J	8.6J	89.9
SELENIUM	SW6010B	mg/kg	0.5	0.11	<0.59	<0.59	1.8
SILVER	SW6010B	mg/kg	0.5	0.029	0.30J	<0.59	<0.98
THALLIUM	SW6010B	mg/kg	10	0.070	<12	<12	<20
VANADIUM	SW6010B	mg/kg	10	0.024	12.2	26.8	74.0
ZINC	SW6010B	mg/kg	10	0.19	12.2	22.6	89.8
Dilution Factor					0.84	0.91	1.18
PHC AS GASOLINE(C6-C10)	SW8015B	mg/kg	5	0.015	0.06J	0.06J	0.1J
Dilution Factor					1	1	1
PHC AS DIESEL FUEL(C10-C28)	SW8015B	mg/kg	100	1.1	<120 [a]	<120	7J [a]
VOLATILE ORGANICS							
Dilution Factor					0.78	0.87	1.62
ACETONE	SW8260B	µg/kg	50	6.8	8J	11J	50J
BENZENE	SW8260B	µg/kg	5	0.21	<4.6	<5.1	<16
BROMODICHLOROMETHANE	SW8260B	µg/kg	5	0.94	<4.6	<5.1	<16
BROMOFORM	SW8260B	µg/kg	5	0.40	<4.6	<5.1	<16
BROMOMETHANE	SW8260B	µg/kg	5	0.59	<4.6	<5.1	<16
2-BUTANONE (MEK)	SW8260B	µg/kg	100	3.6	<92	<100	<320
CARBON DISULFIDE	SW8260B	µg/kg	5	0.21	<4.6	<5.1	10J
CARBON TETRACHLORIDE	SW8260B	µg/kg	5	0.78	<4.6	<5.1	<16
CHLOROBENZENE	SW8260B	µg/kg	5	0.28	<4.6	<5.1	<16
DIBROMOCHLOROMETHANE	SW8260B	µg/kg	5	0.43	<4.6	<5.1	<16
CHLOROETHANE	SW8260B	µg/kg	5	0.75	<4.6	<5.1	<16
CHLOROFORM	SW8260B	µg/kg	5	0.46	<4.6	<5.1	<16
CHLOROMETHANE	SW8260B	µg/kg	5	0.33	<4.6	<5.1	<16
1,2-DICHLOROBENZENE	SW8260B	µg/kg	5	0.19	<4.6	<5.1	<16

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-204-14 03-06205-4	HAAF-ADA-206-01 03-06205-5	HAAF-ADA-208-6 03-06205-6
1,3-DICHLOROBENZENE	SW8260B	µg/kg	5	0.29	<4.6	<5.1	<16
1,4-DICHLOROBENZENE	SW8260B	µg/kg	5	0.20	<4.6	<5.1	<16
DICHLORODIFLUOROMETHANE	SW8260B	µg/kg	5	0.77	<4.6	<5.1	<16
1,1-DICHLOROETHANE	SW8260B	µg/kg	5	0.30	<4.6	<5.1	<16
1,2-DICHLOROETHANE	SW8260B	µg/kg	5	0.39	<4.6	<5.1	<16
1,1-DICHLOROETHENE	SW8260B	µg/kg	5	0.23	<4.6	<5.1	<16
CIS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	0.51	<4.6	<5.1	<16
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	0.40	<4.6	<5.1	<16
1,2-DICHLOROPROPANE	SW8260B	µg/kg	5	0.52	<4.6	<5.1	<16
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	0.45	<4.6	<5.1	<16
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	0.28	<4.6	<5.1	<16
ETHYLBENZENE	SW8260B	µg/kg	5	0.32	<4.6	<5.1	<16
2-HEXANONE	SW8260B	µg/kg	10	0.25	<9.2	<10	<32
METHYLENE CHLORIDE	SW8260B	µg/kg	5	0.52	3J	3J	9J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/kg	50	0.50	<46	<51	<160
STYRENE	SW8260B	µg/kg	5	0.25	<4.6	<5.1	<16
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	0.47	<4.6	<5.1	<16
TETRACHLOROETHENE	SW8260B	µg/kg	5	0.50	<4.6	<5.1	<16
TOLUENE	SW8260B	µg/kg	5	0.57	<4.6	<5.1	<16
1,1,1-TRICHLOROETHANE	SW8260B	µg/kg	5	0.78	<4.6	<5.1	<16
1,1,2-TRICHLOROETHANE	SW8260B	µg/kg	5	0.60	<4.6	<5.1	<16
TRICHLOROETHENE	SW8260B	µg/kg	5	0.47	<4.6	<5.1	<16
TRICHLOROFLUOROMETHANE	SW8260B	µg/kg	5	0.40	<4.6	<5.1	<16
1,1,2-TRICHLOROTRIFLUOROETHANE	SW8260B	µg/kg	10	0.88	<9.2	<10	<32
VINYL ACETATE	SW8260B	µg/kg	10	0.98	<9.2	<10	<32
VINYL CHLORIDE	SW8260B	µg/kg	5	0.52	<4.6	<5.1	<16
XYLENES, TOTAL	SW8260B	µg/kg	15	0.39	<14	<15	<48
SEMI-VOC COMPOUNDS							
Dilution Factor					1	1	1
ACENAPHTHENE	SW8270C	µg/kg	330	20	<390	<390	<650
ACENAPHTHYLENE	SW8270C	µg/kg	330	21	<390	<390	<650
ANTHRACENE	SW8270C	µg/kg	330	20	<390	<390	<650
BENZO(A)ANTHRACENE	SW8270C	µg/kg	330	17	<390	<390	<650
BENZO(A)PYRENE	SW8270C	µg/kg	330	26	<390	<390	<650
BENZO(B)FLUORANTHENE	SW8270C	µg/kg	330	28	<390	<390	<650
BENZO(G,H,I)PERYLENE	SW8270C	µg/kg	330	32	<390	<390	<650
BENZO(K)FLUORANTHENE	SW8270C	µg/kg	330	63	<390	<390	<650
BENZYL ALCOHOL	SW8270C	µg/kg	32 (b)	32	<38	<38	<63
BIS(2-CHLOROETHOXY)METHANE	SW8270C	µg/kg	330	20	<390	<390	<650
BIS(2-CHLOROETHYL)ETHER	SW8270C	µg/kg	330	49	<390	<390	<650
BIS(2-CHLOROISOPROPYL)ETHER	SW8270C	µg/kg	330	37	<390	<390	<650
BIS(2-ETHYLHEXYL)PHTHALATE	SW8270C	µg/kg	330	18	<390	<390	<650
4-BROMOPHENYL-PHENYLETHER	SW8270C	µg/kg	330	16	<390	<390	<650
BUTYLBENZYLPHTHALATE	SW8270C	µg/kg	330	18	<390	<390	<650
4-CHLORO-3-METHYLPHENOL	SW8270C	µg/kg	330	29	<390	<390	<650
4-CHLOROANILINE	SW8270C	µg/kg	110 (b)	110	<130	<130	<220
2-CHLORONAPHTHALENE	SW8270C	µg/kg	330	29	<390	<390	<650

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Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-204-14 03-06205-4	HAAF-ADA-206-01 03-06205-5	HAAF-ADA-208-6 03-06205-6
2-CHLOROPHENOL	SW8270C	µg/kg	330	34	<390	<390	<650
4-CHLOROPHENYL PHENYL ETHER	SW8270C	µg/kg	330	18	<390	<390	<650
CHRYSENE	SW8270C	µg/kg	330	12	<390	<390	<650
DI-N-BUTYL PHTHALATE	SW8270C	µg/kg	330	28	<390	<390	<650
DI-N-OCTYLPHTHALATE	SW8270C	µg/kg	330	32	<390	<390	<650
DIBENZ(A,H)ANTHRACENE	SW8270C	µg/kg	330	23	<390	<390	<650
DIBENZOFURAN	SW8270C	µg/kg	330	24	<390	<390	<650
1,2-DICHLOROBENZENE	SW8270C	µg/kg	330	34	<390	<390	<650
1,3-DICHLOROBENZENE	SW8270C	µg/kg	330	32	<390	<390	<650
1,4-DICHLOROBENZENE	SW8270C	µg/kg	330	32	<390	<390	<650
3,3'-DICHLOROBENZIDINE	SW8270C	µg/kg	66 (b)	66	<78	<77	<130
2,4-DICHLOROPHENOL	SW8270C	µg/kg	330	27	<390	<390	<650
2,6-DICHLOROPHENOL	SW8270C	µg/kg	330	26	<390	<390	<650
DIETHYL PHTHALATE	SW8270C	µg/kg	330	19	<390	<390	<650
DIMETHYLPHTHALATE	SW8270C	µg/kg	330	20	<390	<390	<650
2,4-DIMETHYLPHENOL	SW8270C	µg/kg	330	26	<390	<390	<650
4,6-DINITRO-2-METHYLPHENOL	SW8270C	µg/kg	1700	125	<1900	<1900	<3200
2,4-DINITROPHENOL	SW8270C	µg/kg	1700	49	<1900	<1900	<3200
2,4-DINITROTOLUENE	SW8270C	µg/kg	330	19	<390	<390	<650
2,6-DINITROTOLUENE	SW8270C	µg/kg	330	23	<390	<390	<650
FLUORANTHENE	SW8270C	µg/kg	330	16	<390	<390	<650
FLUORENE	SW8270C	µg/kg	330	24	<390	<390	<650
HEXACHLOROBENZENE	SW8270C	µg/kg	330	18	<390	<390	<650
HEXACHLOROBUTADIENE	SW8270C	µg/kg	330	32	<390	<390	<650
HEXACHLOROCYCLOPENTADIENE	SW8270C	µg/kg	340 (b)	342	<400	<400	<670
HEXACHLOROETHANE	SW8270C	µg/kg	330	30	<390	<390	<650
INDENO(1,2,3-C,D)PYRENE	SW8270C	µg/kg	330	27	<390	<390	<650
ISOPHORONE	SW8270C	µg/kg	330	29	<390	<390	<650
2-METHYLNAPHTHALENE	SW8270C	µg/kg	330	22	<390	<390	<650
3/4-METHYLPHENOL	SW8270C	µg/kg	330	32	<390	<390	<650
2-METHYLPHENOL	SW8270C	µg/kg	330	35	<390	<390	<650
NAPHTHALENE	SW8270C	µg/kg	330	29	<390	<390	<650
2-NITROANILINE	SW8270C	µg/kg	3300	105	<3900	<3900	<6500
3-NITROANILINE	SW8270C	µg/kg	1700	91	<1900	<1900	<3200
4-NITROANILINE	SW8270C	µg/kg	1700	85	<1900	<1900	<3200
NITROBENZENE	SW8270C	µg/kg	330	29	<390	<390	<650
2-NITROPHENOL	SW8270C	µg/kg	330	25	<390	<390	<650
4-NITROPHENOL	SW8270C	µg/kg	1700	123	<1900	<1900	<3200
N-NITROSODI-N-PROPYLAMINE	SW8270C	µg/kg	330	39	<390	<390	<650
N-NITROSO-DIPHENYLAMINE	SW8270C	µg/kg	110 (b)	111	<130	<130	<220
PENTACHLOROPHENOL	SW8270C	µg/kg	1700	121	<1900	<1900	<3200
PHENANTHRENE	SW8270C	µg/kg	330	17	<390	<390	<650
PHENOL	SW8270C	µg/kg	330	34	<390	<390	<650
PYRENE	SW8270C	µg/kg	330	19	<390	<390	<650
1,2,4-TRICHLOROBENZENE	SW8270C	µg/kg	330	31	<390	<390	<650
2,4,5-TRICHLOROPHENOL	SW8270C	µg/kg	330	13	<390	<390	<650
2,4,6-TRICHLOROPHENOL	SW8270C	µg/kg	330	17	<390	<390	<650

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Tel: (909) 590-1828 Fax: (909) 590-1498

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Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-204-14 03-06205-4	HAAF-ADA-206-01 03-06205-5	HAAF-ADA-208-6 03-06205-6
ORGANOCHLORINE PESTICIDES							
Dilution Factor					1	1	1
ALDRIN	SW8081A	µg/kg	5	0.18	<5.9	-	<9.8
BETA-BHC	SW8081A	µg/kg	5	0.086	<5.9	-	<9.8
ALPHA-BHC	SW8081A	µg/kg	5	0.014	<5.9	-	<9.8
DELTA-BHC	SW8081A	µg/kg	5	0.051	<5.9	-	<9.8
GAMMA-BHC	SW8081A	µg/kg	5	0.036	<5.9	-	<9.8
ALPHA-CHLORDANE	SW8081A	µg/kg	5	0.050	<5.9	-	<9.8
GAMMA-CHLORDANE	SW8081A	µg/kg	5	0.040	<5.9	-	<9.8
4,4'-DDD	SW8081A	µg/kg	5	0.10	<5.9	-	<9.8
4,4'-DDE	SW8081A	µg/kg	5	0.064	<5.9	-	<9.8
4,4'-DDT	SW8081A	µg/kg	5	0.024	<5.9	-	<9.8
DIELDRIN	SW8081A	µg/kg	5	0.034	<5.9	-	<9.8
ENDOSULFAN I	SW8081A	µg/kg	5	0.017	<5.9	-	<9.8
ENDOSULFAN II	SW8081A	µg/kg	5	0.12	<5.9	-	<9.8
ENDOSULFAN SULFATE	SW8081A	µg/kg	5	0.35	<5.9	-	<9.8
ENDRIN	SW8081A	µg/kg	5	0.026	<5.9	-	<9.8
ENDRIN ALDEHYDE	SW8081A	µg/kg	5	0.030	<5.9	-	<9.8
HEPTACHLOR	SW8081A	µg/kg	5	0.063	<5.9	-	<9.8
HEPTACHLOR EPOXIDE	SW8081A	µg/kg	5	0.016	<5.9	-	<9.8
METHOXYCHLOR	SW8081A	µg/kg	17	0.068	<20	-	<33
TOXAPHENE	SW8081A	µg/kg	100	18	<120	-	<200

Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-208-14 03-06205-7	HAAF-ADA-212-06 03-06205-8	HAAF-ADA-212-14 03-06205-9
MOISTURE	ASTM-D2216	%Moisture	0.5	0.10	15.9	42.4	14.9
PH	9045C	pH unit	0.01	0.01	7.91	5.87	7.01
TTLC 17 METALS							
Dilution Factor					1	1	1
ANTIMONY	SW6010B	mg/kg	3	0.12	<3.6	<5.2	0.52J
ARSENIC	SW6010B	mg/kg	5	0.078	1.9J	9.5	3.3J
BARIUM	SW6010B	mg/kg	100	0.050	135	45.4J	28.3J
BERYLLIUM	SW6010B	mg/kg	0.5	0.002	0.20J	<0.87	0.75
CADMIUM	SW6010B	mg/kg	0.5	0.022	<0.59	<0.87	<0.59
CHROMIUM	SW6010B	mg/kg	10	0.043	14.3	78.6	18.0
COBALT	SW6010B	mg/kg	10	0.031	2.9J	15.5J	6.9J
COPPER	SW6010B	mg/kg	10	0.060	10.1J	31.4	4.2J
LEAD	SW6010B	mg/kg	20	0.062	4.7J	7.9J	15.3J
MERCURY	SW7471A	mg/kg	0.1	0.007	0.095J	0.080J	0.17
MOLYBDENUM	SW6010B	mg/kg	2	0.063	<2.4	<3.5	<2.4
NICKEL	SW6010B	mg/kg	10	0.042	11.4J	77.5	14.9
SELENIUM	SW6010B	mg/kg	0.5	0.11	<0.59	<0.87	0.50J
SILVER	SW6010B	mg/kg	0.5	0.029	<0.59	0.21J	<0.59
THALLIUM	SW6010B	mg/kg	10	0.070	<12	<17	<12
VANADIUM	SW6010B	mg/kg	10	0.024	17.1	62.3	30.4
ZINC	SW6010B	mg/kg	10	0.19	13.4	76.8	21.6
Dilution Factor					0.95	1.52	0.81
PHC AS GASOLINE(C6-C10)	SW8015B	mg/kg	5	0.015	0.05J	0.1J	0.04J
Dilution Factor					1	1	1
PHC AS DIESEL FUEL(C10-C28)	SW8015B	mg/kg	100	1.1	2J	5J	<120

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Tel: (909) 590-1828 Fax: (909) 590-1498

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Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-208-14 03-06205-7	HAAF-ADA-212-06 03-06205-8	HAAF-ADA-212-14 03-06205-9
VOLATILE ORGANICS							
Dilution Factor					0.9	1.55	0.85
ACETONE	SW8260B	µg/kg	50	6.8	12J	52J	10J
BENZENE	SW8260B	µg/kg	5	0.21	<5.4	<13	<5.0
BROMODICHLOROMETHANE	SW8260B	µg/kg	5	0.94	<5.4	<13	<5.0
BROMOFORM	SW8260B	µg/kg	5	0.40	<5.4	<13	<5.0
BROMOMETHANE	SW8260B	µg/kg	5	0.59	<5.4	<13	<5.0
2-BUTANONE (MEK)	SW8260B	µg/kg	100	3.6	<110	<270	<100
CARBON DISULFIDE	SW8260B	µg/kg	5	0.21	<5.4	69	<5.0
CARBON TETRACHLORIDE	SW8260B	µg/kg	5	0.78	<5.4	<13	<5.0
CHLOROBENZENE	SW8260B	µg/kg	5	0.28	<5.4	<13	<5.0
DIBROMOCHLOROMETHANE	SW8260B	µg/kg	5	0.43	<5.4	<13	<5.0
CHLOROETHANE	SW8260B	µg/kg	5	0.75	<5.4	<13	<5.0
CHLOROFORM	SW8260B	µg/kg	5	0.46	<5.4	<13	0.6J
CHLOROMETHANE	SW8260B	µg/kg	5	0.33	<5.4	<13	<5.0
1,2-DICHLOROBENZENE	SW8260B	µg/kg	5	0.19	<5.4	<13	<5.0
1,3-DICHLOROBENZENE	SW8260B	µg/kg	5	0.29	<5.4	<13	<5.0
1,4-DICHLOROBENZENE	SW8260B	µg/kg	5	0.20	<5.4	<13	<5.0
DICHLORODIFLUOROMETHANE	SW8260B	µg/kg	5	0.77	<5.4	<13	<5.0
1,1-DICHLOROETHANE	SW8260B	µg/kg	5	0.30	<5.4	<13	<5.0
1,2-DICHLOROETHANE	SW8260B	µg/kg	5	0.39	<5.4	<13	<5.0
1,1-DICHLOROETHENE	SW8260B	µg/kg	5	0.23	<5.4	<13	<5.0
CIS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	0.51	<5.4	<13	<5.0
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	0.40	<5.4	<13	<5.0
1,2-DICHLOROPROPANE	SW8260B	µg/kg	5	0.52	<5.4	<13	<5.0
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	0.45	<5.4	<13	<5.0
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	0.28	<5.4	<13	<5.0
ETHYLBENZENE	SW8260B	µg/kg	5	0.32	<5.4	<13	<5.0
2-HEXANONE	SW8260B	µg/kg	10	0.25	<11	<27	<10
METHYLENE CHLORIDE	SW8260B	µg/kg	5	0.52	3J	9J	4J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/kg	50	0.50	<54	<130	<50
STYRENE	SW8260B	µg/kg	5	0.25	<5.4	<13	<5.0
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	0.47	<5.4	<13	<5.0
TETRACHLOROETHENE	SW8260B	µg/kg	5	0.50	<5.4	<13	<5.0
TOLUENE	SW8260B	µg/kg	5	0.57	<5.4	<13	<5.0
1,1,1-TRICHLOROETHANE	SW8260B	µg/kg	5	0.78	<5.4	<13	<5.0
1,1,2-TRICHLOROETHANE	SW8260B	µg/kg	5	0.60	<5.4	<13	<5.0
TRICHLOROETHENE	SW8260B	µg/kg	5	0.47	<5.4	<13	<5.0
TRICHLOROFLUOROMETHANE	SW8260B	µg/kg	5	0.40	<5.4	<13	<5.0
1,1,2-TRICHLOROTRIFLUOROETHANE	SW8260B	µg/kg	10	0.88	<11	<27	<10
VINYL ACETATE	SW8260B	µg/kg	10	0.98	<11	<27	<10
VINYL CHLORIDE	SW8260B	µg/kg	5	0.52	<5.4	<13	<5.0
XYLENES, TOTAL	SW8260B	µg/kg	15	0.39	<16	<40	<15

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Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-208-14 03-06205-7	HAAF-ADA-212-06 03-06205-8	HAAF-ADA-212-14 03-06205-9
SEMI-VOC COMPOUNDS							
Dilution Factor					1	1	1
ACENAPHTHENE	SW8270C	µg/kg	330	20	<390	<570	<390
ACENAPHTHYLENE	SW8270C	µg/kg	330	21	<390	<570	<390
ANTHRACENE	SW8270C	µg/kg	330	20	<390	<570	<390
BENZO(A)ANTHRACENE	SW8270C	µg/kg	330	17	<390	<570	<390
BENZO(A)PYRENE	SW8270C	µg/kg	330	26	<390	<570	<390
BENZO(B)FLUORANTHENE	SW8270C	µg/kg	330	28	<390	<570	<390
BENZO(G,H,I)PERYLENE	SW8270C	µg/kg	330	32	<390	<570	<390
BENZO(K)FLUORANTHENE	SW8270C	µg/kg	330	63	<390	<570	<390
BENZYL ALCOHOL	SW8270C	µg/kg	32 (b)	32	<38	<56	<38
BIS(2-CHLOROETHOXY)METHANE	SW8270C	µg/kg	330	20	<390	<570	<390
BIS(2-CHLOROETHYL)ETHER	SW8270C	µg/kg	330	49	<390	<570	<390
BIS(2-CHLOROISOPROPYL)ETHER	SW8270C	µg/kg	330	37	<390	<570	<390
BIS(2-ETHYLHEXYL)PHTHALATE	SW8270C	µg/kg	330	18	<390	49J	<390
4-BROMOPHENYL-PHENYLETHER	SW8270C	µg/kg	330	16	<390	<570	<390
BUTYLBENZYLPHTHALATE	SW8270C	µg/kg	330	18	<390	<570	<390
4-CHLORO-3-METHYLPHENOL	SW8270C	µg/kg	330	29	<390	<570	<390
4-CHLOROANILINE	SW8270C	µg/kg	110 (b)	110	<130	<190	<130
2-CHLORONAPHTHALENE	SW8270C	µg/kg	330	29	<390	<570	<390
2-CHLOROPHENOL	SW8270C	µg/kg	330	34	<390	<570	<390
4-CHLOROPHENYL PHENYL ETHER	SW8270C	µg/kg	330	18	<390	<570	<390
CHRYSENE	SW8270C	µg/kg	330	12	<390	<570	<390
DI-N-BUTYL PHTHALATE	SW8270C	µg/kg	330	28	<390	<570	<390
DI-N-OCTYLPHTHALATE	SW8270C	µg/kg	330	32	<390	<570	<390
DIBENZ(A,H)ANTHRACENE	SW8270C	µg/kg	330	23	<390	<570	<390
DIBENZOFURAN	SW8270C	µg/kg	330	24	<390	<570	<390
1,2-DICHLOROBENZENE	SW8270C	µg/kg	330	34	<390	<570	<390
1,3-DICHLOROBENZENE	SW8270C	µg/kg	330	32	<390	<570	<390
1,4-DICHLOROBENZENE	SW8270C	µg/kg	330	32	<390	<570	<390
3,3'-DICHLOROBENZIDINE	SW8270C	µg/kg	66 (b)	66	<79	<110	<78
2,4-DICHLOROPHENOL	SW8270C	µg/kg	330	27	<390	<570	<390
2,6-DICHLOROPHENOL	SW8270C	µg/kg	330	26	<390	<570	<390
DIETHYL PHTHALATE	SW8270C	µg/kg	330	19	<390	<570	<390
DIMETHYLPHTHALATE	SW8270C	µg/kg	330	20	<390	<570	<390
2,4-DIMETHYLPHENOL	SW8270C	µg/kg	330	26	<390	<570	<390
4,6-DINITRO-2-METHYLPHENOL	SW8270C	µg/kg	1700	125	<2000	<2900	<1900
2,4-DINITROPHENOL	SW8270C	µg/kg	1700	49	<2000	<2900	<1900
2,4-DINITROTOLUENE	SW8270C	µg/kg	330	19	<390	<570	<390
2,6-DINITROTOLUENE	SW8270C	µg/kg	330	23	<390	<570	<390
FLUORANTHENE	SW8270C	µg/kg	330	16	<390	<570	<390
FLUORENE	SW8270C	µg/kg	330	24	<390	<570	<390
HEXACHLOROBENZENE	SW8270C	µg/kg	330	18	<390	<570	<390
HEXACHLOROBUTADIENE	SW8270C	µg/kg	330	32	<390	<570	<390
HEXACHLOROCYCLOPENTADIENE	SW8270C	µg/kg	340 (b)	342	<410	<590	<400
HEXACHLOROETHANE	SW8270C	µg/kg	330	30	<390	<570	<390
INDENO(1,2,3-C,D)PYRENE	SW8270C	µg/kg	330	27	<390	<570	<390
ISOPHORONE	SW8270C	µg/kg	330	29	<390	<570	<390
2-METHYLNAPHTHALENE	SW8270C	µg/kg	330	22	<390	<570	<390
3/4-METHYLPHENOL	SW8270C	µg/kg	330	32	<390	<570	<390
2-METHYLPHENOL	SW8270C	µg/kg	330	35	<390	<570	<390
NAPHTHALENE	SW8270C	µg/kg	330	29	<390	<570	<390

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	MDL	Analysis Result HAAF-ADA-208-14 03-06205-7	HAAF-ADA-212-06 03-06205-8	HAAF-ADA-212-14 03-06205-9
2-NITROANILINE	SW8270C	µg/kg	3300	105	<3900	<5700	<3900
3-NITROANILINE	SW8270C	µg/kg	1700	91	<2000	<2900	<1900
4-NITROANILINE	SW8270C	µg/kg	1700	85	<2000	<2900	<1900
NITROBENZENE	SW8270C	µg/kg	330	29	<390	<570	<390
2-NITROPHENOL	SW8270C	µg/kg	330	25	<390	<570	<390
4-NITROPHENOL	SW8270C	µg/kg	1700	123	<2000	<2900	<1900
N-NITROSODI-N-PROPYLAMINE	SW8270C	µg/kg	330	39	<390	<570	<390
N-NITROSO-DIPHENYLAMINE	SW8270C	µg/kg	110 (b)	111	<130	<190	<130
PENTACHLOROPHENOL	SW8270C	µg/kg	1700	121	<2000	<2900	<1900
PHENANTHRENE	SW8270C	µg/kg	330	17	<390	<570	<390
PHENOL	SW8270C	µg/kg	330	34	<390	<570	<390
PYRENE	SW8270C	µg/kg	330	19	<390	<570	<390
1,2,4-TRICHLOROBENZENE	SW8270C	µg/kg	330	31	<390	<570	<390
2,4,5-TRICHLOROPHENOL	SW8270C	µg/kg	330	13	<390	<570	<390
2,4,6-TRICHLOROPHENOL	SW8270C	µg/kg	330	17	<390	<570	<390
ORGANOCHLORINE PESTICIDES							
Dilution Factor					1	1	1
ALDRIN	SW8081A	µg/kg	5	0.18	<5.9	<8.7	<5.9
BETA-BHC	SW8081A	µg/kg	5	0.086	<5.9	<8.7	<5.9
ALPHA-BHC	SW8081A	µg/kg	5	0.014	<5.9	<8.7	<5.9
DELTA-BHC	SW8081A	µg/kg	5	0.051	<5.9	<8.7	<5.9
GAMMA-BHC	SW8081A	µg/kg	5	0.036	<5.9	<8.7	<5.9
ALPHA-CHLORDANE	SW8081A	µg/kg	5	0.050	<5.9	<8.7	<5.9
GAMMA-CHLORDANE	SW8081A	µg/kg	5	0.040	<5.9	<8.7	<5.9
4,4'-DDD	SW8081A	µg/kg	5	0.10	<5.9	<8.7	<5.9
4,4'-DDE	SW8081A	µg/kg	5	0.064	<5.9	<8.7	<5.9
4,4'-DDT	SW8081A	µg/kg	5	0.024	<5.9	<8.7	<5.9
DIELDRIN	SW8081A	µg/kg	5	0.034	<5.9	<8.7	<5.9
ENDOSULFAN I	SW8081A	µg/kg	5	0.017	<5.9	<8.7	<5.9
ENDOSULFAN II	SW8081A	µg/kg	5	0.12	<5.9	<8.7	<5.9
ENDOSULFAN SULFATE	SW8081A	µg/kg	5	0.35	<5.9	<8.7	<5.9
ENDRIN	SW8081A	µg/kg	5	0.026	<5.9	<8.7	<5.9
ENDRIN ALDEHYDE	SW8081A	µg/kg	5	0.030	<5.9	<8.7	<5.9
HEPTACHLOR	SW8081A	µg/kg	5	0.063	<5.9	<8.7	<5.9
HEPTACHLOR EPOXIDE	SW8081A	µg/kg	5	0.016	<5.9	<8.7	<5.9
METHOXYCHLOR	SW8081A	µg/kg	17	0.068	<20	<30	<20
TOXAPHENE	SW8081A	µg/kg	100	18	<120	<170	<120

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
† All results are reported on dry basis for soil samples.
Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0
(a) Unknown mixture in Diesel range.
(b) MDL reported.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

005189

CHAIN OF CUSTODY RECORD

US ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
Environmental Engineering Branch
SPK-ED-E
1325 J Street
Sacramento, California
95814-2922

Project Name: Northwest Alleged Disposal Area
Project Location: Hamilton AAF
Project Coordinator: Carolyn Fong
Phone: (916) 557-7513 FAX: (916)-557-5307
Sampler: B VanEtten, Tim Crummett Phone:

Laboratory: APCL
Address: 13760 Magnolia
Chino, CA 91710
Contact: Eric Wendland
Phone: (909) 590-1828

ANALYSIS REQUESTED →

SAMPLE IDENTIFICATION Field	Laboratory	GRAB	COMP	DATE	TIME	EPA 8015B-P	EPA 8015B-E	EPA 8260B	EPA 8270C	EPA 9310	EPA 8081	EPA 6010	EPA 7471	MS/MSD	TURN AROUND TIME (DAYS)	MATRIX CODE	NUMBER OF PLASTIC	GLASS	VOA	SLEEVE	ENCORE	PRESERVATIVE CODE
HAAF-ADA-212-14	APCL	X		11/18/03	1200		X		X	X	X	X	X					3				
HAAF-ADA-212-14		X		11/18/03	1200	X		X													6	
HAAF-ADA-212-06		X			1150		X		X	X	X	X	X					3				
HAAF-ADA-204-06					1120		X		X	X	X	X	X					3				
HAAF-ADA-208-06					1020		X		X	X	X	X	X					3				
HAAF-ADA-208-14					1030		X		X	X	X	X	X					3				
HAAF-ADA-204-14					1230		X		X	X	X	X	X					3				
HAAF-ADA-206-01					1350		X		X	X		X	X					3				
HAAF-ADA-203-06					1420		X		X	X	X	X	X					3				
HAAF-ADA-203-00	↓	↓		↓	1410		X		X	X		X	X					3				

6205

COMMENTS/SPECIAL INSTRUCTIONS:

CHECKED BY: TC

PRESERVATIVE CODES:
C = HCl N = HNO_3 S = H_2SO_4

SAMPLE DISPOSAL:
☐ Hold ☐ Dispose ☐ Return

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
Tim Crummett	11/18/03 1600		11/19/03 0900

MATRIX CODES:
W = Water SI = Sludge SP = Solid Product
S = Soil A = Air LP = Liquid Product
Sd = Sediment

SHIPPING:
☒ Fed Ex ☐ Courier ☐ Hand Deliver
Airbill Number: 8386 0625 3628

CESPK FORM 111
13 Feb 02

DISTRIBUTION: WHITE and YELLOW - send to testing laboratory; PINK - retained by originator

005188

CHAIN OF CUSTODY RECORD

US ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
Environmental Engineering Branch
SPK-ED-E
1325 J Street
Sacramento, California
95814-2922

Project Name: North West Alleged Disposal Area
Project Location: Hamilton AAF
Project Coordinator: Carleton Fong
Phone: 916 557-7513 FAX: (916) 557-5307
Sampler: B. VanEtten, Tim Cranmer Phone:

Laboratory: APCL
Address: 13760 Magnolia
Chino, CA 91710
Contact: Eric Wedland
Phone: (909) 590-1828

ANALYSIS REQUESTED →

SAMPLE IDENTIFICATION Field	Laboratory	GRAB	COMP	DATE	TIME	EPA 8015 B-D	EPA 8015 B-E	EPA 8260 B	EPA 8270 C	EPA 9310	EPA 8081	EPA 6010	EPA 7471	MS/MSD	TURN AROUND TIME (DAYS)	MATRIX CODE	NUMBER OF PLASTIC	GLASS	VOA	SLEEVE	ENCORE	PRESERVATIVE CODE
HAAF-ADA-212-06	APCL	X		11/18/03	1150	X		X											X		6	
HAAF-ADA-208-14		X		"	1030	X		X													6	
HAAF-ADA-208-6		X			1020	X		X													6	
HAAF-ADA-206-01		X			1150	X		X													6	
HAAF-ADA-204-14		X			1230	X		X													6	
HAAF-ADA-204-06		X			1120	X		X													6	
HAAF-ADA-203-00		X			1410	X		X													6	
HAAF-ADA-203-06		X			1420	X		X													6	

6205

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COMMENTS/SPECIAL INSTRUCTIONS:

CHECKED BY: TC

PRESERVATIVE CODES:
C = HCl N = HNO_3 S = H_2SO_4

SAMPLE DISPOSAL:
☐ Hold ☐ Dispose ☐ Return

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
Tim Cranmer	11/18/03 1600	[signature]	11/19/03 0900

MATRIX CODES:
W = Water Sl = Sludge SP = Solid Product
S = Soil A = Air LP = Liquid Product
Sd = Sediment

SHIPPING:
☒ Fed Ex ☐ Courier ☐ Hand Deliver
Airbill Number: 838606253628

CESPK FORM 111
13 Feb 02

DISTRIBUTION: WHITE and YELLOW - send to testing laboratory; PINK - retained by originator

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Applied P & Ch Laboratory
Address : 13760 Magnolia Ave.
Chino, California 91710

Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-207-5
Sample ID: 104815001
Matrix: Soil
Collect Date: 19-NOV-03 12:35
Receive Date: 07-JAN-04
Collector: Client

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Gross A/B, solid												
Alpha		8.27	+/-2.04	1.72	4.00	pCi/g		ATH1	01/16/04	1518	303351	1
Beta		16.4	+/-1.97	1.94	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AWB	01/08/04	1448	301917

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 900.0 Modified	

Notes:
The Qualifiers in this report are defined as follows :

< Result is less than amount reported.
> Result is greater than amount reported.
B Target analyte was detected in the sample as well as the associated blank.
BD Flag for results below the MDC or a flag for low tracer recovery.
E Concentration of the target analyte exceeds the instrument calibration range.
H Analytical holding time exceeded.
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
P The response between the confirmation column and the primary column is >40%D.
U Indicates the target analyte was analyzed for but not detected above the detection limit.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
Y QC Samples were not spiked with this compound.
h Sample preparation or preservation holding time exceeded.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Applied P & Ch Laboratory
Address : 13760 Magnolia Ave.
Chino, California 91710

Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-207-5
Sample ID: 104815001

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Jake Crook.

_____
Reviewed by

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Applied P & Ch Laboratory
Address : 13760 Magnolia Ave.
Chino, California 91710

Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-207-14
Sample ID: 104815002
Matrix: Soil
Collect Date: 19-NOV-03 12:45
Receive Date: 07-JAN-04
Collector: Client

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid											
Alpha		9.32	+/-2.07	1.93	4.00	pCi/g		ATH1 01/16/04	1518	303351	1
Beta		25.6	+/-2.24	1.78	10.0	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AWB	01/08/04	1448	301917

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 900.0 Modified	

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X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
Y QC Samples were not spiked with this compound.
h Sample preparation or preservation holding time exceeded.

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Certificate of Analysis

Company : Applied P & Ch Laboratory
Address : 13760 Magnolia Ave.
Chino, California 91710

Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-207-14
Sample ID: 104815002

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Reviewed by

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Certificate of Analysis

Company : Applied P & Ch Laboratory
Address : 13760 Magnolia Ave.
Chino, California 91710

Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-205-6
Sample ID: 104815003
Matrix: Soil
Collect Date: 19-NOV-03 08:30
Receive Date: 07-JAN-04
Collector: Client

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid											
Alpha		7.11	+/-1.96	1.82	4.00	pCi/g		ATH1 01/16/04	1518	303351	1
Beta		10.7	+/-1.78	2.16	10.0	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AWB	01/08/04	1448	301917

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 900.0 Modified	

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UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
Y QC Samples were not spiked with this compound.
h Sample preparation or preservation holding time exceeded.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Applied P & Ch Laboratory
Address : 13760 Magnolia Ave.
Chino, California 91710

Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-205-6
Sample ID: 104815003

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Jake Crook.

_____
Reviewed by

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Applied P & Ch Laboratory
Address : 13760 Magnolia Ave.
Chino, California 91710

Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID:	HAAF-ADA-205-14	Project:	APCL00201
Sample ID:	104815004	Client ID:	APCL001
Matrix:	Soil		
Collect Date:	19-NOV-03 08:40		
Receive Date:	07-JAN-04		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid											
Alpha		8.22	+/-1.99	1.67	4.00	pCi/g		ATH1 01/16/04	1518	303351	1
Beta		15.7	+/-1.87	1.73	10.0	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AWB	01/08/04	1448	301917

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 900.0 Modified	

Notes:
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UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
Y QC Samples were not spiked with this compound.
h Sample preparation or preservation holding time exceeded.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Applied P & Ch Laboratory
Address : 13760 Magnolia Ave.
Chino, California 91710

Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-205-14
Sample ID: 104815004

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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_____
Reviewed by

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Applied P & Ch Laboratory
Address : 13760 Magnolia Ave.
Chino, California 91710

Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-210-14
Sample ID: 104815005
Matrix: Soil
Collect Date: 19-NOV-03 10:45
Receive Date: 07-JAN-04
Collector: Client

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid											
Alpha		11.9	+/-2.37	1.76	4.00	pCi/g		ATH1 01/16/04	1518	303351	1
Beta		13.8	+/-1.79	1.81	10.0	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AWB	01/08/04	1448	301917

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 900.0 Modified	

Notes:
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UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
Y QC Samples were not spiked with this compound.
h Sample preparation or preservation holding time exceeded.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Applied P & Ch Laboratory
Address : 13760 Magnolia Ave.
Chino, California 91710

Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-210-14
Sample ID: 104815005

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Reviewed by

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Applied P & Ch Laboratory
Address : 13760 Magnolia Ave.
Chino, California 91710

Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-21-14
Sample ID: 104815006
Matrix: Soil
Collect Date: 19-NOV-03 12:15
Receive Date: 07-JAN-04
Collector: Client

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Gross A/B, solid												
Alpha		6.60	+/-2.02	2.39	4.00	pCi/g		ATH1	01/16/04	1518	303351	1
Beta		14.2	+/-1.92	2.14	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AWB	01/08/04	1448	301917

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 900.0 Modified	

Notes:
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BD Flag for results below the MDC or a flag for low tracer recovery.
E Concentration of the target analyte exceeds the instrument calibration range.
H Analytical holding time exceeded.
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
P The response between the confirmation column and the primary column is >40%D.
U Indicates the target analyte was analyzed for but not detected above the detection limit.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
Y QC Samples were not spiked with this compound.
h Sample preparation or preservation holding time exceeded.

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Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-21-14
Sample ID: 104815006

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Address : 13760 Magnolia Ave.
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Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-211-06
Sample ID: 104815007
Matrix: Soil
Collect Date: 19-NOV-03 09:00
Receive Date: 07-JAN-04
Collector: Client

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid											
Alpha		6.82	+/-1.92	2.04	4.00	pCi/g		ATH1 01/16/04	1518	303351	1
Beta		10.7	+/-1.70	1.96	10.0	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AWB	01/08/04	1448	301917

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 900.0 Modified	

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UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
Y QC Samples were not spiked with this compound.
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Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-211-06
Sample ID: 104815007

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-211-14
Sample ID: 104815008
Matrix: Soil
Collect Date: 19-NOV-03 09:10
Receive Date: 07-JAN-04
Collector: Client

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid											
Alpha		7.05	+/-1.97	2.34	4.00	pCi/g		ATH1 01/16/04	1907	303351	1
Beta		10.7	+/-1.63	1.90	10.0	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AWB	01/08/04	1448	301917

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 900.0 Modified	

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Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-211-14
Sample ID: 104815008

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Company : Applied P & Ch Laboratory
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Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-202-02
Sample ID: 104815009
Matrix: Soil
Collect Date: 19-NOV-03 09:25
Receive Date: 07-JAN-04
Collector: Client

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid											
Alpha		9.20	+/-2.13	1.70	4.00	pCi/g		ATH1 01/16/04	1907	303351	1
Beta		14.7	+/-1.87	1.92	10.0	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AWB	01/08/04	1448	301917

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 900.0 Modified	

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Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-202-02
Sample ID: 104815009

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-202-14
Sample ID: 104815010
Matrix: Soil
Collect Date: 19-NOV-03 09:45
Receive Date: 07-JAN-04
Collector: Client

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid											
Alpha		6.54	+/-1.86	2.05	4.00	pCi/g		ATH1 01/16/04	1907	303351	1
Beta		11.9	+/-1.70	1.87	10.0	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AWB	01/08/04	1448	301917

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 900.0 Modified	

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X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
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Chino, California 91710

Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-202-14
Sample ID: 104815010

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Company : Applied P & Ch Laboratory
Address : 13760 Magnolia Ave.
Chino, California 91710

Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-210-02
Sample ID: 104815011
Matrix: Soil
Collect Date: 19-NOV-03 10:15
Receive Date: 07-JAN-04
Collector: Client

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid											
Alpha		9.44	+/-2.29	1.93	4.00	pCi/g		ATH1 01/16/04	1907	303351	1
Beta		14.7	+/-1.99	2.15	10.0	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AWB	01/08/04	1448	301917

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 900.0 Modified	

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Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-210-02
Sample ID: 104815011

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Company : Applied P & Ch Laboratory
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Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-201-06
Sample ID: 104815012
Matrix: Soil
Collect Date: 19-NOV-03 11:00
Receive Date: 07-JAN-04
Collector: Client

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid											
Alpha		5.57	+/-1.81	1.86	4.00	pCi/g		ATH1 01/16/04	1907	303351	1
Beta		13.0	+/-1.78	1.80	10.0	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AWB	01/08/04	1448	301917

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 900.0 Modified	

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Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-201-06
Sample ID: 104815012

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-201-14
Sample ID: 104815013
Matrix: Soil
Collect Date: 19-NOV-03 11:30
Receive Date: 07-JAN-04
Collector: Client

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Gross A/B, solid												
Alpha		7.24	+/-1.85	2.08	4.00	pCi/g		ATH1	01/17/04	0229	303354	1
Beta		17.6	+/-1.79	1.89	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AWB	01/08/04	1454	301918

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 900.0 Modified	

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Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-201-14
Sample ID: 104815013

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Company : Applied P & Ch Laboratory
Address : 13760 Magnolia Ave.
Chino, California 91710

Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-209-04
Sample ID: 104815014
Matrix: Soil
Collect Date: 19-NOV-03 12:00
Receive Date: 07-JAN-04
Collector: Client

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid											
Alpha		9.45	+/-1.99	1.98	4.00	pCi/g		ATH1 01/17/04	0229	303354	1
Beta		15.3	+/-1.67	1.66	10.0	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AWB	01/08/04	1454	301918

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 900.0 Modified	

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Company : Applied P & Ch Laboratory
Address : 13760 Magnolia Ave.
Chino, California 91710

Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-209-04
Sample ID: 104815014

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Certificate of Analysis

Company : Applied P & Ch Laboratory
Address : 13760 Magnolia Ave.
Chino, California 91710

Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-209-14
Sample ID: 104815015
Matrix: Soil
Collect Date: 19-NOV-03 12:10
Receive Date: 07-JAN-04
Collector: Client

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid											
Alpha		6.46	+/-1.53	1.50	4.00	pCi/g		ATH1 01/17/04	0229	303354	1
Beta		11.1	+/-1.42	1.55	10.0	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AWB	01/08/04	1454	301918

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 900.0 Modified	

Notes:
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H Analytical holding time exceeded.
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
P The response between the confirmation column and the primary column is >40%D.
U Indicates the target analyte was analyzed for but not detected above the detection limit.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
Y QC Samples were not spiked with this compound.
h Sample preparation or preservation holding time exceeded.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Applied P & Ch Laboratory
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Chino, California 91710

Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-209-14
Sample ID: 104815015

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Reviewed by

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Certificate of Analysis

Company : Applied P & Ch Laboratory
Address : 13760 Magnolia Ave.
Chino, California 91710

Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-212-14
Sample ID: 104815016
Matrix: Soil
Collect Date: 18-NOV-03 12:00
Receive Date: 07-JAN-04
Collector: Client

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Gross A/B, solid												
Alpha		5.61	+/-1.49	1.43	4.00	pCi/g		ATH1	01/17/04	0229	303354	1
Beta		9.60	+/-1.37	1.56	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AWB	01/08/04	1454	301918

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 900.0 Modified	

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P The response between the confirmation column and the primary column is >40%D.
U Indicates the target analyte was analyzed for but not detected above the detection limit.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
Y QC Samples were not spiked with this compound.
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Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-212-14
Sample ID: 104815016

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Certificate of Analysis

Company : Applied P & Ch Laboratory
Address : 13760 Magnolia Ave.
Chino, California 91710

Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-212-06
Sample ID: 104815017
Matrix: Soil
Collect Date: 18-NOV-03 11:50
Receive Date: 07-JAN-04
Collector: Client

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid											
Alpha		7.09	+/-1.70	1.63	4.00	pCi/g		ATH1 01/17/04	0229	303354	1
Beta		13.3	+/-1.55	1.60	10.0	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AWB	01/08/04	1454	301918

The following Analytical Methods were performed

Method	Description	Analyst Comments
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Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-212-06
Sample ID: 104815017

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Certificate of Analysis

Company : Applied P & Ch Laboratory
Address : 13760 Magnolia Ave.
Chino, California 91710

Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-204-06
Sample ID: 104815018
Matrix: Soil
Collect Date: 18-NOV-03 11:20
Receive Date: 07-JAN-04
Collector: Client

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid											
Alpha		4.71	+/-1.68	2.27	4.00	pCi/g		ATH1 01/17/04	0229	303354	1
Beta		15.0	+/-1.70	1.84	10.0	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AWB	01/08/04	1454	301918

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 900.0 Modified	

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Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-204-06
Sample ID: 104815018

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-208-06
Sample ID: 104815019
Matrix: Soil
Collect Date: 18-NOV-03 11:20
Receive Date: 07-JAN-04
Collector: Client

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid											
Alpha		4.28	+/-1.37	1.61	4.00	pCi/g		ATH1 01/17/04	0229	303354	1
Beta		11.4	+/-1.51	1.77	10.0	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AWB	01/08/04	1454	301918

The following Analytical Methods were performed

Method	Description	Analyst Comments
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Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-208-06
Sample ID: 104815019

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Company : Applied P & Ch Laboratory
Address : 13760 Magnolia Ave.
Chino, California 91710

Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-208-14
Sample ID: 104815020
Matrix: Soil
Collect Date: 18-NOV-03 10:30
Receive Date: 07-JAN-04
Collector: Client

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid											
Alpha		6.60	+/-1.45	1.14	4.00	pCi/g		ATH1 01/17/04	0229	303354	1
Beta		10.2	+/-1.37	1.51	10.0	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AWB	01/08/04	1454	301918

The following Analytical Methods were performed

Method	Description	Analyst Comments
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Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-208-14
Sample ID: 104815020

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-204-14
Sample ID: 104815021
Matrix: Soil
Collect Date: 18-NOV-03 12:30
Receive Date: 07-JAN-04
Collector: Client

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid											
Alpha		3.81	+/-1.30	1.67	4.00	pCi/g		ATH1 01/18/04	1900	303354	1
Beta		7.94	+/-1.26	1.53	10.0	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AWB	01/08/04	1454	301918

The following Analytical Methods were performed

Method	Description	Analyst Comments
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Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-204-14
Sample ID: 104815021

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Company : Applied P & Ch Laboratory
Address : 13760 Magnolia Ave.
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Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-206-01
Sample ID: 104815022
Matrix: Soil
Collect Date: 18-NOV-03 13:50
Receive Date: 07-JAN-04
Collector: Client

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid											
Alpha		5.84	+/-1.55	1.63	4.00	pCi/g		ATH1 01/18/04	1900	303354	1
Beta		14.7	+/-1.61	1.63	10.0	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AWB	01/08/04	1454	301918

The following Analytical Methods were performed

Method	Description	Analyst Comments
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UI Uncertain identification for gamma spectroscopy.
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Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-206-01
Sample ID: 104815022

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-203-06
Sample ID: 104815023
Matrix: Soil
Collect Date: 18-NOV-03 14:20
Receive Date: 07-JAN-04
Collector: Client

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Gross A/B, solid												
Alpha		7.91	+/-1.82	1.57	4.00	pCi/g		ATH1	01/18/04	1900	303354	1
Beta		14.1	+/-1.61	1.63	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AWB	01/08/04	1454	301918

The following Analytical Methods were performed

Method	Description	Analyst Comments
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Company : Applied P & Ch Laboratory
Address : 13760 Magnolia Ave.
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Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-203-06
Sample ID: 104815023

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Company : Applied P & Ch Laboratory
Address : 13760 Magnolia Ave.
Chino, California 91710

Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-203-00
Sample ID: 104815024
Matrix: Soil
Collect Date: 18-NOV-03 14:10
Receive Date: 07-JAN-04
Collector: Client

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid											
Alpha		8.49	+/-1.79	1.57	4.00	pCi/g		ATH1 01/18/04	1901	303354	1
Beta		17.2	+/-1.71	1.61	10.0	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AWB	01/08/04	1454	301918

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 900.0 Modified	

Notes:
The Qualifiers in this report are defined as follows :

< Result is less than amount reported.
> Result is greater than amount reported.
B Target analyte was detected in the sample as well as the associated blank.
BD Flag for results below the MDC or a flag for low tracer recovery.
E Concentration of the target analyte exceeds the instrument calibration range.
H Analytical holding time exceeded.
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
P The response between the confirmation column and the primary column is >40%D.
U Indicates the target analyte was analyzed for but not detected above the detection limit.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
Y QC Samples were not spiked with this compound.
h Sample preparation or preservation holding time exceeded.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Applied P & Ch Laboratory
Address : 13760 Magnolia Ave.
Chino, California 91710

Report Date: January 21, 2004

Contact: Eric Wendland
Project: **(Level V)**

Client Sample ID: HAAF-ADA-203-00
Sample ID: 104815024

Project: APCL00201
Client ID: APCL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Jake Crook.

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Reviewed by