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CITY OF SUNNYVALE
SUNNYVALE WATER POLLUTION
CONTROL PLANT

**TECHNICAL MEMORANDUM
SITE INVESTIGATION ANALYSIS**

FINAL
April 2014



CITY OF SUNNYVALE
SUNNYVALE WATER POLLUTION CONTROL PLANT
TECHNICAL MEMORANDUM
SITE INVESTIGATION ANALYSIS

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TECHNICAL MEMORANDUM

SITE INVESTIGATION ANALYSIS

1.0 INTRODUCTION

The City of Sunnyvale's (City) overall goal for its Master Plan is to provide a long-term plan for the renovation of the existing Water Pollution Control Plant (WPCP). The renovated WPCP will allow the City to cost-effectively meet all regulatory and permit requirements through best practices, sustainability, and being good stewards of the land and public trust. The renovated facilities at the WPCP will address expected and new challenges by being reliable, flexible, and adaptable. This includes an understanding of potential hazardous site conditions with respect to soil or groundwater contamination at the WPCP which could impact future construction activities.

This Technical Memorandum was prepared to document soil and groundwater sampling conducted at the WPCP (Figure 1). This sampling was conducted to evaluate chemical concentrations in soil and groundwater to identify potential hazards to worker health from exposure to chemicals in soil.

2.0 FIELD INVESTIGATIONS

This section documents activities conducted in advance of the field activities and methods used to collect soil and groundwater samples at the WPCP.

2.1 Prefield Activities

Prior to performing drilling activities, a site walk was performed with the City to discuss potential soil boring locations. The potential soil boring locations were then cleared by an underground utility locator. A Site-Specific Health and Safety Plan was prepared, which described site-specific hazards and included driving directions to the nearest emergency room. Santa Clara Valley Water District (Water District) soil boring permits were not required as the Water District does not issue permits for soil borings shallower than 45 feet below ground surface (bgs).

2.2 Field Activities

On October 24 and 25, 2013, 13 soil borings were advanced at the locations depicted on Figure 2. The borings were continuously logged by HDR's field geologist using the Unified Soil Classification System (USCS). The field geologist observed significant changes in material penetrated, changes in drilling conditions, lithologic changes, the relative moisture content of soils, and water-producing zones. This record was used to prepare the detailed boring logs included in Appendix A.

Pitcher Drilling Company (Pitcher) advanced 11 soil borings to a maximum depth of 7 feet bgs and two soil borings to 20 feet bgs. To minimize damage to buried utilities, a hand

auger was used to advance the soil boring from ground surface to approximately 5 feet bgs. After hand augering to 5 feet bgs, a hydraulic drill rig was used to advance a Macrocore drive rod and acetate liner to the desired depth.

Soil samples were collected from 3 feet and 7 feet bgs and submitted for laboratory analysis. Soil samples collected from 3 feet bgs were collected from the hand auger barrel and packed into an acetate liner. Samples collected from 7 feet bgs were collected by cutting the acetate Macrocore liner at the intended depth. The ends of the acetate liner were capped with Teflon sheets and plastic end caps. The soil samples were labeled with the sample identification, the date, and time the sample was collected. The samples were placed in an ice chest cooled with ice and delivered to Alpha Analytical in Sparks, Nevada under chain of custody control.

Groundwater samples were collected from boring B2 at 20 feet bgs and from boring B10 at 5 feet bgs. Boring B5 was advanced to 20 feet bgs in an attempt to collect a groundwater sample; however groundwater was not encountered in this boring.

After reaching groundwater, the Macrocore drive rod was removed from the boring and a new ¾-inch diameter temporary well screen and casing were inserted in the boring. A clean stainless steel bailer was lowered through the temporary well casing to remove an aliquot of groundwater. The groundwater was decanted from the bailer into laboratory-supplied containers. The containers were labeled with the sample identification, sample date, and the time the sample was collected. The samples were placed in an ice chest cooled with ice and delivered to Alpha Analytical, Inc. in Sparks, Nevada under chain of custody control.

2.2.1 Field Quality Assurance

Disposable equipment such as tubing, well screening, and acetate Macrocore liners were used where possible. The use of disposable equipment, replaced in between sample locations, reduces the potential for cross contamination. All non-disposable field equipment was cleaned and decontaminated prior to being introduced into the sampling environment. Decontamination was accomplished by washing equipment with a non-phosphate detergent and then rinsing twice with tap water.

2.3 Laboratory Analysis

On October 26, 2013, soil and groundwater samples were submitted to Alpha Analytical, Inc. for the following analyses:

Soil samples collected from 3 feet bgs were analyzed for the following:

- Arsenic, barium, cadmium, chromium, lead, selenium, silver, and mercury (Resource Conservation and Recovery Act [RCRA] 8) by Environmental Protection Agency (EPA) Method 6020/200.8, and
- Semi-volatile organic compounds (SVOCs) by EPA Method 8270.

Soil samples collected from 7 feet bgs were analyzed for the following:

- Arsenic, barium, cadmium, chromium, lead, selenium, silver, and mercury by EPA Method 6020/200.8.

Soil samples collected from 3 feet bgs were analyzed at California Laboratory Services (CLS), in Rancho Cordova, California, for chlorinated pesticides/polychlorinated biphenyls (PCBs) by EPA Method 8081/8082.

Groundwater samples were analyzed by Alpha Analytical Inc. for the following:

- Total nitrogen by EPA Method 300.0/351,
- Total arsenic, barium, cadmium, chromium, lead, selenium, silver, and mercury by EPA Method 6020/200.8, and
- Total dissolved solids by EPA Method 160.1.

The soil analytical results are presented on Table 1 and the groundwater analytical results are presented on Table 2. The detailed laboratory analytical reports are presented in Appendix B.

2.4 Investigation-Derived Waste Disposal

Decontamination water was contained in five gallon buckets and disposed of offsite by Pitcher. Soil generated during the drilling activities was spread on the ground surface adjacent to each soil boring.

2.5 Soil Boring Survey

The location of the soil borings were surveyed to submeter accuracy with a global position system (GPS) system receiver. The coordinates of the soil boring locations are provided on the soil boring logs in Appendix A.

2.6 Deviations from the Sampling and Analysis Plan

The *Sampling and Analysis Plan for Site Characterization* (HDR, 2013) proposed collection of three groundwater samples from three borings advanced to 20 feet bgs. Groundwater was encountered at 3.5 feet bgs in boring B10, therefore this boring was not advanced to the proposed depth. Boring B5 was advanced to 20 feet bgs; however groundwater was not encountered and a groundwater sample was not collected.

3.0 RESULTS

Lithology was generally inconsistent throughout the WPCP, which is to be expected since the WPCP was constructed on fill soil and graded during construction. In general, shallow soils consist primarily of medium plasticity clays, silty gravel or sandy silt to approximately 4 feet bgs.

Silty gravel was encountered to a depth of 12 feet bgs in boring B5. Borings B2, advanced to 21 feet bgs, consisted of clay with trace sand and gravel from 3.5 feet bgs to 21 feet bgs. Boring B5 consisted of interbedded lenses of silt and clay from 12 feet bgs to 20 feet bgs. Groundwater was encountered in borings B2, B9, B10, and B11. The depth to groundwater ranged from 3 feet bgs in boring B10 to 20 feet bgs in boring B2. A more detailed geotechnical investigation is being developed as part of a separate site background technical memorandum.

3.1 Soil Analytical Results

SVOCs and pesticides were not detected in soil samples above laboratory reporting limits. Metals detected in soil included arsenic, barium, cadmium, chromium, lead, and mercury. Aroclor 1260, a PCB constituent, was only detected in the sample collected from 3 feet bgs in boring B6. Arsenic was detected at 10 milligrams per kilogram (mg/Kg) in boring B1 and 28 mg/kg in boring B4. Arsenic was detected in these two samples at equal to or greater than the 10 mg/Kg San Francisco Bay Regional Water Quality Control Board (Water Board) Environmental Screening Level (ESL) for construction/trench workers. All other detected analytes were less than their respective ESL. The Water Board states that "ESLs are considered to be conservative. Under most circumstances, and within the limitations described, the presence of a chemical in soil, soil gas or groundwater at concentrations below the corresponding ESL can be assumed to not pose a significant, long-term (chronic) threat to human health and the environment." The Water Board further states that "the presence of a chemical at concentrations in excess of an ESL does not necessarily indicate adverse effects on human health or the environment, rather that additional evaluation is warranted." Further information regarding use/applicability and ESL concentrations can be viewed on the Water Board website (Water Board, 2013)

To evaluate whether soil contains constituents at concentrations sufficient to be classified as a California hazardous waste, the laboratory analytical results were compared to the Total Threshold Limit Concentrations (TTLC) listed in Title 22, Chapter 11, Article 3 of the California Code of Regulations (CCR) and included in Appendix C for reference. The TTLC analysis determines the total concentration of each target analyte in a sample, and is generally performed first. When any target analyte exceeds the TTLC limits the waste is classified as hazardous, and further testing is not required. If the TTLC concentration is 10 times or greater than the Soluble Threshold Limit Concentration (STLC) listed in Title 22, Chapter 11, Article 3 of the CCR, then STLC analysis is performed to simulate conditions that may be present at a landfill. If an analyte is detected at a concentration greater than the TTLC or the STLC limits, the waste is considered hazardous by California standards.

All analytes were detected at concentrations less than their TTLCs. Barium, chromium, and lead were detected in soil samples at ten times the STLC limit; therefore, STLC analyses was performed on barium, chromium, and lead. STLC analysis did not yield barium, chromium, or lead at concentrations greater than their STLC limits; therefore, the soil is not hazardous. The

soil sample analytical results are presented in Table 1, the laboratory analytical results are included in Appendix B and the TTLC/STLC limits are presented in Appendix C.

3.2 Groundwater Analytical Results

Groundwater samples collected from borings B2 and B10 yielded nitrate, total dissolved solids, and total metals (arsenic, cadmium, chromium, barium, selenium, silver, lead, and mercury) above laboratory reporting limits. ESLs have not been established to protect construction/trench workers from exposure to chemicals in groundwater. Therefore the groundwater analytical results were compared to the Maximum Concentration Allowable table presented in Section 12.12.120 of Ordinance No. 2896-09 of the Sunnyvale Municipal Code. This ordinance was established to ensure that water discharged to the publically owned treatment works (POTW) does not interfere with POTW operation or pass through the POTW with inadequate treatment. As presented on Table 2, barium was the only analyte which exceeded the Maximum Concentration Allowable.

3.3 Laboratory Quality Control

Samples were transferred to Alpha Analytical, Inc. under chain of custody control. Alpha Analytical, Inc. and the subcontracted laboratory CLS performed the requested analysis within appropriate sample holding times. Laboratory quality control (QC) includes blank analyses, laboratory control sample (LCS), laboratory control sample duplicate (LCSD), matrix spike (MS), and matrix spike duplicate (MSD). In general, the laboratory QC was within the laboratory-established method control limits; however, the laboratory qualified the results with the following:

- The chromium recoveries in the soil MS and MSD of 196 percent and 131 percent were greater than the laboratory-established control limits of 75 to 125 percent recovery. However, the LCS recovery was acceptable. The MS/MSD results suggest a possible matrix effect, such as non-homogeneous contamination of the sample. As the sample result is well below the ESLs and TTLCs, the result is considered usable for the project goals.
- The barium recovery in the soil MS of 68 percent was less than the laboratory-established control limits of 75 to 125 percent. However, the LCS recovery was acceptable. The MS result suggests a possible matrix effect, such as non-homogeneous contamination of the sample. As the sample result is well below the ESLs and TTLCs, the result is considered usable for the project goals.
- The heptachlor recovery in the soil MS of 167 percent was greater than the laboratory-established control limits of 36 to 155 percent, and the RPD of 58 percent was greater than the control limit of 35 percent. The recovery in the MSD was within control limits, and the recoveries in the LCS and LCSD were within control limits. The MS/MSD results suggest a possible matrix effect, such as non-homogeneous contamination of the sample.

As the non-detect sample result reporting limit of 0.050 mg/Kg is well below the ESL of 3.6 mg/Kg, the result is considered usable for the project goals.

Despite these qualifications, the data set is considered usable and reliable for this project.

3.4 Waste Profiling for Disposal

It is likely that improvements to the WPCP will generate soil that must be disposed offsite. The Newby Island Landfill and the Altamont Landfill were contacted regarding acceptance of excess soil generated from the WPCP improvements. Based on the analyses conducted, the soil meets the acceptance criteria for Newby Island Landfill and the Altamont Landfill (Appendix C); however, Altamont Landfill stated that the following additional analyses are required to profile the waste for disposal:

- California Accreditation Manual 17 metals (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc) with STLC analysis as needed,
- Total petroleum hydrocarbons (TPH) as gasoline, TPH as diesel, TPH as oil, and
- Volatile organic compounds.

Because there is no large-scale storage of petroleum products at the site and no reason to suspect that the soil is adversely impacted with metals, the WPCP may be able to substitute its site-specific knowledge for the Altamont Landfill's request for additional analyses. This would be accomplished by completing the landfill's waste profile form prior to disposal of soils at the Altamont Landfill.

3.5 Construction Worker Exposure Assessment

Constituents in soil can pose a health risk to construction/trench workers via direct contact (ingestion, inhalation, dermal contact). To evaluate whether constituents detected in soil at the WPCP presents an unacceptable health risk, the following was performed:

3.5.1 Use of ESLs to Identify Whether an Unacceptable Risk Exists

Soil sample analytical results were directly compared to the Water Board ESLs for construction/trench worker. Arsenic in boring B1 and boring B4 meet or exceeded the 10 mg/Kg ESL. All other analytes were detected at concentrations less than their ESL. Therefore, based on this screening level assessment, arsenic may present an unacceptable health risk to construction/trench worker; however, the Water Board states "The presence of chemicals at concentrations above the ESLs does not necessarily indicate that a significant risk exists at the site. It does generally indicate that additional evaluation of potential environmental concerns is warranted."

3.5.2 Calculating the Site Specific Health Risk

To further evaluate whether chemicals in soil pose an unacceptable construction/trench worker health risk, the United States Environmental Protection Agency's (US EPA) ProUCL software was used to calculate the upper 95 percent confidence level of the mean which determined a site-wide exposure point concentration for arsenic (6.41 mg/Kg), barium (404 mg/Kg), chromium (67.3 mg/Kg), and lead (24.4 mg/Kg) (Appendix D). The exposure point concentrations represent a conservative estimate of the chemical concentration that the construction/trench worker would be exposed to while performing improvements to the WPCP. The ProUCL calculated exposure point concentrations are less than their respective construction/trench worker ESL; therefore, constituents in soil do not pose an unacceptable health risk.

To calculate the excess cancer risk, non cancer risk, and to estimate whether multiple constituents detected in soil will have an adverse cumulative effect on a construction/trench worker, the exposure point concentrations were input into the US EPA's online Regional Screening Level (RSL) calculator. The RSL calculator estimated an excess cancer risk for a construction/trench worker of 2.66×10^{-7} and a noncancer risk of 0.01 (Appendix D). These values are less than the US EPA's ceiling cancer risk of one in one million and target hazard quotient of 1.0; therefore, the cumulative effect from exposure to constituents detected in soil does not pose an unacceptable health risk to construction/trench workers.

4.0 CONCLUSIONS

The results from this site investigation indicate the following:

1. Based on the field testing performed, analytes were detected at concentrations less than the TTLC and STLC limits established in Title 22, Chapter 11, Article 3 of the California Code of Regulations; therefore, soil at the WPCP is classified as nonhazardous by State standards,
2. With the limitations described above, the soil at the WPCP meets the acceptance criteria for Newby Island Landfill and the Altamont Landfill,
3. Soil at the WPCP does not pose an unacceptable risk to construction/trench workers, and
4. Analytes detected in groundwater included total nitrogen, total dissolved solids, arsenic, barium, cadmium, chromium, lead, selenium, silver, and mercury.

5.0 REFERENCES

California Code of Regulations (CCR), Title 22, Chapter 11, Article 3.

HDR, 2013 *Sampling and Analysis Plan*, September.

San Francisco Bay Regional Water Quality Control Board (Water Board) 2013, Environmental Screening Levels,
http://www.waterboards.ca.gov/rwqcb2/water_issues/programs/esl.shtml, December.

United States Environmental Protection Agency, Regional Screening Levels (RSL) for Chemical Concentrations at Superfund Sites, RSL Calculator, http://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search.

United States Environmental Protection Agency, ProUCL Software version 5.0.00,
<http://www.epa.gov/osp/hstl/tsc/software.htm>.

Table 1. Soil Analytical Results
Sunnyvale Water Pollution Control Plant
1444 Borregas Avenue, Sunnyvale, California

				Total Concentrations										Soluble Concentrations			
				Ag	As	Ba	Cd	Cr	Hg	Pb	Se	Aroclor 1260	Pesticides	SVOCs	Ba	Cr	Pb
Units				mg/Kg								µg/Kg			mg/L		
EPA Method				SW6020/SW6020A								8082A	8081A	SW8270C	SW6020/ SW6020A		
Boring Location	Sample ID	Sample Date	Depth (fbgs)														
B1	B01-03-SO-10242013	10/24/2013	3	<1.0	4.2	320	<1.0	60	<0.20	6.5	<2.0	<20	ND	ND	NA	NA	NA
	B01-07-SO-10242013	10/24/2013	7	<1.0	10	310	<1.0	65	<0.20	9	<2.0	NA	NA	NA	NA	NA	NA
B2	B02-03-SO-10252013	10/25/2013	3	<1.0	4.6	420	<1.0	57	<0.20	5.2	<2.0	<20	ND	ND	NA	NA	NA
	B02-07-SO-10252013	10/25/2013	7	<1.0	3.5	150	<1.0	57	<0.20	5	<2.0	NA	NA	NA	NA	NA	NA
B3	B03-03-SO-10242013	10/24/2013	3	<1.0	5.1	97	<1.0	32	<0.20	4.1	<2.0	<20	ND	ND	NA	NA	NA
	B03-07-SO-10242013	10/24/2013	7	<1.0	2.6	120	<1.0	52	<0.20	14	<2.0	NA	NA	NA	NA	0.67	NA
B4	B04-03-SO-10242013	10/24/2013	3	1.3	28	390	<1.0	60	<0.20	170	<2.0	<20	ND	ND	NA	NA	0.17
	B04-07-SO-10242013	10/24/2013	7	<1.0	<1.0	22	<1.0	5.7	<0.20	1.2	<2.0	NA	NA	NA	NA	NA	NA
B5	B05-03-SO-10252013	10/25/2013	3	<1.0	3.7	110	<1.0	120	<0.20	4.9	<2.0	<20	ND	ND	NA	0.13	NA
	B05-07-SO-10252013	10/25/2013	7	<1.0	2.2	150	<1.0	72	<0.20	3.3	<2.0	NA	NA	NA	NA	NA	NA
B6	B06-03-SO-10242013	10/24/2013	3	<1.0	7.8	210	<1.0	74	<0.20	21	<2.0	28	ND	ND	NA	NA	NA
	B06-07-SO-10242013	10/24/2013	7	<1.0	4.6	130	<1.0	85	<0.20	15	<2.0	NA	NA	NA	NA	0.17	NA
B7	B07-03-SO-10242013	10/24/2013	3	<1.0	3.5	140	<1.0	62	<0.20	9.2	<2.0	<20	ND	ND	NA	<0.10	NA
	B07-07-SO-10242013	10/24/2013	7	<1.0	<1.0	9.9	<1.0	4	<0.20	<1.0	<2.0	NA	NA	NA	NA	NA	NA
B8	B08-03-SO-10242013	10/24/2013	3	<1.0	4	150	<1.0	73	<0.20	14	<2.0	<20	ND	ND	NA	NA	NA
	B08-07-SO-10242013	10/24/2013	7	<1.0	<1.0	32	<1.0	59	<0.20	<1.0	<2.0	NA	NA	NA	NA	NA	NA
B9	B09-03-SO-10242013	10/24/2013	3	<1.0	1.8	120	<1.0	54	<0.20	4.9	<2.0	<20	ND	ND	NA	NA	NA
	B09-07-SO-10242013	10/24/2013	7	<1.0	3.7	130	<1.0	64	<0.20	6	<2.0	NA	NA	NA	NA	NA	NA

Table 1. Soil Analytical Results (Continued)

Sunnyvale Water Pollution Control Plant
1444 Borregas Avenue, Sunnyvale, California

				Total Concentrations									Soluble Concentrations				
				Ag	As	Ba	Cd	Cr	Hg	Pb	Se	Aroclor 1260	Pesticides	SVOCs	Ba	Cr	Pb
Units				mg/Kg									µg/Kg				
EPA Method				SW6020/SW6020A									8082A 8081A SW8270C				
Boring Location	Sample ID	Sample Date	Depth (fbgs)														
B10	B10-03-SO-10252013	10/25/2013	3	<1.0	3.4	140	<1.0	68	<0.20	6.3	<2.0	<20	ND	ND	NA	NA	NA
	B10-07-SO-10252013	10/25/2013	7	<1.0	4	150	<1.0	62	<0.20	5.8	<2.0	NA	NA	NA	NA	NA	NA
B11	B11-03-SO-10242013	10/24/2013	3	<1.0	5.6	420	<1.0	78	<0.20	8.5	<2.0	<20	ND	ND	NA	0.16	NA
	B11-07-SO-10242013	10/24/2013	7	<1.0	4.2	120	<1.0	62	<0.20	6.2	<2.0	NA	NA	NA	NA	NA	NA
B12	B12-03-SO-10242013	10/24/2013	3	<1.0	4.3	160	<1.0	60	<0.20	9.2	<2.0	<20	ND	ND	NA	NA	NA
	B12-07-SO-10242013	10/24/2013	7	<1.0	3.8	85	<1.0	41	<0.20	4.2	<2.0	NA	NA	NA	NA	NA	NA
B13	B13-03-SO-10242013	10/24/2013	3	<1.0	2.2	1,900	<1.0	67	0.27	8.6	<2.0	<20	ND	ND	9.7	NA	NA
	B13-07-SO-10242013	10/24/2013	7	<1.0	3.7	1,100	<1.0	61	0.36	7.4	2.3	NA	NA	NA	8.5	NA	NA
Water Board ESL (mg/Kg)				1,500	10	61,000	110	NE	27	320	1,500	6,700	varies	varies	NA	NA	NA
TTLc (mg/Kg)				500	500	10,000	100	500	20	1000	100	0.050	varies	varies	NA	NA	NA
STLC (mg/L)				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100	5	5

Notes:

Ag: Silver Cr: Chromium Pb: Lead < : analyte not detected greater than
As: Arsenic Hg: Mercury STLC: Soluble Threshold Limit Concentration. NE: not established
Ba: Barium mg/Kg: milligrams per kilogram Se: Selenium ND: not detected, reporting limit varied.
Cd: Cadmium mg/L: milligrams per liter µg/Kg: micrograms per kilogram NA: not applicable

TTLc: California Total Threshold Limit Concentration. California Code of Regulations, Title 22, Chapter 11, Article 3.

Water Board ESL: December 2013 San Francisco Bay Regional Water Quality Control Board Environmental Screening Level for construction/trench worker exposure scenario

Bold values indicate analyte was detected above Water Board ESL

Depth: feet below ground surface sample was collected

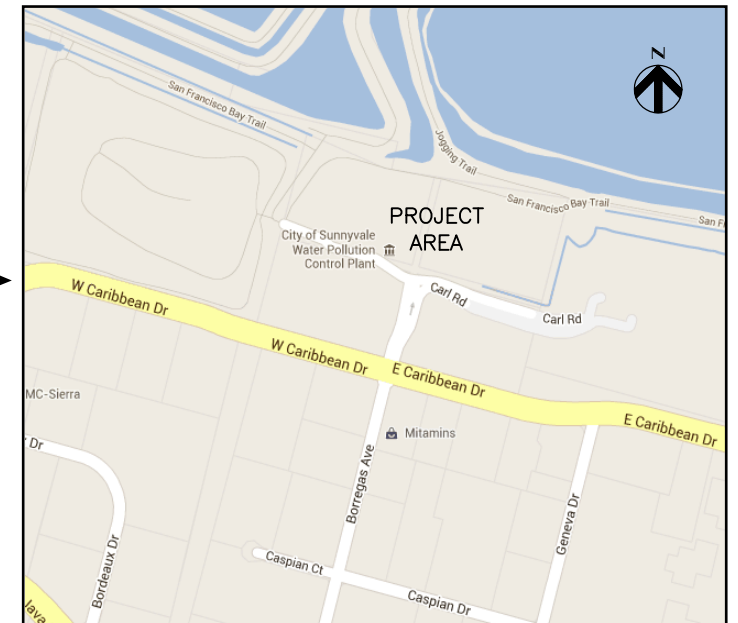
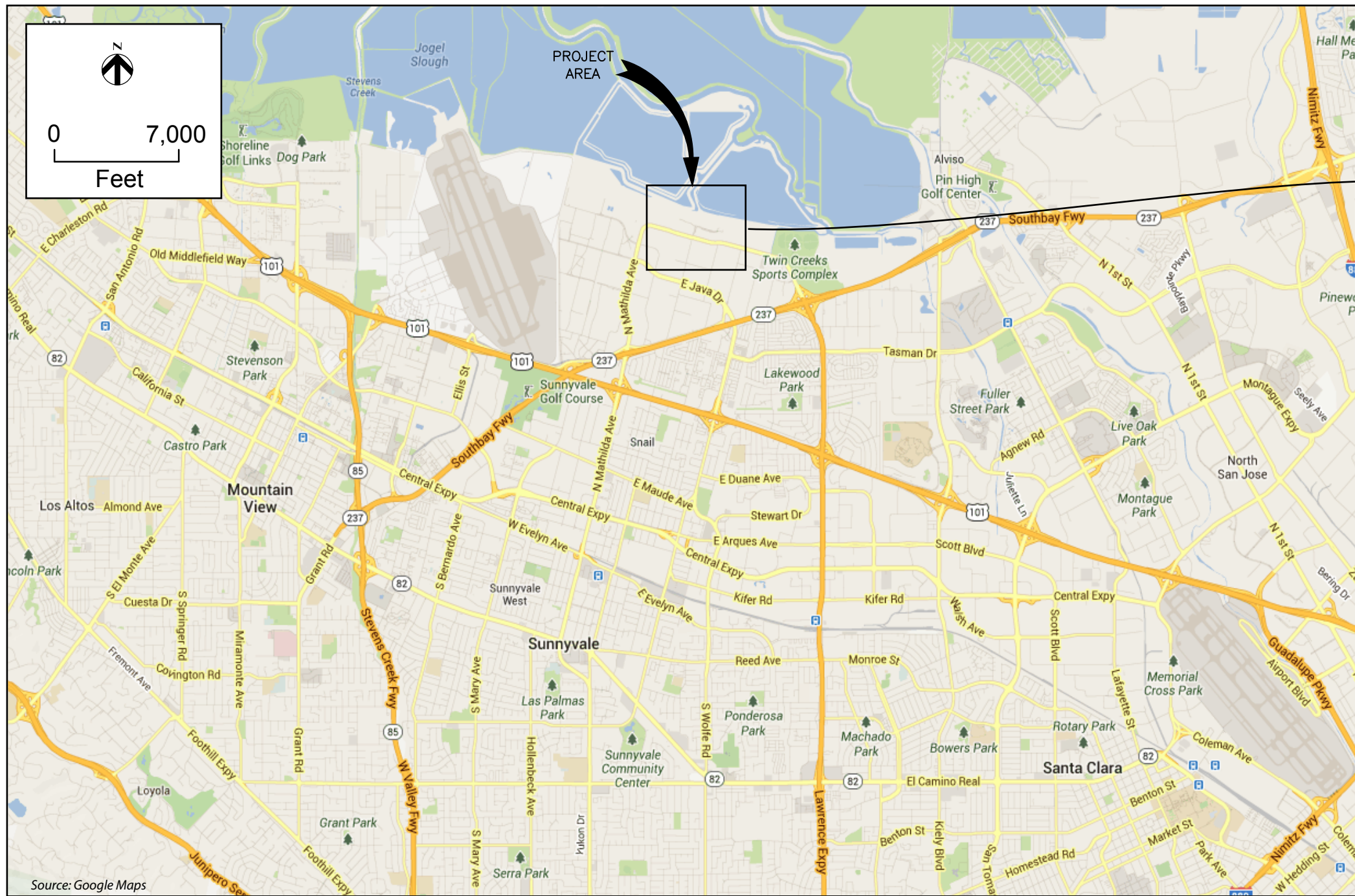


Figure 1
LOCATION MAP
 SUNNYVALE WATER POLLUTION CONTROL PLANT
 1444 BORREGAS AVE, SUNNYVALE CA.

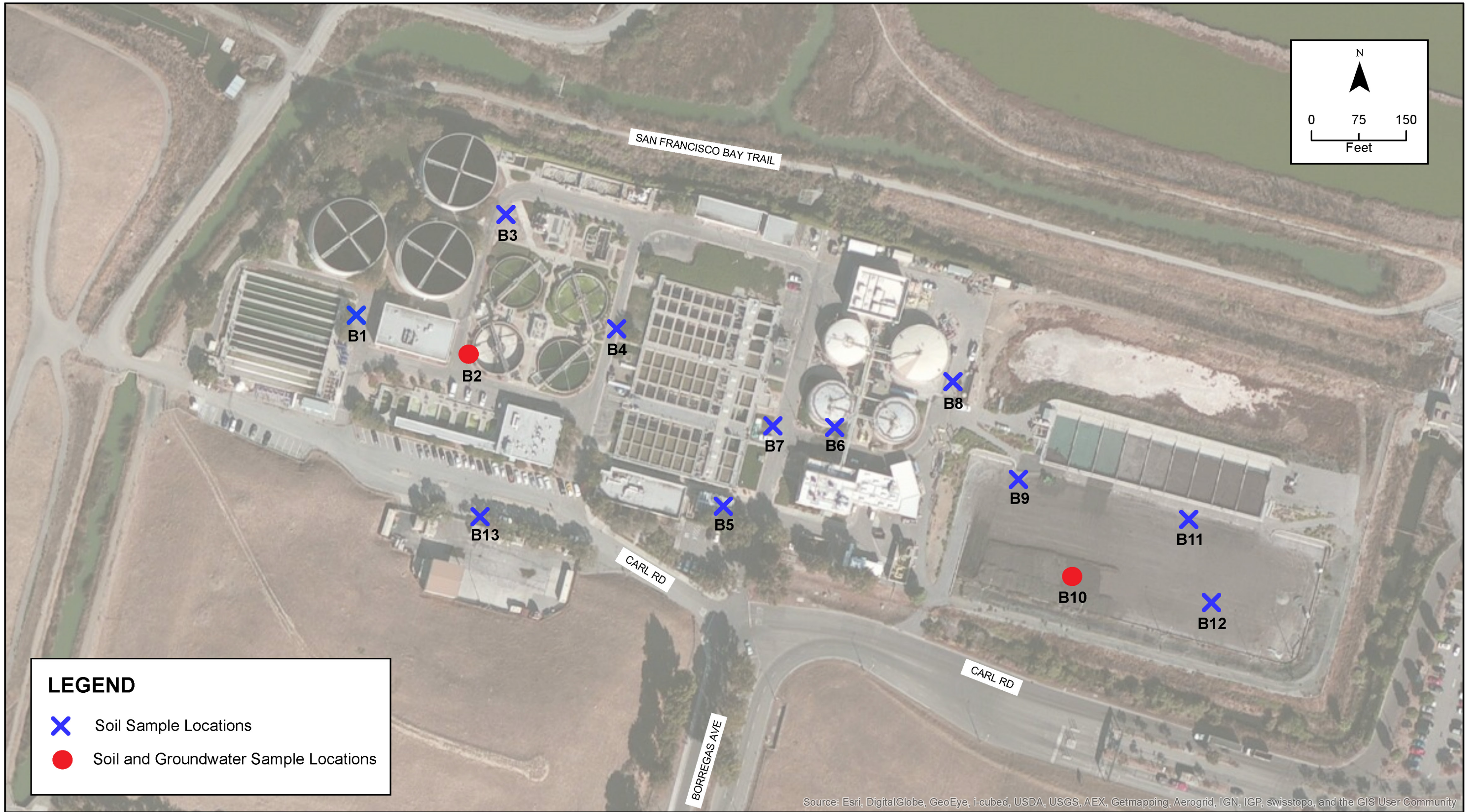


Figure 2
BORING LOCATION MAP
 SUNNYVALE WATER POLLUTION CONTROL PLANT
 1444 BORREGAS AVE, SUNNYVALE CA.

APPENDIX A

Boring Logs



Project Name: Sunnyvale WPCP

Project Number: 028-213932-021

Location: Sunnyvale, CA

Boring Log

Boring ID: B1

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Drilling Company: Pitcher
Drill Rig Type: Power Probe
Drilling Method: Direct Push
Drilled By: Will Stewart

Date Started: 10/24/13
Date Completed: 10/24/13
Boring Diameter: 2"
Logged By: Jacob Ruffing

Total Depth: 7'
Northing: 4141844.02m
Easting: 586940.57m

Lithology	Sample	Description
		ML: gravelly sandy silt, very dark grayish brown (10YR3/2), fine gravel and sand grains, dry
		CL: silty clay with trace sand, very dark grayish brown, dry
		GM: sandy silty gravel, dark grayish brown (10YR 4/2), fine to coarse sand and gravel, subrounded to angular sand and gravel, dry
		SW: sand, light olive brown (2.5Y 5/3), fine to medium grain, well graded, subrounded, dry
		ML: clayey silt with trace gravel, firm, fine grain gravel, dry
		No water encountered



Project Name: Sunnyvale WPCP

Project Number: 028-213932-021

Location: Sunnyvale, CA

Boring Log

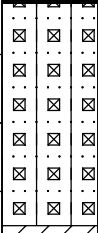
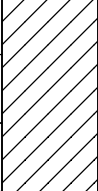
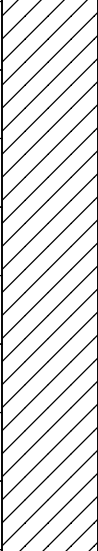
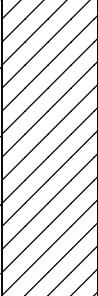


Boring ID: B2

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Drilling Company: Pitcher
Drill Rig Type: Power Probe
Drilling Method: Direct Push
Drilled By: Will Stewart

Date Started: 10/25/13
Date Completed: 10/25/13
Boring Diameter: 2"
Logged By: Jacob Ruffing

Total Depth: 21'
Northing: 4141832.33m
Easting: 586982.47m

Lithology	Sample	Description
0		Asphalt
		GM: silty clay with trace sand, very dark grayish brown, dry
2		
4		CL: clay with trace sand and gravel, brown (10YR 4/3), firm, low to medium plasticity, dry
		
6		
		CL: sandy clay, black (10YR 2/1), fine to coarse grained subrounded sand, soft, very low plasticity, dry
		
18		
20	 	CL: clay with trace sand, black, hard to very hard, low plasticity, moist soft, wet



Project Name: Sunnyvale WPCP

Project Number: 028-213932-021

Location: Sunnyvale, CA

Boring Log

Boring ID: B3

Page 1 of 1

Drilling Company: Pitcher
Drill Rig Type: Power Probe
Drilling Method: Direct Puch
Drilled By: Will Stewart

Date Started: 10/24/13
Date Completed: 10/24/13
Boring Diameter: 2"
Logged By: Jacob Ruffing

Total Depth: 6.5'
Northing: 4141883.48m
Easting: 586997.75m

Lithology	Sample	Description
		GM: silty sandy gravel, brown (10YR 4/3), dry
		SW: sand with trace silt, light olive brown (2.5Y 5/3), well graded, dry
		CL: clay, dark brown (10YR 3/3), dry
		GM: silty sandy gravel, dark gray (10YR 4/1), fine to coarse sand and gravel, gravel up to 1", dry
		no water encountered
		refusal at 6.5'



Project Name: Sunnyvale WPCP

Project Number: 028-213932-021

Location: Sunnyvale, CA

Boring Log

Boring ID: B4

Page 1 of 1

Drilling Company: Pitcher
Drill Rig Type: Power Probe
Drilling Method: Direct Puch
Drilled By: Will Stewart

Date Started: 10/24/13
Date Completed: 10/24/13
Boring Diameter: 2"
Logged By: Jacob Ruffing

Total Depth: 7'
Northing: 4141840.98m
Easting: 587040.77m

Lithology	Sample	Description
		Asphalt and road base
		CL: clay with trace sand and gravel, dark gray (2.5Y 4/1), firm, medium to high plasticity, dry
		GM: silty clayey gravel with trace sand, very dark gray (2.5Y 3/1), gravel up to 1", dry
		SP: sand with trace silt, light olive brown (2.5Y 5/3), fine to medium grains, subrounded, dry
		no water encountered



Project Name: Sunnyvale WPCP

Project Number: 028-213932-021

Location: Sunnyvale, CA

Boring Log

Boring ID: B5

Page 1 of 1

Drilling Company: Pitcher
Drill Rig Type: Power Probe
Drilling Method: Direct Push
Drilled By: Will Stewart

Date Started: 10/25/13
Date Completed: 10/25/13
Boring Diameter: 2"
Logged By: Jacob Ruffing

Total Depth: 20'
Northing: 4141773.59m
Easting: 587082.10m

Lithology	Sample	Description
		<p>GM: silty gravel with trace sand, dark yellow brown (10YR 4/4), medium density, gravel up to 2", dry</p> <p>very dark brown silt to coarse grained sand material, possibly weathered volcanics</p>
		<p>CL: gravelly clay, black (2.5Y 2.5/1), gravel up to 0.8", firm, high plasticity, dry</p>
		<p>ML: gravelly silt, olive brown (2.5Y 4/3), firm, very low plasticity, dry</p>
		<p>CL: clay with trace gravel, gray brown (2.5Y 5/2), very hard, medium to high plasticity, moist, gravel up to 0.25"</p> <p>no water encountered</p>



Project Name: Sunnyvale WPCP

Project Number: 028-213932-021

Location: Sunnyvale, CA

Boring Log

Boring ID: B6

Page 1 of 1

Drilling Company: Pitcher
Drill Rig Type: Power Probe
Drilling Method: Direct Push
Drilled By: Will Stewart

Date Started: 10/24/13
Date Completed: 10/24/13
Boring Diameter: 2"
Logged By: Jacob Ruffing

Total Depth: 7'
Northing: 4141848.42m
Easting: 587123.65m

Lithology	Sample	Description
		<p data-bbox="321 579 1256 611">GM: silty sandy gravel with clay, very dark grayish brown (10YR 3/2), gravel up to 2", dry</p> <p data-bbox="321 1906 553 1938">no water encountered</p>



Project Name: Sunnyvale WPCP

Project Number: 028-213932-021

Location: Sunnyvale, CA

Boring Log

Boring ID: B7

Page 1 of 1

Drilling Company: Pitcher
Drill Rig Type: Power Probe
Drilling Method: Direct Push
Drilled By: Will Stewart

Date Started: 10/24/13
Date Completed: 10/24/13
Boring Diameter: 2"
Logged By: Jacob Ruffing

Total Depth: 7'
Northing: 4141803.96m
Easting: 587102.72m

Lithology	Sample	Description
0		Asphalt
		<p data-bbox="321 632 1463 688">GM: silty/clayey sandy gravel, very dark grayish brown (10YR 3/2), poorly graded, fine to coarse sands and gravel, dry</p> <p data-bbox="321 982 724 1016">clay content increases with depth to 6'</p>
6		SP: sand with trace silt, light olive brown (2.5Y 5/3), fine to medium grains, subrounded, dry
		no water encountered



Project Name: Sunnyvale WPCP

Project Number: 028-213932-021

Location: Sunnyvale, CA

Boring Log

Boring ID: B8

Page 1 of 1

Drilling Company: Pitcher
Drill Rig Type: Power Probe
Drilling Method: Direct Push
Drilled By: Will Stewart

Date Started: 10/24/13
Date Completed: 10/24/13
Boring Diameter: 2"
Logged By: Jacob Ruffing

Total Depth: 7'
Northing: 4141821.17
Easting: 587170.41m

Lithology	Sample	Description
0		Asphalt
		GM: silty gravel with trace sand, very dark grayish brown (10YR 3/2), gap graded, gravel up to, dry
2		ML: silt with trace sand, dark reddish brown (5YR 3/3), firm, very low plasticity, fine to medium grain sand, subrounded to subangular, dry
4		ML: clayey silt with trace sand, dark reddish brown (5YR 3/3), firm low to medium plasticity, medium grain sand, subrounded, dry
6		no water encountered



Project Name: Sunnyvale WPCP

Project Number: 028-213932-021

Location: Sunnyvale, CA

Boring Log

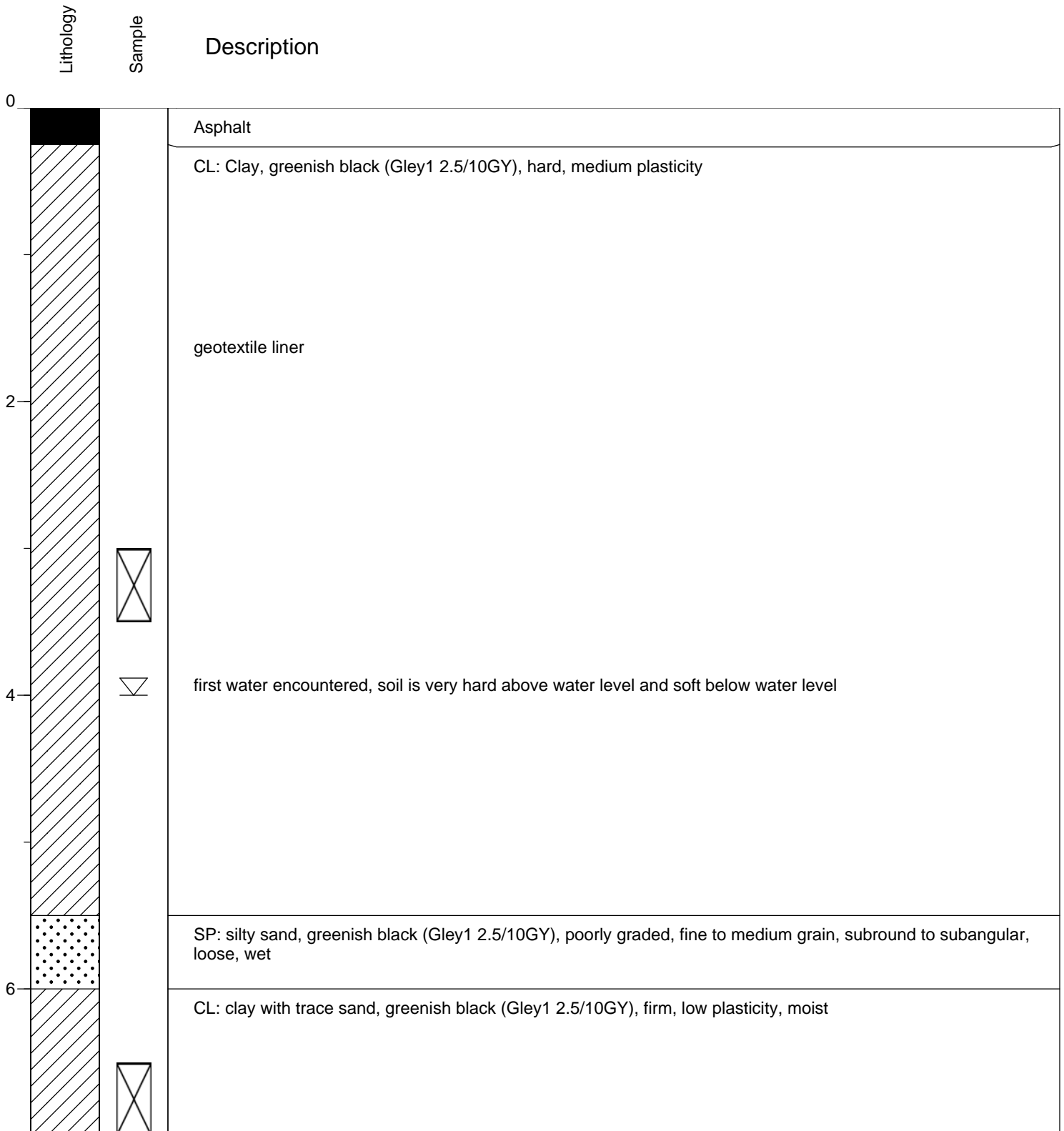
Boring ID: B9

Page 1 of 1

Drilling Company: Pitcher
Drill Rig Type: Power Probe
Drilling Method: Direct Push
Drilled By: Will Stewart

Date Started: 10/24/13
Date Completed: 10/24/13
Boring Diameter: 2"
Logged By: Jacob Ruffing

Total Depth: 7'
Northing: 4141784.38m
Easting: 587196.23m





Project Name: Sunnyvale WPCP

Project Number: 028-213932-021

Location: Sunnyvale, CA

Boring Log

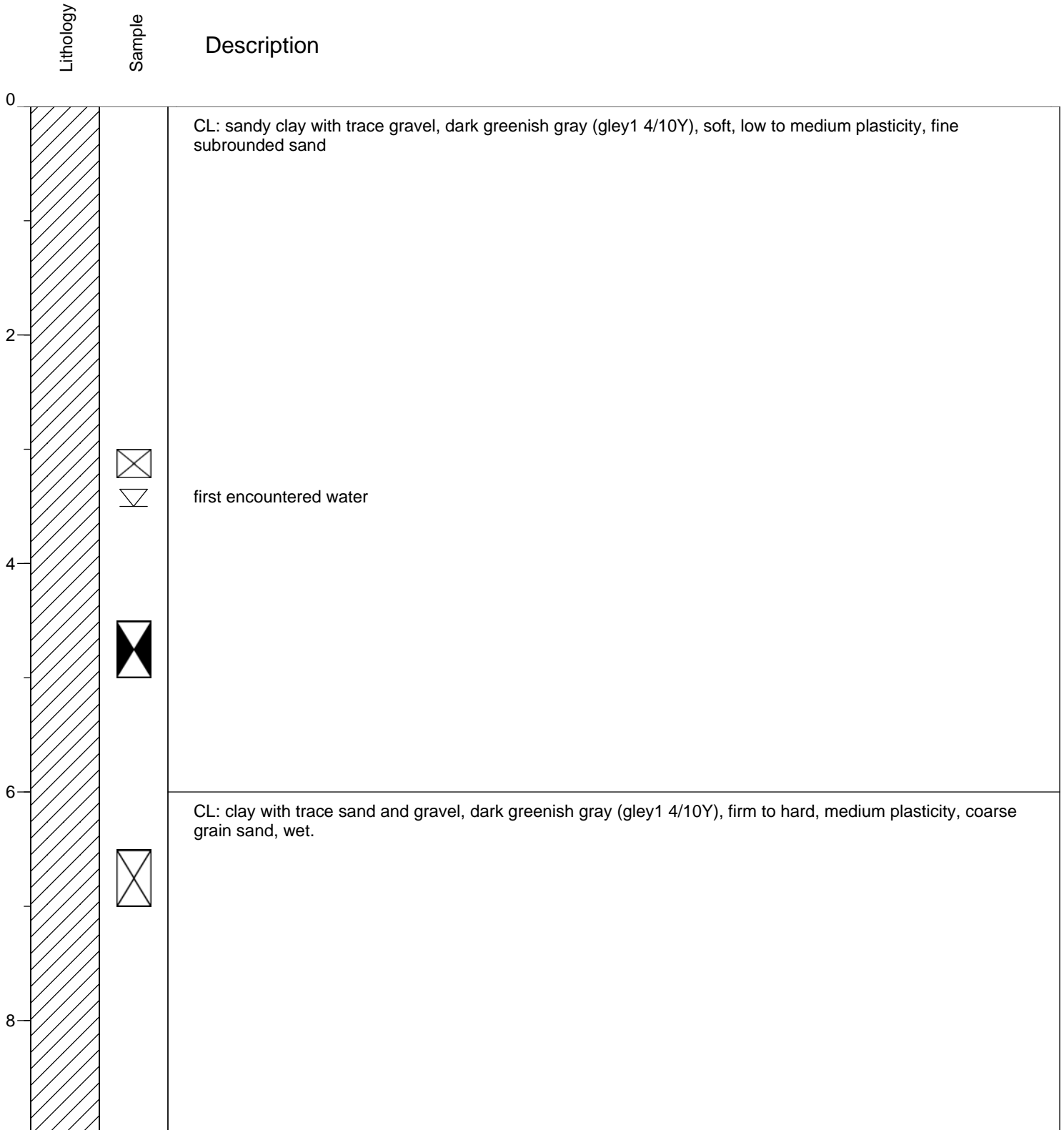
Boring ID: B10

Page 1 of 1

Drilling Company: Pitcher
Drill Rig Type: Power Probe
Drilling Method: Direct Push
Drilled By: Will Stewart

Date Started: 10/25/13
Date Completed: 10/25/13
Boring Diameter: 2"
Logged By: Jacob Ruffing

Total Depth: 9'
Northing: 4141748.73m
Easting: 587209.56m





Project Name: Sunnyvale WPCP

Project Number: 028-213932-021

Location: Sunnyvale, CA

Boring Log

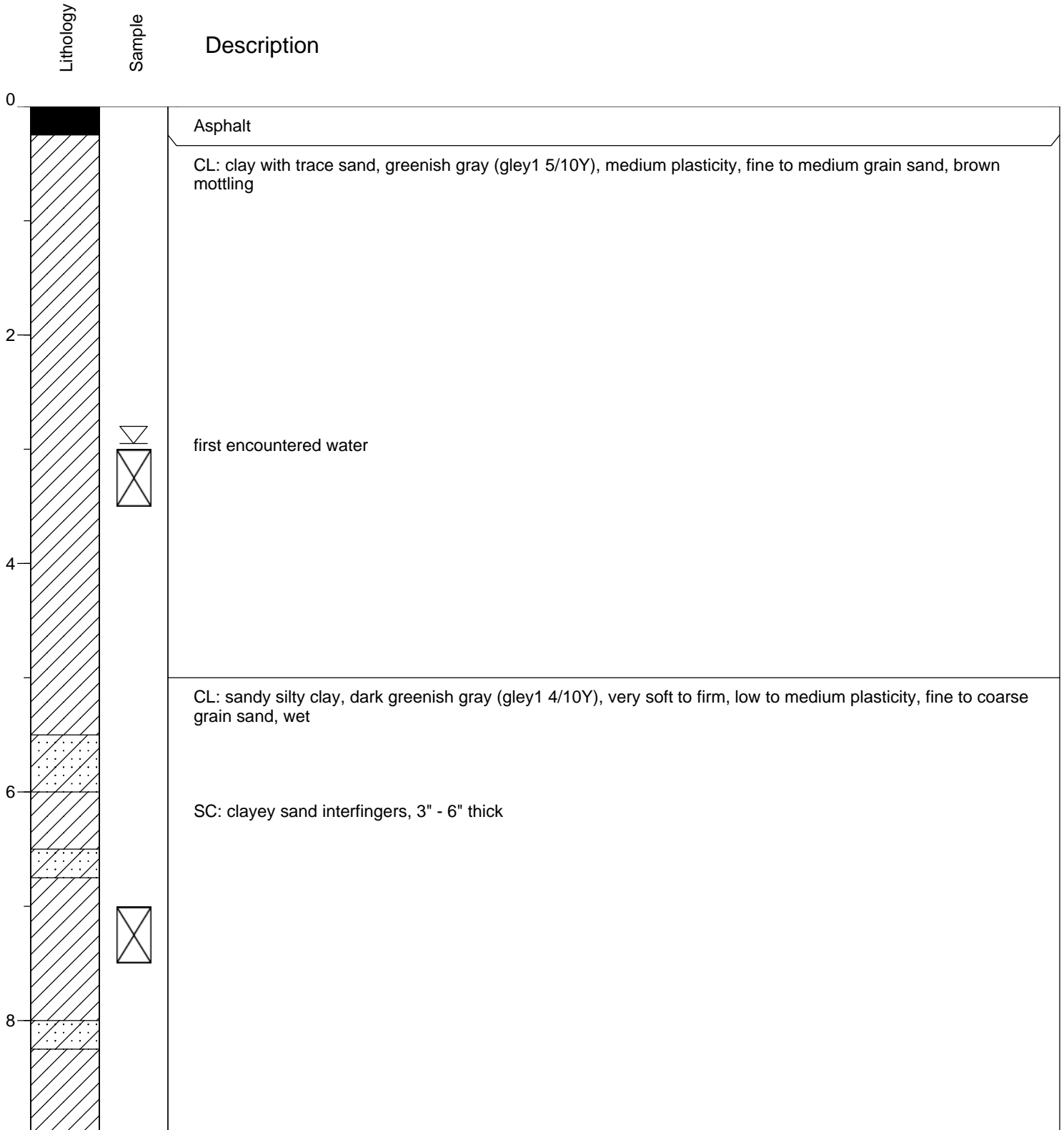
Boring ID: B11

Page 1 of 1

Drilling Company: Pitcher
Drill Rig Type: Power Probe
Drilling Method: Direct Push
Drilled By: Will Stewart

Date Started: 10/24/13
Date Completed: 10/24/13
Boring Diameter: 2"
Logged By: Jacob Ruffing

Total Depth: 9'
Northing: 4141768.96m
Easting: 587260.72m





Project Name: Sunnyvale WPCP

Project Number: 028-213932-021

Location: Sunnyvale, CA

Boring Log

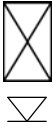

Boring ID: B12

Page 1 of 1

Drilling Company: Pitcher
Drill Rig Type: Power Probe
Drilling Method: Direct Push
Drilled By: Will Stewart

Date Started: 10/24/13
Date Completed: 10/24/13
Boring Diameter: 2"
Logged By: Jacob Ruffing

Total Depth: 9'
Northing: 4141740.66m
Easting: 587270.73m

Lithology	Sample	Description
0		Asphalt
2		CL: silty clay with trace gravel and sand, dark greenish gray (gley1 4/10Y), firm, fine subangular sand and gravel, gravel up to 0.25"
4		first encountered water
6		SC: clayey sand
		CL: sandy clay with trace gravel, dark greenish gray (gley1 4/10Y), soft to firm, low plasticity, wet
8		CL: clay, dark greenish gray (gley1 4/10Y) with brown mottling, firm, medium plasticity, moist



Project Name: Sunnyvale WPCP

Project Number: 028-213932-021

Location: Sunnyvale, CA

Boring Log

Boring ID: B13

Page 1 of 1

Drilling Company: Pitcher
Drill Rig Type: Power Probe
Drilling Method: Direct Push
Drilled By: Will Stewart

Date Started: 10/24/13
Date Completed: 10/24/13
Boring Diameter: 2"
Logged By: Jacob Ruffing

Total Depth: 7'
Northing: 4141769.77m
Easting: 586989.89m

Lithology	Sample	Description
0		Asphalt
2		GM: silty sandy gravel, very dark gray (10YR 3/1) with brown (10YR 5/3), poorly graded, fine to coarse sand and gravel, subrounded to angular, gravel up to 1", medium density, dry
4		
6		no water encountered

APPENDIX B

Laboratory Analytical Reports



Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

ANALYTICAL REPORT

HDR, Inc.
2365 Iron Point Road
Folsom, CA 95630

Attn: Clayton Mokri
Phone: (916) 817-4762
Fax: (916) 817-4747
Date Received : 10/26/13

Job: 028-213932-021/Sunnyvale

Total Nitrogen Total by Calculation

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: B02-20-GW-10252013 Lab ID: HDR13102820-05A Total Nitrogen as N Date Sampled 10/25/13 10:50	4.0	1.0 mg/L	10/31/13	10/31/13
Client ID: B10-05-GW-10252013 Lab ID: HDR13102820-22A Total Nitrogen as N Date Sampled 10/25/13 09:30	14	1.0 mg/L	10/31/13	10/31/13



Roger Scholl *Randy Gardner* *Walter Hinchman*

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 281-4848 / Carson, CA • (714) 386-2901 / info@alpha-analytical.com

Alpha Analytical, Inc. certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Statement of Data Authenticity: Alpha Analytical, Inc. attests that the data reported has not been altered in any way.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



✓
11/4/13

Report Date



Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

ANALYTICAL REPORT

HDR, Inc.
2365 Iron Point Road
Folsom, CA 95630
Job: 028-213932-021/Sunnyvale

Attn: Clayton Mokri
Phone: (916) 817-4762
Fax: (916) 817-4747

Alpha Analytical Number: HDR13102820-01A
Client I.D. Number: B01-03-SO-10242013

Sampled: 10/24/13 09:50
Received: 10/26/13
Extracted: 10/28/13 16:19
Analyzed: 11/01/13

Semivolatile Organics by GC/MS EPA Method SW8270C

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Phenol	ND	660 µg/Kg	36 Hexachlorobenzene	ND	660 µg/Kg
2 2-Chlorophenol	ND	660 µg/Kg	37 Pentachlorophenol	ND	3,300 µg/Kg
3 Bis(2-chloroethyl)ether	ND	660 µg/Kg	38 Phenanthrene	ND	660 µg/Kg
4 1,3-Dichlorobenzene	ND	1,300 µg/Kg	39 Anthracene	ND	660 µg/Kg
5 1,4-Dichlorobenzene	ND	1,300 µg/Kg	40 Di-n-butyl phthalate	ND	3,300 µg/Kg
6 1,2-Dichlorobenzene	ND	1,300 µg/Kg	41 Fluoranthene	ND	660 µg/Kg
7 Bis(2-chloroisopropyl)ether	ND	660 µg/Kg	42 Pyrene	ND	660 µg/Kg
8 N-Nitrosodi-n-propylamine	ND	660 µg/Kg	43 Butyl benzyl phthalate	ND	1,300 µg/Kg
9 Hexachloroethane	ND	1,300 µg/Kg	44 Benzo(a)anthracene	ND	660 µg/Kg
10 Nitrobenzene	ND	660 µg/Kg	45 3,3'-Dichlorobenzidine	ND	1,300 µg/Kg
11 Isophorone	ND	660 µg/Kg	46 Chrysene	ND	660 µg/Kg
12 2-Nitrophenol	ND	660 µg/Kg	47 Bis(2-ethylhexyl)phthalate	ND	3,300 µg/Kg
13 2,4-Dimethylphenol	ND	660 µg/Kg	48 Di-n-octyl phthalate	ND	3,300 µg/Kg
14 Bis(2-chloroethoxy)methane	ND	660 µg/Kg	49 Benzo(b)fluoranthene	ND	660 µg/Kg
15 2,4-Dichlorophenol	ND	660 µg/Kg	50 Benzo(k)fluoranthene	ND	660 µg/Kg
16 1,2,4-Trichlorobenzene	ND	660 µg/Kg	51 Benzo(a)pyrene	ND	660 µg/Kg
17 Naphthalene	ND	660 µg/Kg	52 Indeno(1,2,3-cd)pyrene	ND	660 µg/Kg
18 Hexachlorobutadiene	ND	1,300 µg/Kg	53 Dibenz(a,h)anthracene	ND	660 µg/Kg
19 4-Chloro-3-methylphenol	ND	1,300 µg/Kg	54 Benzo(g,h,i)perylene	ND	660 µg/Kg
20 Hexachlorocyclopentadiene	ND	6,600 µg/Kg	55 Surr: 2-Fluorophenol	88	(60-143) %REC
21 2,4,6-Trichlorophenol	ND	660 µg/Kg	56 Surr: Phenol-d5	86	(56-148) %REC
22 2-Chloronaphthalene	ND	660 µg/Kg	57 Surr: Nitrobenzene-d5	76	(48-131) %REC
23 Dimethyl phthalate	ND	660 µg/Kg	58 Surr: 2-Fluorobiphenyl	118	(53-130) %REC
24 Acenaphthylene	ND	660 µg/Kg	59 Surr: 2,4,6-Tribromophenol	78	(44-154) %REC
25 2,6-Dinitrotoluene	ND	660 µg/Kg	60 Surr: 4-Terphenyl-d14	61	(42-145) %REC
26 Acenaphthene	ND	660 µg/Kg			
27 2,4-Dinitrophenol	ND	6,600 µg/Kg			
28 4-Nitrophenol	ND	3,300 µg/Kg			
29 2,4-Dinitrotoluene	ND	660 µg/Kg			
30 Diethyl phthalate	ND	660 µg/Kg			
31 Fluorene	ND	660 µg/Kg			
32 4-Chlorophenyl phenyl ether	ND	660 µg/Kg			
33 4,6-Dinitro-2-methylphenol	ND	6,600 µg/Kg			
34 N-Nitrosodiphenylamine	ND	660 µg/Kg			
35 4-Bromophenyl phenyl ether	ND	660 µg/Kg			

Sample results were calculated on a wet weight basis.
ND = Not Detected



Roger Scholl *Randy Gardner* *Walter Hinchman*
Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer
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YAB
11/4/13
Report Date



Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

ANALYTICAL REPORT

HDR, Inc.
2365 Iron Point Road
Folsom, CA 95630
Job: 028-213932-021/Sunnyvale

Attn: Clayton Mokri
Phone: (916) 817-4762
Fax: (916) 817-4747

Alpha Analytical Number: HDR13102820-08A
Client I.D. Number: B04-03-SO-10242013

Sampled: 10/24/13 10:10
Received: 10/26/13
Extracted: 10/28/13 16:19
Analyzed: 11/01/13

Semivolatile Organics by GC/MS EPA Method SW8270C

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Phenol	ND	660 µg/Kg	36 Hexachlorobenzene	ND	660 µg/Kg
2 2-Chlorophenol	ND	660 µg/Kg	37 Pentachlorophenol	ND	3,300 µg/Kg
3 Bis(2-chloroethyl)ether	ND	660 µg/Kg	38 Phenanthrene	ND	660 µg/Kg
4 1,3-Dichlorobenzene	ND	1,300 µg/Kg	39 Anthracene	ND	660 µg/Kg
5 1,4-Dichlorobenzene	ND	1,300 µg/Kg	40 Di-n-butyl phthalate	ND	3,300 µg/Kg
6 1,2-Dichlorobenzene	ND	1,300 µg/Kg	41 Fluoranthene	ND	660 µg/Kg
7 Bis(2-chloroisopropyl)ether	ND	660 µg/Kg	42 Pyrene	ND	660 µg/Kg
8 N-Nitrosodi-n-propylamine	ND	660 µg/Kg	43 Butyl benzyl phthalate	ND	1,300 µg/Kg
9 Hexachloroethane	ND	1,300 µg/Kg	44 Benzo(a)anthracene	ND	660 µg/Kg
10 Nitrobenzene	ND	660 µg/Kg	45 3,3'-Dichlorobenzidine	ND	1,300 µg/Kg
11 Isophorone	ND	660 µg/Kg	46 Chrysene	ND	660 µg/Kg
12 2-Nitrophenol	ND	660 µg/Kg	47 Bis(2-ethylhexyl)phthalate	ND	3,300 µg/Kg
13 2,4-Dimethylphenol	ND	660 µg/Kg	48 Di-n-octyl phthalate	ND	3,300 µg/Kg
14 Bis(2-chloroethoxy)methane	ND	660 µg/Kg	49 Benzo(b)fluoranthene	ND	660 µg/Kg
15 2,4-Dichlorophenol	ND	660 µg/Kg	50 Benzo(k)fluoranthene	ND	660 µg/Kg
16 1,2,4-Trichlorobenzene	ND	660 µg/Kg	51 Benzo(a)pyrene	ND	660 µg/Kg
17 Naphthalene	ND	660 µg/Kg	52 Indeno(1,2,3-cd)pyrene	ND	660 µg/Kg
18 4-Chloro-3-methylphenol	ND	1,300 µg/Kg	53 Dibenz(a,h)anthracene	ND	660 µg/Kg
19 Hexachlorobutadiene	ND	1,300 µg/Kg	54 Benzo(g,h,i)perylene	ND	660 µg/Kg
20 Hexachlorocyclopentadiene	ND	6,600 µg/Kg	55 Surr: 2-Fluorophenol	86	(60-143) %REC
21 2,4,6-Trichlorophenol	ND	660 µg/Kg	56 Surr: Phenol-d5	77	(56-148) %REC
22 2-Chloronaphthalene	ND	660 µg/Kg	57 Surr: Nitrobenzene-d5	78	(48-131) %REC
23 Dimethyl phthalate	ND	660 µg/Kg	58 Surr: 2-Fluorobiphenyl	106	(53-130) %REC
24 Acenaphthylene	ND	660 µg/Kg	59 Surr: 2,4,6-Tribromophenol	99	(44-154) %REC
25 2,6-Dinitrotoluene	ND	660 µg/Kg	60 Surr: 4-Terphenyl-d14	63	(42-145) %REC
26 Acenaphthene	ND	660 µg/Kg			
27 2,4-Dinitrophenol	ND	6,600 µg/Kg			
28 4-Nitrophenol	ND	3,300 µg/Kg			
29 2,4-Dinitrotoluene	ND	660 µg/Kg			
30 Diethyl phthalate	ND	660 µg/Kg			
31 Fluorene	ND	660 µg/Kg			
32 4-Chlorophenyl phenyl ether	ND	660 µg/Kg			
33 4,6-Dinitro-2-methylphenol	ND	6,600 µg/Kg			
34 N-Nitrosodiphenylamine	ND	660 µg/Kg			
35 4-Bromophenyl phenyl ether	ND	660 µg/Kg			

Sample results were calculated on a wet weight basis.
ND = Not Detected



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JAG
11/4/13

Report Date

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Page 1 of 1



Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

ANALYTICAL REPORT

HDR, Inc.
2365 Iron Point Road
Folsom, CA 95630
Job: 028-213932-021/Sunnyvale

Attn: Clayton Mokri
Phone: (916) 817-4762
Fax: (916) 817-4747

Alpha Analytical Number: HDR13102820-14A
Client I.D. Number: B07-03-SO-10242013

Sampled: 10/24/13 13:40
Received: 10/26/13
Extracted: 10/28/13 16:19
Analyzed: 11/01/13

Semivolatile Organics by GC/MS EPA Method SW8270C

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Phenol	ND	660 µg/Kg	36 Hexachlorobenzene	ND	660 µg/Kg
2 2-Chlorophenol	ND	660 µg/Kg	37 Pentachlorophenol	ND	3,300 µg/Kg
3 Bis(2-chloroethyl)ether	ND	660 µg/Kg	38 Phenanthrene	ND	660 µg/Kg
4 1,3-Dichlorobenzene	ND	1,300 µg/Kg	39 Anthracene	ND	660 µg/Kg
5 1,4-Dichlorobenzene	ND	1,300 µg/Kg	40 Di-n-butyl phthalate	ND	3,300 µg/Kg
6 1,2-Dichlorobenzene	ND	1,300 µg/Kg	41 Fluoranthene	ND	660 µg/Kg
7 Bis(2-chloroisopropyl)ether	ND	660 µg/Kg	42 Pyrene	ND	660 µg/Kg
8 N-Nitrosodi-n-propylamine	ND	660 µg/Kg	43 Butyl benzyl phthalate	ND	1,300 µg/Kg
9 Hexachloroethane	ND	1,300 µg/Kg	44 Benzo(a)anthracene	ND	660 µg/Kg
10 Nitrobenzene	ND	660 µg/Kg	45 3,3'-Dichlorobenzidine	ND	1,300 µg/Kg
11 Isophorone	ND	660 µg/Kg	46 Chrysene	ND	660 µg/Kg
12 2-Nitrophenol	ND	660 µg/Kg	47 Bis(2-ethylhexyl)phthalate	ND	3,300 µg/Kg
13 2,4-Dimethylphenol	ND	660 µg/Kg	48 Di-n-octyl phthalate	ND	3,300 µg/Kg
14 Bis(2-chloroethoxy)methane	ND	660 µg/Kg	49 Benzo(b)fluoranthene	ND	660 µg/Kg
15 2,4-Dichlorophenol	ND	660 µg/Kg	50 Benzo(k)fluoranthene	ND	660 µg/Kg
16 1,2,4-Trichlorobenzene	ND	660 µg/Kg	51 Benzo(a)pyrene	ND	660 µg/Kg
17 Naphthalene	ND	660 µg/Kg	52 Indeno(1,2,3-cd)pyrene	ND	660 µg/Kg
18 Hexachlorobutadiene	ND	1,300 µg/Kg	53 Dibenz(a,h)anthracene	ND	660 µg/Kg
19 4-Chloro-3-methylphenol	ND	1,300 µg/Kg	54 Benzo(g,h,i)perylene	ND	660 µg/Kg
20 Hexachlorocyclopentadiene	ND	6,600 µg/Kg	55 Surr: 2-Fluorophenol	92	(60-143) %REC
21 2,4,6-Trichlorophenol	ND	660 µg/Kg	56 Surr: Phenol-d5	82	(56-148) %REC
22 2-Chloronaphthalene	ND	660 µg/Kg	57 Surr: Nitrobenzene-d5	71	(48-131) %REC
23 Dimethyl phthalate	ND	660 µg/Kg	58 Surr: 2-Fluorobiphenyl	120	(53-130) %REC
24 Acenaphthylene	ND	660 µg/Kg	59 Surr: 2,4,6-Tribromophenol	75	(44-154) %REC
25 2,6-Dinitrotoluene	ND	660 µg/Kg	60 Surr: 4-Terphenyl-d14	61	(42-145) %REC
26 Acenaphthene	ND	660 µg/Kg			
27 2,4-Dinitrophenol	ND	6,600 µg/Kg			
28 4-Nitrophenol	ND	3,300 µg/Kg			
29 2,4-Dinitrotoluene	ND	660 µg/Kg			
30 Diethyl phthalate	ND	660 µg/Kg			
31 Fluorene	ND	660 µg/Kg			
32 4-Chlorophenyl phenyl ether	ND	660 µg/Kg			
33 4,6-Dinitro-2-methylphenol	ND	6,600 µg/Kg			
34 N-Nitrosodiphenylamine	ND	660 µg/Kg			
35 4-Bromophenyl phenyl ether	ND	660 µg/Kg			

Sample results were calculated on a wet weight basis.
ND = Not Detected



Roger Scholl *Randy Gardner* *Walter Hinchman*
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[Signature]
11/4/13

Report Date

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Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

ANALYTICAL REPORT

HDR, Inc.
2365 Iron Point Road
Folsom, CA 95630
Job: 028-213932-021/Sunnyvale

Attn: Clayton Mokri
Phone: (916) 817-4762
Fax: (916) 817-4747

Alpha Analytical Number: HDR13102820-18A
Client I.D. Number: B09-03-SO-10242013

Sampled: 10/24/13 15:00
Received: 10/26/13
Extracted: 10/28/13 16:19
Analyzed: 11/01/13

Semivolatile Organics by GC/MS EPA Method SW8270C

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Phenol	ND	660 µg/Kg	36 Hexachlorobenzene	ND	660 µg/Kg
2 2-Chlorophenol	ND	660 µg/Kg	37 Pentachlorophenol	ND	3,300 µg/Kg
3 Bis(2-chloroethyl)ether	ND	660 µg/Kg	38 Phenanthrene	ND	660 µg/Kg
4 1,3-Dichlorobenzene	ND	1,300 µg/Kg	39 Anthracene	ND	660 µg/Kg
5 1,4-Dichlorobenzene	ND	1,300 µg/Kg	40 Di-n-butyl phthalate	ND	3,300 µg/Kg
6 1,2-Dichlorobenzene	ND	1,300 µg/Kg	41 Fluoranthene	ND	660 µg/Kg
7 Bis(2-chloroisopropyl)ether	ND	660 µg/Kg	42 Pyrene	ND	660 µg/Kg
8 N-Nitrosodi-n-propylamine	ND	660 µg/Kg	43 Butyl benzyl phthalate	ND	1,300 µg/Kg
9 Hexachloroethane	ND	1,300 µg/Kg	44 Benzo(a)anthracene	ND	660 µg/Kg
10 Nitrobenzene	ND	660 µg/Kg	45 3,3'-Dichlorobenzidine	ND	1,300 µg/Kg
11 Isophorone	ND	660 µg/Kg	46 Chrysene	ND	660 µg/Kg
12 2-Nitrophenol	ND	660 µg/Kg	47 Bis(2-ethylhexyl)phthalate	ND	3,300 µg/Kg
13 2,4-Dimethylphenol	ND	660 µg/Kg	48 Di-n-octyl phthalate	ND	3,300 µg/Kg
14 Bis(2-chloroethoxy)methane	ND	660 µg/Kg	49 Benzo(b)fluoranthene	ND	660 µg/Kg
15 2,4-Dichlorophenol	ND	660 µg/Kg	50 Benzo(k)fluoranthene	ND	660 µg/Kg
16 1,2,4-Trichlorobenzene	ND	660 µg/Kg	51 Benzo(a)pyrene	ND	660 µg/Kg
17 Naphthalene	ND	660 µg/Kg	52 Indeno(1,2,3-cd)pyrene	ND	660 µg/Kg
18 Hexachlorobutadiene	ND	1,300 µg/Kg	53 Dibenz(a,h)anthracene	ND	660 µg/Kg
19 4-Chloro-3-methylphenol	ND	1,300 µg/Kg	54 Benzo(g,h,i)perylene	ND	660 µg/Kg
20 Hexachlorocyclopentadiene	ND	6,600 µg/Kg	55 Surr: 2-Fluorophenol	90	(60-143) %REC
21 2,4,6-Trichlorophenol	ND	660 µg/Kg	56 Surr: Phenol-d5	80	(56-148) %REC
22 2-Chloronaphthalene	ND	660 µg/Kg	57 Surr: Nitrobenzene-d5	72	(48-131) %REC
23 Dimethyl phthalate	ND	660 µg/Kg	58 Surr: 2-Fluorobiphenyl	122	(53-130) %REC
24 Acenaphthylene	ND	660 µg/Kg	59 Surr: 2,4,6-Tribromophenol	73	(44-154) %REC
25 2,6-Dinitrotoluene	ND	660 µg/Kg	60 Surr: 4-Terphenyl-d14	60	(42-145) %REC
26 Acenaphthene	ND	660 µg/Kg			
27 2,4-Dinitrophenol	ND	6,600 µg/Kg			
28 4-Nitrophenol	ND	3,300 µg/Kg			
29 2,4-Dinitrotoluene	ND	660 µg/Kg			
30 Diethyl phthalate	ND	660 µg/Kg			
31 Fluorene	ND	660 µg/Kg			
32 4-Chlorophenyl phenyl ether	ND	660 µg/Kg			
33 4,6-Dinitro-2-methylphenol	ND	6,600 µg/Kg			
34 N-Nitrosodiphenylamine	ND	660 µg/Kg			
35 4-Bromophenyl phenyl ether	ND	660 µg/Kg			

Sample results were calculated on a wet weight basis.
ND = Not Detected



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[Signature]
11/4/13

Report Date

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Alpha Analytical, Inc.

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ANALYTICAL REPORT

HDR, Inc.
2365 Iron Point Road
Folsom, CA 95630
Job: 028-213932-021/Sunnyvale

Attn: Clayton Mokri
Phone: (916) 817-4762
Fax: (916) 817-4747

Alpha Analytical Number: HDR13102820-25A
Client I.D. Number: B12-03-SO-10242013

Sampled: 10/24/13 16:20
Received: 10/26/13
Extracted: 10/28/13 16:19
Analyzed: 11/04/13

Semivolatile Organics by GC/MS EPA Method SW8270C

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Phenol	ND	660 µg/Kg	36 Hexachlorobenzene	ND	660 µg/Kg
2 2-Chlorophenol	ND	660 µg/Kg	37 Pentachlorophenol	ND	3,300 µg/Kg
3 Bis(2-chloroethyl)ether	ND	660 µg/Kg	38 Phenanthrene	ND	660 µg/Kg
4 1,3-Dichlorobenzene	ND	1,300 µg/Kg	39 Anthracene	ND	660 µg/Kg
5 1,4-Dichlorobenzene	ND	1,300 µg/Kg	40 Di-n-butyl phthalate	ND	3,300 µg/Kg
6 1,2-Dichlorobenzene	ND	1,300 µg/Kg	41 Fluoranthene	ND	660 µg/Kg
7 Bis(2-chloroisopropyl)ether	ND	660 µg/Kg	42 Pyrene	ND	660 µg/Kg
8 N-Nitrosodi-n-propylamine	ND	660 µg/Kg	43 Butyl benzyl phthalate	ND	1,300 µg/Kg
9 Hexachloroethane	ND	1,300 µg/Kg	44 Benzo(a)anthracene	ND	660 µg/Kg
10 Nitrobenzene	ND	660 µg/Kg	45 3,3'-Dichlorobenzidine	ND	1,300 µg/Kg
11 Isophorone	ND	660 µg/Kg	46 Chrysene	ND	660 µg/Kg
12 2-Nitrophenol	ND	660 µg/Kg	47 Bis(2-ethylhexyl)phthalate	ND	3,300 µg/Kg
13 2,4-Dimethylphenol	ND	660 µg/Kg	48 Di-n-octyl phthalate	ND	3,300 µg/Kg
14 Bis(2-chloroethoxy)methane	ND	660 µg/Kg	49 Benzo(b)fluoranthene	ND	660 µg/Kg
15 2,4-Dichlorophenol	ND	660 µg/Kg	50 Benzo(k)fluoranthene	ND	660 µg/Kg
16 1,2,4-Trichlorobenzene	ND	660 µg/Kg	51 Benzo(a)pyrene	ND	660 µg/Kg
17 Naphthalene	ND	660 µg/Kg	52 Indeno(1,2,3-cd)pyrene	ND	660 µg/Kg
18 Hexachlorobutadiene	ND	1,300 µg/Kg	53 Dibenz(a,h)anthracene	ND	660 µg/Kg
19 4-Chloro-3-methylphenol	ND	1,300 µg/Kg	54 Benzo(g,h,i)perylene	ND	660 µg/Kg
20 Hexachlorocyclopentadiene	ND	6,600 µg/Kg	55 Surr: 2-Fluorophenol	85	(80-143) %REC
21 2,4,6-Trichlorophenol	ND	660 µg/Kg	56 Surr: Phenol-d5	74	(56-148) %REC
22 2-Chloronaphthalene	ND	660 µg/Kg	57 Surr: Nitrobenzene-d5	83	(48-131) %REC
23 Dimethyl phthalate	ND	660 µg/Kg	58 Surr: 2-Fluorobiphenyl	107	(53-130) %REC
24 Acenaphthylene	ND	660 µg/Kg	59 Surr: 2,4,6-Tribromophenol	111	(44-154) %REC
25 2,6-Dinitrotoluene	ND	660 µg/Kg	60 Surr: 4-Terphenyl-d14	67	(42-145) %REC
26 Acenaphthene	ND	660 µg/Kg			
27 2,4-Dinitrophenol	ND	6,600 µg/Kg			
28 4-Nitrophenol	ND	3,300 µg/Kg			
29 2,4-Dinitrotoluene	ND	660 µg/Kg			
30 Diethyl phthalate	ND	660 µg/Kg			
31 Fluorene	ND	660 µg/Kg			
32 4-Chlorophenyl phenyl ether	ND	660 µg/Kg			
33 4,6-Dinitro-2-methylphenol	ND	6,600 µg/Kg			
34 N-Nitrosodiphenylamine	ND	660 µg/Kg			
35 4-Bromophenyl phenyl ether	ND	660 µg/Kg			

Sample results were calculated on a wet weight basis.
ND = Not Detected



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11/4/13

Report Date

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Alpha Analytical, Inc.

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ANALYTICAL REPORT

HDR, Inc.
2365 Iron Point Road
Folsom, CA 95630
Job: 028-213932-021/Sunnyvale

Attn: Clayton Mokri
Phone: (916) 817-4762
Fax: (916) 817-4747

Alpha Analytical Number: HDR13102820-27A
Client I.D. Number: B13-03-SO-10242013

Sampled: 10/24/13 12:45
Received: 10/26/13
Extracted: 10/28/13 16:19
Analyzed: 11/04/13

Semivolatile Organics by GC/MS EPA Method SW8270C

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Phenol	ND	660 µg/Kg	36 Hexachlorobenzene	ND	660 µg/Kg
2 2-Chlorophenol	ND	660 µg/Kg	37 Pentachlorophenol	ND	3,300 µg/Kg
3 Bis(2-chloroethyl)ether	ND	660 µg/Kg	38 Phenanthrene	ND	660 µg/Kg
4 1,3-Dichlorobenzene	ND	1,300 µg/Kg	39 Anthracene	ND	660 µg/Kg
5 1,4-Dichlorobenzene	ND	1,300 µg/Kg	40 Di-n-butyl phthalate	ND	3,300 µg/Kg
6 1,2-Dichlorobenzene	ND	1,300 µg/Kg	41 Fluoranthene	ND	660 µg/Kg
7 Bis(2-chloroisopropyl)ether	ND	660 µg/Kg	42 Pyrene	ND	660 µg/Kg
8 N-Nitrosodi-n-propylamine	ND	660 µg/Kg	43 Butyl benzyl phthalate	ND	1,300 µg/Kg
9 Hexachloroethane	ND	1,300 µg/Kg	44 Benzo(a)anthracene	ND	660 µg/Kg
10 Nitrobenzene	ND	660 µg/Kg	45 3,3'-Dichlorobenzidine	ND	1,300 µg/Kg
11 Isophorone	ND	660 µg/Kg	46 Chrysene	ND	660 µg/Kg
12 2-Nitrophenol	ND	660 µg/Kg	47 Bis(2-ethylhexyl)phthalate	ND	3,300 µg/Kg
13 2,4-Dimethylphenol	ND	660 µg/Kg	48 Di-n-octyl phthalate	ND	3,300 µg/Kg
14 Bis(2-chloroethoxy)methane	ND	660 µg/Kg	49 Benzo(b)fluoranthene	ND	660 µg/Kg
15 2,4-Dichlorophenol	ND	660 µg/Kg	50 Benzo(k)fluoranthene	ND	660 µg/Kg
16 1,2,4-Trichlorobenzene	ND	660 µg/Kg	51 Benzo(a)pyrene	ND	660 µg/Kg
17 Naphthalene	ND	660 µg/Kg	52 Indeno(1,2,3-cd)pyrene	ND	660 µg/Kg
18 Hexachlorobutadiene	ND	1,300 µg/Kg	53 Dibenz(a,h)anthracene	ND	660 µg/Kg
19 4-Chloro-3-methylphenol	ND	1,300 µg/Kg	54 Benzo(g,h,i)perylene	ND	660 µg/Kg
20 Hexachlorocyclopentadiene	ND	6,600 µg/Kg	55 Surr: 2-Fluorophenol	94	(60-143) %REC
21 2,4,6-Trichlorophenol	ND	660 µg/Kg	56 Surr: Phenol-d5	87	(56-148) %REC
22 2-Chloronaphthalene	ND	660 µg/Kg	57 Surr: Nitrobenzene-d5	86	(48-131) %REC
23 Dimethyl phthalate	ND	660 µg/Kg	58 Surr: 2-Fluorobiphenyl	113	(53-130) %REC
24 Acenaphthylene	ND	660 µg/Kg	59 Surr: 2,4,6-Tribromophenol	107	(44-154) %REC
25 2,6-Dinitrotoluene	ND	660 µg/Kg	60 Surr: 4-Terphenyl-d14	60	(42-145) %REC
26 Acenaphthene	ND	660 µg/Kg			
27 2,4-Dinitrophenol	ND	6,600 µg/Kg			
28 4-Nitrophenol	ND	3,300 µg/Kg			
29 2,4-Dinitrotoluene	ND	660 µg/Kg			
30 Diethyl phthalate	ND	660 µg/Kg			
31 Fluorene	ND	660 µg/Kg			
32 4-Chlorophenyl phenyl ether	ND	660 µg/Kg			
33 4,6-Dinitro-2-methylphenol	ND	6,600 µg/Kg			
34 N-Nitrosodiphenylamine	ND	660 µg/Kg			
35 4-Bromophenyl phenyl ether	ND	660 µg/Kg			

Sample results were calculated on a wet weight basis.
ND = Not Detected



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Report Date

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Alpha Analytical, Inc.

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ANALYTICAL REPORT

HDR, Inc.
2365 Iron Point Road
Folsom, CA 95630

Attn: Clayton Mokri
Phone: (916) 817-4762
Fax: (916) 817-4747
Date Received : 10/26/13

Job: 028-213932-021/Sunnyvale

Metals by ICPMS EPA Method SW6020 / SW6020A

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed	
Client ID: B02-20-GW-10252013					
Lab ID : HDR13102820-05A	Chromium (Cr)	1.2	0.010 mg/L	11/01/13	11/01/13
Date Sampled 10/25/13 10:50	Arsenic (As)	0.10	0.0050 mg/L	11/01/13	11/01/13
	Selenium (Se)	0.031	0.0050 mg/L	11/01/13	11/01/13
	Silver (Ag)	0.011	0.0050 mg/L	11/01/13	11/01/13
	Cadmium (Cd)	0.038	0.0020 mg/L	11/01/13	11/01/13
	Barium (Ba)	8.6	0.0050 mg/L	11/01/13	11/01/13
	Mercury (Hg)	0.0032	0.0010 mg/L	11/01/13	11/01/13
	Lead (Pb)	0.17	0.0050 mg/L	11/01/13	11/01/13
Client ID: B10-05-GW-10252013					
Lab ID : HDR13102820-22A	Chromium (Cr)	1.7	0.010 mg/L	11/01/13	11/01/13
Date Sampled 10/25/13 09:30	Arsenic (As)	0.21	0.0050 mg/L	11/01/13	11/01/13
	Selenium (Se)	0.044	0.0050 mg/L	11/01/13	11/01/13
	Silver (Ag)	0.026	0.0050 mg/L	11/01/13	11/01/13
	Cadmium (Cd)	0.022	0.0020 mg/L	11/01/13	11/01/13
	Barium (Ba)	5.5	0.0050 mg/L	11/01/13	11/01/13
	Mercury (Hg)	0.0035	0.0010 mg/L	11/01/13	11/01/13
	Lead (Pb)	0.42	0.0050 mg/L	11/01/13	11/01/13



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ANALYTICAL REPORT

HDR, Inc.
2365 Iron Point Road
Folsom, CA 95630

Attn: Clayton Mokri
Phone: (916) 817-4762
Fax: (916) 817-4747
Date Received : 10/26/13

Job: 028-213932-021/Sunnyvale

Metals by ICPMS EPA Method SW6020 / SW6020A

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed	
Client ID: B01-03-SO-10242013					
Lab ID : HDR13102820-01A	Chromium (Cr)	60	1.0 mg/Kg	10/29/13	10/29/13
Date Sampled 10/24/13 09:50	Arsenic (As)	4.2	1.0 mg/Kg	10/29/13	10/29/13
	Selenium (Se)	ND	2.0 mg/Kg	10/29/13	10/29/13
	Silver (Ag)	ND	1.0 mg/Kg	10/29/13	10/29/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/29/13	10/29/13
	Barium (Ba)	320	1.0 mg/Kg	10/29/13	10/29/13
	Mercury (Hg)	ND	0.20 mg/Kg	10/29/13	10/29/13
	Lead (Pb)	6.5	1.0 mg/Kg	10/29/13	10/29/13
Client ID: B01-07-SO-10242013					
Lab ID : HDR13102820-02A	Chromium (Cr)	65	1.0 mg/Kg	10/29/13	10/29/13
Date Sampled 10/24/13 09:55	Arsenic (As)	10	1.0 mg/Kg	10/29/13	10/29/13
	Selenium (Se)	ND	2.0 mg/Kg	10/29/13	10/29/13
	Silver (Ag)	ND	1.0 mg/Kg	10/29/13	10/29/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/29/13	10/29/13
	Barium (Ba)	310	1.0 mg/Kg	10/29/13	10/29/13
	Mercury (Hg)	ND	0.20 mg/Kg	10/29/13	10/29/13
	Lead (Pb)	9.0	1.0 mg/Kg	10/29/13	10/29/13
Client ID: B02-03-SO-10252013					
Lab ID : HDR13102820-03A	Chromium (Cr)	57	1.0 mg/Kg	10/29/13	10/29/13
Date Sampled 10/25/13 10:00	Arsenic (As)	4.6	1.0 mg/Kg	10/29/13	10/29/13
	Selenium (Se)	ND	2.0 mg/Kg	10/29/13	10/29/13
	Silver (Ag)	ND	1.0 mg/Kg	10/29/13	10/29/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/29/13	10/29/13
	Barium (Ba)	420	1.0 mg/Kg	10/29/13	10/29/13
	Mercury (Hg)	ND	0.20 mg/Kg	10/29/13	10/29/13
	Lead (Pb)	5.2	1.0 mg/Kg	10/29/13	10/29/13
Client ID: B02-07-SO-10252013					
Lab ID : HDR13102820-04A	Chromium (Cr)	57	1.0 mg/Kg	10/29/13	10/29/13
Date Sampled 10/25/13 10:15	Arsenic (As)	3.5	1.0 mg/Kg	10/29/13	10/29/13
	Selenium (Se)	ND	2.0 mg/Kg	10/29/13	10/29/13
	Silver (Ag)	ND	1.0 mg/Kg	10/29/13	10/29/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/29/13	10/29/13
	Barium (Ba)	150	1.0 mg/Kg	10/29/13	10/29/13
	Mercury (Hg)	ND	0.20 mg/Kg	10/29/13	10/29/13
	Lead (Pb)	5.0	1.0 mg/Kg	10/29/13	10/29/13



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255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

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Client ID: B03-03-SO-10242013

Lab ID : HDR13102820-06A	Chromium (Cr)	32	1.0 mg/Kg	10/29/13	10/29/13
Date Sampled 10/24/13 08:37	Arsenic (As)	5.1	1.0 mg/Kg	10/29/13	10/29/13
	Selenium (Se)	ND	2.0 mg/Kg	10/29/13	10/29/13
	Silver (Ag)	ND	1.0 mg/Kg	10/29/13	10/29/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/29/13	10/29/13
	Barium (Ba)	97	1.0 mg/Kg	10/29/13	10/29/13
	Mercury (Hg)	ND	0.20 mg/Kg	10/29/13	10/29/13
	Lead (Pb)	4.1	1.0 mg/Kg	10/29/13	10/29/13

Client ID: B03-07-SO-10242013

Lab ID : HDR13102820-07A	Chromium (Cr)	52	1.0 mg/Kg	10/29/13	10/29/13
Date Sampled 10/24/13 08:53	Arsenic (As)	2.6	1.0 mg/Kg	10/29/13	10/29/13
	Selenium (Se)	ND	2.0 mg/Kg	10/29/13	10/29/13
	Silver (Ag)	ND	1.0 mg/Kg	10/29/13	10/29/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/29/13	10/29/13
	Barium (Ba)	120	1.0 mg/Kg	10/29/13	10/29/13
	Mercury (Hg)	ND	0.20 mg/Kg	10/29/13	10/29/13
	Lead (Pb)	14	1.0 mg/Kg	10/29/13	10/29/13

Client ID: B04-03-SO-10242013

Lab ID : HDR13102820-08A	Chromium (Cr)	60	1.0 mg/Kg	10/29/13	10/29/13
Date Sampled 10/24/13 10:10	Arsenic (As)	28	1.0 mg/Kg	10/29/13	10/29/13
	Selenium (Se)	ND	2.0 mg/Kg	10/29/13	10/29/13
	Silver (Ag)	1.3	1.0 mg/Kg	10/29/13	10/29/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/29/13	10/29/13
	Barium (Ba)	390	1.0 mg/Kg	10/29/13	10/29/13
	Mercury (Hg)	ND	0.20 mg/Kg	10/29/13	10/29/13
	Lead (Pb)	170	1.0 mg/Kg	10/29/13	10/29/13

Client ID: B04-07-SO-10242013

Lab ID : HDR13102820-09A	Chromium (Cr)	5.7	1.0 mg/Kg	10/31/13	10/31/13
Date Sampled 10/24/13 10:25	Arsenic (As)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Selenium (Se)	ND	2.0 mg/Kg	10/31/13	10/31/13
	Silver (Ag)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Barium (Ba)	22	1.0 mg/Kg	10/31/13	10/31/13
	Mercury (Hg)	ND	0.20 mg/Kg	10/31/13	10/31/13
	Lead (Pb)	1.2	1.0 mg/Kg	10/31/13	10/31/13

Client ID: B05-03-SO-10252013

Lab ID : HDR13102820-10A	Chromium (Cr)	120	1.0 mg/Kg	10/31/13	10/31/13
Date Sampled 10/25/13 07:45	Arsenic (As)	3.7	1.0 mg/Kg	10/31/13	10/31/13
	Selenium (Se)	ND	2.0 mg/Kg	10/31/13	10/31/13
	Silver (Ag)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Barium (Ba)	110	1.0 mg/Kg	10/31/13	10/31/13
	Mercury (Hg)	ND	0.20 mg/Kg	10/31/13	10/31/13
	Lead (Pb)	4.9	1.0 mg/Kg	10/31/13	10/31/13

Client ID: B05-07-SO-10252013

Lab ID : HDR13102820-11A	Chromium (Cr)	72	1.0 mg/Kg	10/31/13	10/31/13
Date Sampled 10/25/13 08:20	Arsenic (As)	2.2	1.0 mg/Kg	10/31/13	10/31/13
	Selenium (Se)	ND	2.0 mg/Kg	10/31/13	10/31/13
	Silver (Ag)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Barium (Ba)	150	1.0 mg/Kg	10/31/13	10/31/13
	Mercury (Hg)	ND	0.20 mg/Kg	10/31/13	10/31/13
	Lead (Pb)	3.3	1.0 mg/Kg	10/31/13	10/31/13



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Client ID: B06-03-SO-10242013

Lab ID : HDR13102820-12A	Chromium (Cr)	74	1.0 mg/Kg	10/31/13	10/31/13
Date Sampled 10/24/13 10:55	Arsenic (As)	7.8	1.0 mg/Kg	10/31/13	10/31/13
	Selenium (Se)	ND	2.0 mg/Kg	10/31/13	10/31/13
	Silver (Ag)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Barium (Ba)	210	1.0 mg/Kg	10/31/13	10/31/13
	Mercury (Hg)	ND	0.20 mg/Kg	10/31/13	10/31/13
	Lead (Pb)	21	1.0 mg/Kg	10/31/13	10/31/13

Client ID: B06-07-SO-10242013

Lab ID : HDR13102820-13A	Chromium (Cr)	85	1.0 mg/Kg	10/31/13	10/31/13
Date Sampled 10/24/13 11:20	Arsenic (As)	4.6	1.0 mg/Kg	10/31/13	10/31/13
	Selenium (Se)	ND	2.0 mg/Kg	10/31/13	10/31/13
	Silver (Ag)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Barium (Ba)	130	1.0 mg/Kg	10/31/13	10/31/13
	Mercury (Hg)	ND	0.20 mg/Kg	10/31/13	10/31/13
	Lead (Pb)	15	1.0 mg/Kg	10/31/13	10/31/13

Client ID: B07-03-SO-10242013

Lab ID : HDR13102820-14A	Chromium (Cr)	62	1.0 mg/Kg	10/31/13	10/31/13
Date Sampled 10/24/13 13:40	Arsenic (As)	3.5	1.0 mg/Kg	10/31/13	10/31/13
	Selenium (Se)	ND	2.0 mg/Kg	10/31/13	10/31/13
	Silver (Ag)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Barium (Ba)	140	1.0 mg/Kg	10/31/13	10/31/13
	Mercury (Hg)	ND	0.20 mg/Kg	10/31/13	10/31/13
	Lead (Pb)	9.2	1.0 mg/Kg	10/31/13	10/31/13

Client ID: B07-07-SO-10242013

Lab ID : HDR13102820-15A	Chromium (Cr)	4.0	1.0 mg/Kg	10/31/13	10/31/13
Date Sampled 10/24/13 13:45	Arsenic (As)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Selenium (Se)	ND	2.0 mg/Kg	10/31/13	10/31/13
	Silver (Ag)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Barium (Ba)	9.9	1.0 mg/Kg	10/31/13	10/31/13
	Mercury (Hg)	ND	0.20 mg/Kg	10/31/13	10/31/13
	Lead (Pb)	ND	1.0 mg/Kg	10/31/13	10/31/13

Client ID: B08-03-SO-10242013

Lab ID : HDR13102820-16A	Chromium (Cr)	73	1.0 mg/Kg	10/31/13	10/31/13
Date Sampled 10/24/13 14:05	Arsenic (As)	4.0	1.0 mg/Kg	10/31/13	10/31/13
	Selenium (Se)	ND	2.0 mg/Kg	10/31/13	10/31/13
	Silver (Ag)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Barium (Ba)	150	1.0 mg/Kg	10/31/13	10/31/13
	Mercury (Hg)	ND	0.20 mg/Kg	10/31/13	10/31/13
	Lead (Pb)	14	1.0 mg/Kg	10/31/13	10/31/13

Client ID: B08-07-SO-10242013

Lab ID : HDR13102820-17A	Chromium (Cr)	59	1.0 mg/Kg	10/31/13	10/31/13
Date Sampled 10/24/13 14:15	Arsenic (As)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Selenium (Se)	ND	2.0 mg/Kg	10/31/13	10/31/13
	Silver (Ag)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Barium (Ba)	32	1.0 mg/Kg	10/31/13	10/31/13
	Mercury (Hg)	ND	0.20 mg/Kg	10/31/13	10/31/13
	Lead (Pb)	ND	1.0 mg/Kg	10/31/13	10/31/13



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Client ID: B09-03-SO-10242013

Lab ID : HDR13102820-18A	Chromium (Cr)	54	1.0 mg/Kg	10/31/13	10/31/13
Date Sampled 10/24/13 15:00	Arsenic (As)	1.8	1.0 mg/Kg	10/31/13	10/31/13
	Selenium (Se)	ND	2.0 mg/Kg	10/31/13	10/31/13
	Silver (Ag)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Barium (Ba)	120	1.0 mg/Kg	10/31/13	10/31/13
	Mercury (Hg)	ND	0.20 mg/Kg	10/31/13	10/31/13
	Lead (Pb)	4.9	1.0 mg/Kg	10/31/13	10/31/13

Client ID: B09-07-SO-10242013

Lab ID : HDR13102820-19A	Chromium (Cr)	64	1.0 mg/Kg	10/31/13	10/31/13
Date Sampled 10/24/13 15:10	Arsenic (As)	3.7	1.0 mg/Kg	10/31/13	10/31/13
	Selenium (Se)	ND	2.0 mg/Kg	10/31/13	10/31/13
	Silver (Ag)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Barium (Ba)	130	1.0 mg/Kg	10/31/13	10/31/13
	Mercury (Hg)	ND	0.20 mg/Kg	10/31/13	10/31/13
	Lead (Pb)	6.0	1.0 mg/Kg	10/31/13	10/31/13

Client ID: B10-03-SO-10252013

Lab ID : HDR13102820-20A	Chromium (Cr)	68	1.0 mg/Kg	10/31/13	10/31/13
Date Sampled 10/25/13 09:20	Arsenic (As)	3.4	1.0 mg/Kg	10/31/13	10/31/13
	Selenium (Se)	ND	2.0 mg/Kg	10/31/13	10/31/13
	Silver (Ag)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Barium (Ba)	140	1.0 mg/Kg	10/31/13	10/31/13
	Mercury (Hg)	ND	0.20 mg/Kg	10/31/13	10/31/13
	Lead (Pb)	6.3	1.0 mg/Kg	10/31/13	10/31/13

Client ID: B10-07-SO-10252013

Lab ID : HDR13102820-21A	Chromium (Cr)	62	1.0 mg/Kg	10/31/13	10/31/13
Date Sampled 10/25/13 09:35	Arsenic (As)	4.0	1.0 mg/Kg	10/31/13	10/31/13
	Selenium (Se)	ND	2.0 mg/Kg	10/31/13	10/31/13
	Silver (Ag)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Barium (Ba)	150	1.0 mg/Kg	10/31/13	10/31/13
	Mercury (Hg)	ND	0.20 mg/Kg	10/31/13	10/31/13
	Lead (Pb)	5.8	1.0 mg/Kg	10/31/13	10/31/13

Client ID: B11-03-SO-10242013

Lab ID : HDR13102820-23A	Chromium (Cr)	78	1.0 mg/Kg	10/31/13	10/31/13
Date Sampled 10/24/13 15:40	Arsenic (As)	5.6	1.0 mg/Kg	10/31/13	10/31/13
	Selenium (Se)	ND	2.0 mg/Kg	10/31/13	10/31/13
	Silver (Ag)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Barium (Ba)	420	1.0 mg/Kg	10/31/13	10/31/13
	Mercury (Hg)	ND	0.20 mg/Kg	10/31/13	10/31/13
	Lead (Pb)	8.5	1.0 mg/Kg	10/31/13	10/31/13

Client ID: B11-07-SO-10242013

Lab ID : HDR13102820-24A	Chromium (Cr)	62	1.0 mg/Kg	10/31/13	10/31/13
Date Sampled 10/24/13 15:45	Arsenic (As)	4.2	1.0 mg/Kg	10/31/13	10/31/13
	Selenium (Se)	ND	2.0 mg/Kg	10/31/13	10/31/13
	Silver (Ag)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Barium (Ba)	120	1.0 mg/Kg	10/31/13	10/31/13
	Mercury (Hg)	ND	0.20 mg/Kg	10/31/13	10/31/13
	Lead (Pb)	6.2	1.0 mg/Kg	10/31/13	10/31/13



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Client ID: B12-03-SO-10242013

Lab ID : HDR13102820-25A	Chromium (Cr)	60	1.0 mg/Kg	10/31/13	10/31/13
Date Sampled 10/24/13 16:20	Arsenic (As)	4.3	1.0 mg/Kg	10/31/13	10/31/13
	Selenium (Se)	ND	2.0 mg/Kg	10/31/13	10/31/13
	Silver (Ag)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Barium (Ba)	160	1.0 mg/Kg	10/31/13	10/31/13
	Mercury (Hg)	ND	0.20 mg/Kg	10/31/13	10/31/13
	Lead (Pb)	9.2	1.0 mg/Kg	10/31/13	10/31/13

Client ID: B12-07-SO-10242013

Lab ID : HDR13102820-26A	Chromium (Cr)	41	1.0 mg/Kg	10/31/13	10/31/13
Date Sampled 10/24/13 16:30	Arsenic (As)	3.8	1.0 mg/Kg	10/31/13	10/31/13
	Selenium (Se)	ND	2.0 mg/Kg	10/31/13	10/31/13
	Silver (Ag)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Barium (Ba)	85	1.0 mg/Kg	10/31/13	10/31/13
	Mercury (Hg)	ND	0.20 mg/Kg	10/31/13	10/31/13
	Lead (Pb)	4.2	1.0 mg/Kg	10/31/13	10/31/13

Client ID: B13-03-SO-10242013

Lab ID : HDR13102820-27A	Chromium (Cr)	67	1.0 mg/Kg	10/31/13	10/31/13
Date Sampled 10/24/13 12:45	Arsenic (As)	2.2	1.0 mg/Kg	10/31/13	10/31/13
	Selenium (Se)	ND	2.0 mg/Kg	10/31/13	10/31/13
	Silver (Ag)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Barium (Ba)	1,900	1.0 mg/Kg	10/31/13	10/31/13
	Mercury (Hg)	0.27	0.20 mg/Kg	10/31/13	10/31/13
	Lead (Pb)	8.6	1.0 mg/Kg	10/31/13	10/31/13

Client ID: B13-07-SO-10242013

Lab ID : HDR13102820-28A	Chromium (Cr)	61	1.0 mg/Kg	10/31/13	10/31/13
Date Sampled 10/24/13 13:00	Arsenic (As)	3.7	1.0 mg/Kg	10/31/13	10/31/13
	Selenium (Se)	2.3	2.0 mg/Kg	10/31/13	10/31/13
	Silver (Ag)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Cadmium (Cd)	ND	1.0 mg/Kg	10/31/13	10/31/13
	Barium (Ba)	1,100	1.0 mg/Kg	10/31/13	10/31/13
	Mercury (Hg)	0.36	0.20 mg/Kg	10/31/13	10/31/13
	Lead (Pb)	7.4	1.0 mg/Kg	10/31/13	10/31/13

Sample results were calculated on a wet weight basis.
ND = Not Detected



Roger Scholl *Randy Gardner* *Walter Hinchman*
 Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer
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 Alpha Analytical, Inc. certifies that the test results meet all requirements of NELAC unless footnoted otherwise.



Statement of Data Authenticity: Alpha Analytical, Inc. attests that the data reported has not been altered in any way.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

11/4/13

Report Date



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ANALYTICAL REPORT

HDR, Inc.
2365 Iron Point Road
Folsom, CA 95630

Attn: Clayton Mokri
Phone: (916) 817-4762
Fax: (916) 817-4747
Date Received : 10/26/13

Job: 028-213932-021/Sunnyvale

STLC Metals by ICPMS
CAL WET / EPA Method SW6020 / SW6020A

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: B03-07-SO-10242013 Lab ID: HDR13102820-07A Chromium (Cr) Date Sampled 10/24/13 08:53	0.67	0.10 mg/L	12/11/13	12/11/13
Client ID: B04-03-SO-10242013 Lab ID: HDR13102820-08A Lead (Pb) Date Sampled 10/24/13 10:10	0.17	0.10 mg/L	12/11/13	12/11/13
Client ID: B05-03-SO-10252013 Lab ID: HDR13102820-10A Chromium (Cr) Date Sampled 10/25/13 07:45	0.13	0.10 mg/L	12/11/13	12/11/13
Client ID: B06-07-SO-10242013 Lab ID: HDR13102820-13A Chromium (Cr) Date Sampled 10/24/13 11:20	0.17	0.10 mg/L	12/11/13	12/11/13
Client ID: B07-03-SO-10242013 Lab ID: HDR13102820-14A Chromium (Cr) Date Sampled 10/24/13 13:40	ND	0.10 mg/L	12/11/13	12/11/13
Client ID: B11-03-SO-10242013 Lab ID: HDR13102820-23A Chromium (Cr) Date Sampled 10/24/13 15:40	0.16	0.10 mg/L	12/11/13	12/11/13
Client ID: B13-03-SO-10242013 Lab ID: HDR13102820-27A Barium (Ba) Date Sampled 10/24/13 12:45	9.7	1.0 mg/L	12/11/13	12/11/13
Client ID: B13-07-SO-10242013 Lab ID: HDR13102820-28A Barium (Ba) Date Sampled 10/24/13 13:00	8.5	1.0 mg/L	12/11/13	12/11/13

ND = Not Detected



Roger Scholl *Randy Gardner* *Walter Hinchman*
Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer
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Alpha Analytical, Inc. certifies that the test results meet all requirements of NELAC unless footnoted otherwise.



✓
12/13/13
Report Date

Statement of Data Authenticity : Alpha Analytical, Inc. attests that the data reported has not been altered in any way.
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ANALYTICAL REPORT

HDR, Inc.
2365 Iron Point Road
Folsom, CA 95630

Attn: Clayton Mokri
Phone: (916) 817-4762
Fax: (916) 817-4747
Date Received : 10/26/13

Job: 028-213932-021/Sunnyvale

Total Dissolved Solids (TDS)
SM2540C

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: B02-20-GW-10252013				
Lab ID : HDR13102820-05A Solids, Total Dissolved (TDS)	20,000	100 mg/L	11/01/13	11/01/13
Date Sampled 10/25/13 10:50				
Client ID: B10-05-GW-10252013				
Lab ID : HDR13102820-22A Solids, Total Dissolved (TDS)	35,000	200 mg/L	11/01/13	11/01/13
Date Sampled 10/25/13 09:30				



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 Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer
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 Alpha Analytical, Inc. certifies that the test results meet all requirements of NELAC unless footnoted otherwise.



11/4/13

Report Date

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Date:
01-Nov-13

QC Summary Report

Work Order:
13102820

Method Blank

Method Blank		Type: MBLK	Test Code: EPA Method 300.0							
File ID: 27			Batch ID: 31872				Analysis Date: 10/25/2013 13:54			
Sample ID: MB-31872	Units : mg/L		Run ID: IC_1_131025A				Prep Date: 10/25/2013 13:00			
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Nitrite (NO2) - N	ND	0.25								
Nitrate (NO3) - N	ND	0.25								

Laboratory Fortified Blank

Laboratory Fortified Blank		Type: LFB	Test Code: EPA Method 300.0							
File ID: 29			Batch ID: 31872				Analysis Date: 10/25/2013 14:31			
Sample ID: LFB-31872	Units : mg/L		Run ID: IC_1_131025A				Prep Date: 10/25/2013 13:00			
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Nitrite (NO2) - N	5.49	0.25	5		110	90	110			
Nitrate (NO3) - N	5.5	0.25	5		110	90	110			

Sample Matrix Spike

Sample Matrix Spike		Type: LFM	Test Code: EPA Method 300.0							
File ID: 31			Batch ID: 31872				Analysis Date: 10/25/2013 15:08			
Sample ID: 13102430-02ALFM	Units : mg/L		Run ID: IC_1_131025A				Prep Date: 10/25/2013 13:00			
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Nitrite (NO2) - N	28.6	0.63	25		0	114	80	120		
Nitrate (NO3) - N	33.9	0.63	25		7.042	108	80	120		

Sample Matrix Spike Duplicate

Sample Matrix Spike Duplicate		Type: LFMD	Test Code: EPA Method 300.0							
File ID: 32			Batch ID: 31872				Analysis Date: 10/25/2013 15:27			
Sample ID: 13102430-02ALFMD	Units : mg/L		Run ID: IC_1_131025A				Prep Date: 10/25/2013 13:00			
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Nitrite (NO2) - N	28.5	0.63	25		0	114	80	120	28.61	0.3(15)
Nitrate (NO3) - N	34	0.63	25		7.042	108	80	120	33.92	0.4(15)

Comments:

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Alpha Analytical, Inc.

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Date:
04-Nov-13

QC Summary Report

Work Order:
13102820

Method Blank

Type MBLK Test Code: EPA Method SW8270C

File ID: 13103129.D

Batch ID: 31881

Analysis Date: 11/01/2013 02:32

Sample ID: MBLK-31881

Units: µg/Kg

Run ID: MSD_16_131028A

Prep Date: 10/28/2013 16:19

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Phenol	ND	660								
2-Chlorophenol	ND	660								
Bis(2-chloroethyl)ether	ND	660								
1,3-Dichlorobenzene	ND	1300								
1,4-Dichlorobenzene	ND	1300								
1,2-Dichlorobenzene	ND	1300								
Bis(2-chloroisopropyl)ether	ND	660								
N-Nitrosodi-n-propylamine	ND	660								
Hexachloroethane	ND	1300								
Nitrobenzene	ND	660								
Isophorone	ND	660								
2-Nitrophenol	ND	660								
2,4-Dimethylphenol	ND	660								
Bis(2-chloroethoxy)methane	ND	660								
2,4-Dichlorophenol	ND	660								
1,2,4-Trichlorobenzene	ND	660								
Naphthalene	ND	660								
4-Chloro-3-methylphenol	ND	1300								
Hexachlorobutadiene	ND	1300								
Hexachlorocyclopentadiene	ND	6600								
2,4,6-Trichlorophenol	ND	660								
2-Chloronaphthalene	ND	660								
Dimethyl phthalate	ND	660								
Acenaphthylene	ND	660								
2,6-Dinitrotoluene	ND	660								
Acenaphthene	ND	660								
2,4-Dinitrophenol	ND	6600								
4-Nitrophenol	ND	3300								
2,4-Dinitrotoluene	ND	660								
Diethyl phthalate	ND	660								
Fluorene	ND	660								
4-Chlorophenyl phenyl ether	ND	660								
4,6-Dinitro-2-methylphenol	ND	6600								
N-Nitrosodiphenylamine	ND	660								
4-Bromophenyl phenyl ether	ND	660								
Hexachlorobenzene	ND	660								
Pentachlorophenol	ND	3300								
Phenanthrene	ND	660								
Anthracene	ND	660								
Di-n-butyl phthalate	ND	3300								
Fluoranthene	ND	660								
Pyrene	ND	660								
Butyl benzyl phthalate	ND	1300								
Benzo(a)anthracene	ND	660								
3,3'-Dichlorobenzidine	ND	1300								
Chrysene	ND	660								
Bis(2-ethylhexyl)phthalate	ND	3300								
Di-n-octyl phthalate	ND	3300								
Benzo(b)fluoranthene	ND	660								
Benzo(k)fluoranthene	ND	660								
Benzo(a)pyrene	ND	660								
Indeno(1,2,3-cd)pyrene	ND	660								
Dibenz(a,h)anthracene	ND	660								
Benzo(g,h,i)perylene	ND	660								
Surr: 2-Fluorophenol	11700		12500		93	60	143			
Surr: Phenol-d5	10100		12500		81	56	148			
Surr: Nitrobenzene-d5	4470		6250		72	48	131			
Surr: 2-Fluorobiphenyl	7340		6250		117	53	130			
Surr: 2,4,6-Tribromophenol	11800		12500		95	44	154			
Surr: 4-Terphenyl-d14	4580		6250		73	42	145			



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Date:
04-Nov-13

QC Summary Report

Work Order:
13102820

Laboratory Control Spike

File ID: 13103130.D

Sample ID: LCS-31881

Type LCS

Test Code: EPA Method SW8270C

Batch ID: 31881

Analysis Date: 11/01/2013 02:57

Units: µg/Kg

Run ID: MSD_16_131028A

Prep Date: 10/28/2013 16:19

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Phenol	3850	660	6250		62	45	130			
2-Chlorophenol	4380	660	6250		70	66	130			
1,4-Dichlorobenzene	4170	1300	6250		67	59	130			
N-Nitrosodi-n-propylamine	3490	660	6250		56	52	136			
1,2,4-Trichlorobenzene	3960	660	6250		63	46	130			
4-Chloro-3-methylphenol	4000	1300	6250		64	49	130			
Acenaphthene	4140	660	6250		66	57	130			
4-Nitrophenol	10500	3300	25000		42	13	142			
2,4-Dinitrotoluene	3430	660	6250		55	50	136			
Pentachlorophenol	13600	3300	25000		54	24	138			
Pyrene	4060	660	6250		65	38	141			
Surr: 2-Fluorophenol	11300		12500		90	60	143			
Surr: Phenol-d5	10200		12500		81	56	148			
Surr: Nitrobenzene-d5	4260		6250		68	48	131			
Surr: 2-Fluorobiphenyl	6730		6250		108	53	130			
Surr: 2,4,6-Tribromophenol	12900		12500		103	44	154			
Surr: 4-Terphenyl-d14	4250		6250		68	42	145			

Sample Matrix Spike

File ID: 13103139.D

Sample ID: 13102820-01AMS

Type MS

Test Code: EPA Method SW8270C

Batch ID: 31881

Analysis Date: 11/01/2013 06:44

Units: µg/Kg

Run ID: MSD_16_131028A

Prep Date: 10/28/2013 16:19

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Phenol	3930	660	6250	0	63	28	132			
2-Chlorophenol	4470	660	6250	0	72	32	143			
1,4-Dichlorobenzene	4270	1300	6250	0	68	40	130			
N-Nitrosodi-n-propylamine	3780	660	6250	0	61	43	145			
1,2,4-Trichlorobenzene	3760	660	6250	0	60	28	136			
4-Chloro-3-methylphenol	3620	1300	6250	0	58	15	144			
Acenaphthene	4160	660	6250	0	67	27	140			
4-Nitrophenol	10600	3300	25000	0	42	5	142			
2,4-Dinitrotoluene	3400	660	6250	0	54	23	151			
Pentachlorophenol	13400	3300	25000	0	54	5	140			
Pyrene	4550	660	6250	0	73	29	145			
Surr: 2-Fluorophenol	11200		12500		90	60	143			
Surr: Phenol-d5	10200		12500		82	56	148			
Surr: Nitrobenzene-d5	3980		6250		64	48	131			
Surr: 2-Fluorobiphenyl	6700		6250		107	53	130			
Surr: 2,4,6-Tribromophenol	12800		12500		102	44	154			
Surr: 4-Terphenyl-d14	4230		6250		68	42	145			

Sample Matrix Spike Duplicate

File ID: 13103140.D

Sample ID: 13102820-01AMSD

Type MSD

Test Code: EPA Method SW8270C

Batch ID: 31881

Analysis Date: 11/01/2013 07:09

Units: µg/Kg

Run ID: MSD_16_131028A

Prep Date: 10/28/2013 16:19

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Phenol	4080	660	6250	0	65	28	132	3935	3.7(27)	
2-Chlorophenol	4630	660	6250	0	74	32	143	4473	3.4(26)	
1,4-Dichlorobenzene	4200	1300	6250	0	67	40	130	4269	1.8(20)	
N-Nitrosodi-n-propylamine	3820	660	6250	0	61	43	145	3781	1.1(21)	
1,2,4-Trichlorobenzene	3770	660	6250	0	60	28	136	3756	0.4(31)	
4-Chloro-3-methylphenol	3750	1300	6250	0	60	15	144	3624	3.4(40)	
Acenaphthene	4060	660	6250	0	65	27	140	4163	2.4(31)	
4-Nitrophenol	7800	3300	25000	0	31	5	142	10590	30.4(41)	
2,4-Dinitrotoluene	3110	660	6250	0	50	23	151	3405	9.1(39)	
Pentachlorophenol	12200	3300	25000	0	49	5	140	13400	9.3(30)	
Pyrene	4320	660	6250	0	69	29	145	4553	5.4(29)	
Surr: 2-Fluorophenol	11900		12500		95	60	143			
Surr: Phenol-d5	10800		12500		86	56	148			
Surr: Nitrobenzene-d5	4090		6250		65	48	131			
Surr: 2-Fluorobiphenyl	6560		6250		105	53	130			
Surr: 2,4,6-Tribromophenol	11900		12500		96	44	154			
Surr: 4-Terphenyl-d14	4250		6250		68	42	145			



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Date:

04-Nov-13

QC Summary Report

Work Order:

13102820

Comments:

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Date:
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QC Summary Report

Work Order:
13102820

Method Blank

Method Blank		Type	Test Code: EPA Method SW6020 / SW6020A							
File ID:	065_	MBLK	Batch ID: 31910				Analysis Date: 11/01/2013 14:25			
Sample ID:	MB-31910	Units : mg/L	Run ID: ICP/MS_131101B				Prep Date: 11/01/2013 10:23			
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	ND	0.01								
Arsenic (As)	ND	0.005								
Selenium (Se)	ND	0.005								
Silver (Ag)	ND	0.005								
Cadmium (Cd)	ND	0.002								
Barium (Ba)	ND	0.005								
Mercury (Hg)	ND	0.001								
Lead (Pb)	ND	0.005								

Laboratory Control Spike

Laboratory Control Spike		Type	Test Code: EPA Method SW6020 / SW6020A							
File ID:	068_	LCS	Batch ID: 31910				Analysis Date: 11/01/2013 14:35			
Sample ID:	LCS-31910	Units : mg/L	Run ID: ICP/MS_131101B				Prep Date: 11/01/2013 10:23			
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.263	0.01	0.25		105	80	120			
Arsenic (As)	0.263	0.005	0.25		105	80	120			
Selenium (Se)	0.261	0.005	0.25		104	80	120			
Silver (Ag)	0.273	0.005	0.25		109	80	120			
Cadmium (Cd)	0.259	0.002	0.25		104	80	120			
Barium (Ba)	2.58	0.005	2.5		103	80	120			
Mercury (Hg)	0.0044	0.001	0.005		88	80	120			
Lead (Pb)	0.262	0.005	0.25		105	80	120			

Sample Matrix Spike

Sample Matrix Spike		Type	Test Code: EPA Method SW6020 / SW6020A							
File ID:	069_	MS	Batch ID: 31910				Analysis Date: 11/01/2013 14:38			
Sample ID:	13103020-01AMS	Units : mg/L	Run ID: ICP/MS_131101B				Prep Date: 11/01/2013 10:23			
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.266	0.01	0.25	0	107	75	125			
Arsenic (As)	0.266	0.005	0.25	0	106	75	125			
Selenium (Se)	0.261	0.005	0.25	0	104	75	125			
Silver (Ag)	0.277	0.005	0.25	0	111	75	125			
Cadmium (Cd)	0.268	0.002	0.25	0	107	75	125			
Barium (Ba)	2.68	0.005	2.5	0.0806	104	75	125			
Mercury (Hg)	0.0045	0.001	0.005	0	90	75	125			
Lead (Pb)	0.266	0.005	0.25	0	106	75	125			

Sample Matrix Spike Duplicate

Sample Matrix Spike Duplicate		Type	Test Code: EPA Method SW6020 / SW6020A							
File ID:	070_	MSD	Batch ID: 31910				Analysis Date: 11/01/2013 14:41			
Sample ID:	13103020-01AMSD	Units : mg/L	Run ID: ICP/MS_131101B				Prep Date: 11/01/2013 10:23			
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.271	0.01	0.25	0	109	75	125	0.2663	1.9(20)	
Arsenic (As)	0.272	0.005	0.25	0	109	75	125	0.2662	2.1(20)	
Selenium (Se)	0.263	0.005	0.25	0	105	75	125	0.261	0.9(20)	
Silver (Ag)	0.278	0.005	0.25	0	111	75	125	0.2766	0.5(20)	
Cadmium (Cd)	0.268	0.002	0.25	0	107	75	125	0.2684	0.3(20)	
Barium (Ba)	2.75	0.005	2.5	0.0806	107	75	125	2.678	2.7(20)	
Mercury (Hg)	0.0045	0.001	0.005	0	90	75	125	0.0045	0.0(20)	
Lead (Pb)	0.269	0.005	0.25	0	108	75	125	0.2657	1.3(20)	



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Date:

04-Nov-13

QC Summary Report

Work Order:

13102820

Comments:

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Date:
01-Nov-13

QC Summary Report

Work Order:
13102820

Method Blank

Type: **MBLK** Test Code: **EPA Method SW6020 / SW6020A**

File ID: **050_**

Batch ID: **31885**

Analysis Date: **10/29/2013 16:37**

Sample ID: **MB-31885**

Units: **mg/Kg**

Run ID: **ICP/MS_131029B**

Prep Date: **10/29/2013 09:39**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	ND	1								
Arsenic (As)	ND	1								
Selenium (Se)	ND	2								
Silver (Ag)	ND	1								
Cadmium (Cd)	ND	1								
Barium (Ba)	ND	1								
Mercury (Hg)	ND	0.2								
Lead (Pb)	ND	1								

Laboratory Control Spike

Type: **LCS** Test Code: **EPA Method SW6020 / SW6020A**

File ID: **052_**

Batch ID: **31885**

Analysis Date: **10/29/2013 16:43**

Sample ID: **LCS-31885**

Units: **mg/Kg**

Run ID: **ICP/MS_131029B**

Prep Date: **10/29/2013 09:39**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	26	1	25		104	80	120			
Arsenic (As)	25.1	1	25		101	80	120			
Selenium (Se)	25.1	2	25		100	80	120			
Silver (Ag)	25.9	1	25		104	80	120			
Cadmium (Cd)	24.7	1	25		99	80	120			
Barium (Ba)	243	1	250		97	80	120			
Mercury (Hg)	0.514	0.2	0.5		103	80	120			
Lead (Pb)	25.5	1	25		102	80	120			

Sample Matrix Spike

Type: **MS** Test Code: **EPA Method SW6020 / SW6020A**

File ID: **054_**

Batch ID: **31885**

Analysis Date: **10/29/2013 16:49**

Sample ID: **13102820-01AMS**

Units: **mg/Kg**

Run ID: **ICP/MS_131029B**

Prep Date: **10/29/2013 09:39**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	109	1	25	60.05	196	75	125			M1
Arsenic (As)	28.4	1	25	4.179	97	75	125			
Selenium (Se)	24.7	2	25	0	99	75	125			
Silver (Ag)	25.9	1	25	0	104	75	125			
Cadmium (Cd)	25.4	1	25	0	102	75	125			
Barium (Ba)	485	1	250	315.2	68	75	125			M2
Mercury (Hg)	0.588	0.2	0.5	0	118	75	125			
Lead (Pb)	32.1	1	25	6.45	102	75	125			

Sample Matrix Spike Duplicate

Type: **MSD** Test Code: **EPA Method SW6020 / SW6020A**

File ID: **055_**

Batch ID: **31885**

Analysis Date: **10/29/2013 16:52**

Sample ID: **13102820-01AMSD**

Units: **mg/Kg**

Run ID: **ICP/MS_131029B**

Prep Date: **10/29/2013 09:39**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	92.9	1	25	60.05	131	75	125	109	16.0(20)	M1
Arsenic (As)	29	1	25	4.179	99	75	125	28.44	2.0(20)	
Selenium (Se)	25.3	2	25	0	101	75	125	24.74	2.0(20)	
Silver (Ag)	25.6	1	25	0	102	75	125	25.92	1.3(20)	
Cadmium (Cd)	25.1	1	25	0	100	75	125	25.41	1.4(20)	
Barium (Ba)	587	1	250	315.2	109	75	125	485.3	19.0(20)	
Mercury (Hg)	0.563	0.2	0.5	0	113	75	125	0.588	4.3(20)	
Lead (Pb)	32.5	1	25	6.45	104	75	125	32.07	1.4(20)	



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Date:
01-Nov-13

QC Summary Report

Work Order:
13102820

Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

M1 = Matrix spike recovery was high, the method control sample recovery was acceptable.

M2 = Matrix spike recovery was low, the method control sample recovery was acceptable.



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Date:
01-Nov-13

QC Summary Report

Work Order:
13102820

Method Blank

Type: MBLK Test Code: EPA Method SW6020 / SW6020A

File ID: 014_

Batch ID: 31899

Analysis Date: 10/31/2013 16:40

Sample ID: MB-31899

Units : mg/Kg

Run ID: ICP/MS_131031A

Prep Date: 10/31/2013 09:56

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	ND	1								
Arsenic (As)	ND	1								
Selenium (Se)	ND	2								
Silver (Ag)	ND	1								
Cadmium (Cd)	ND	1								
Barium (Ba)	ND	1								
Mercury (Hg)	ND	0.2								
Lead (Pb)	ND	1								

Laboratory Control Spike

Type: LCS Test Code: EPA Method SW6020 / SW6020A

File ID: 016_

Batch ID: 31899

Analysis Date: 10/31/2013 16:47

Sample ID: LCS-31899

Units : mg/Kg

Run ID: ICP/MS_131031A

Prep Date: 10/31/2013 09:56

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	26.1	1	25		104	80	120			
Arsenic (As)	26.3	1	25		105	80	120			
Selenium (Se)	26	2	25		104	80	120			
Silver (Ag)	26.6	1	25		107	80	120			
Cadmium (Cd)	25.8	1	25		103	80	120			
Barium (Ba)	253	1	250		101	80	120			
Mercury (Hg)	0.399	0.2	0.5		80	80	120			
Lead (Pb)	26.9	1	25		107	80	120			

Sample Matrix Spike

Type: MS Test Code: EPA Method SW6020 / SW6020A

File ID: 018_

Batch ID: 31899

Analysis Date: 10/31/2013 16:53

Sample ID: 13102820-09AMS

Units : mg/Kg

Run ID: ICP/MS_131031A

Prep Date: 10/31/2013 09:56

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	32.5	1	25	5.744	107	75	125			
Arsenic (As)	27.4	1	25	0	110	75	125			
Selenium (Se)	27.8	2	25	0	111	75	125			
Silver (Ag)	27.2	1	25	0	109	75	125			
Cadmium (Cd)	26.7	1	25	0	107	75	125			
Barium (Ba)	276	1	250	21.89	102	75	125			
Mercury (Hg)	0.448	0.2	0.5	0	90	75	125			
Lead (Pb)	27.7	1	25	1.185	106	75	125			

Sample Matrix Spike Duplicate

Type: MSD Test Code: EPA Method SW6020 / SW6020A

File ID: 019_

Batch ID: 31899

Analysis Date: 10/31/2013 16:56

Sample ID: 13102820-09AMSD

Units : mg/Kg

Run ID: ICP/MS_131031A

Prep Date: 10/31/2013 09:56

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	32.2	1	25	5.744	106	75	125	32.45	0.7(20)	
Arsenic (As)	27.3	1	25	0	109	75	125	27.44	0.6(20)	
Selenium (Se)	26.6	2	25	0	107	75	125	27.83	4.4(20)	
Silver (Ag)	27.2	1	25	0	109	75	125	27.23	0.1(20)	
Cadmium (Cd)	26	1	25	0	104	75	125	26.68	2.6(20)	
Barium (Ba)	275	1	250	21.89	101	75	125	276.4	0.4(20)	
Mercury (Hg)	0.43	0.2	0.5	0	86	75	125	0.448	4.1(20)	
Lead (Pb)	27.6	1	25	1.185	106	75	125	27.75	0.5(20)	



Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:

01-Nov-13

QC Summary Report

Work Order:

13102820

Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:
13-Dec-13

QC Summary Report

Work Order:
13102820

Method Blank

Method Blank		Type	Test Code: CAL WET / EPA Method SW6020 / SW6020A							
File ID:	018_		Batch ID: 32148S				Analysis Date: 12/11/2013 15:29			
Sample ID:	MB-32148	Units : mg/L	Run ID: ICP/MS_131211C				Prep Date: 12/11/2013 09:04			
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	ND	0.1								
Barium (Ba)	ND	1								
Lead (Pb)	ND	0.1								

Laboratory Control Spike

Laboratory Control Spike		Type	Test Code: CAL WET / EPA Method SW6020 / SW6020A							
File ID:	020_		Batch ID: 32148S				Analysis Date: 12/11/2013 15:35			
Sample ID:	LCS-32148	Units : mg/L	Run ID: ICP/MS_131211C				Prep Date: 12/11/2013 09:04			
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.276	0.01	0.25		111	80	120			
Barium (Ba)	2.63	0.005	2.5		105	80	120			
Lead (Pb)	0.274	0.005	0.25		110	80	120			

Sample Matrix Spike

Sample Matrix Spike		Type	Test Code: CAL WET / EPA Method SW6020 / SW6020A							
File ID:	022_		Batch ID: 32148S				Analysis Date: 12/11/2013 15:42			
Sample ID:	13120922-01AMS	Units : mg/L	Run ID: ICP/MS_131211C				Prep Date: 12/11/2013 09:04			
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.266	0.01	0.25	0	106	75	125			
Barium (Ba)	2.66	0.005	2.5	0.1178	102	75	125			
Lead (Pb)	0.298	0.005	0.25	0.0335	106	75	125			

Sample Matrix Spike Duplicate

Sample Matrix Spike Duplicate		Type	Test Code: CAL WET / EPA Method SW6020 / SW6020A							
File ID:	023_		Batch ID: 32148S				Analysis Date: 12/11/2013 15:45			
Sample ID:	13120922-01AMSD	Units : mg/L	Run ID: ICP/MS_131211C				Prep Date: 12/11/2013 09:04			
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.273	0.01	0.25	0	109	75	125	0.2655	2.8(20)	
Barium (Ba)	2.76	0.005	2.5	0.1178	106	75	125	2.66	3.6(20)	
Lead (Pb)	0.307	0.005	0.25	0.0335	109	75	125	0.2978	2.9(20)	

Comments:

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Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778
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Date:
01-Nov-13

QC Summary Report

Work Order:
13102820

Method Blank

Type: **MBLK** Test Code: **SM4500-NORGC / SM4500NH3D**

File ID:				Batch ID: W1028TK		Analysis Date: 10/28/2013 10:42				
Sample ID: MBLK-W1028TK	Units : mg/L		Run ID: WETLAB_131028C		Prep Date: 10/28/2013 10:42					
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Nitrogen, Kjeldahl, Total	ND	0.25								

Laboratory Control Spike

Type: **LCS** Test Code: **SM4500-NORGC / SM4500NH3D**

File ID:				Batch ID: W1028TK		Analysis Date: 10/28/2013 10:57				
Sample ID: LCS-W1028TK	Units : mg/L		Run ID: WETLAB_131028C		Prep Date: 10/28/2013 10:57					
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Nitrogen, Kjeldahl, Total	5.81	0.25	5		116	68	130			

Sample Matrix Spike

Type: **MS** Test Code: **SM4500-NORGC / SM4500NH3D**

File ID:				Batch ID: W1028TK		Analysis Date: 10/28/2013 11:06				
Sample ID: 13102102-01AMS	Units : mg/L		Run ID: WETLAB_131028C		Prep Date: 10/28/2013 11:06					
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Nitrogen, Kjeldahl, Total	5.02	0.25	5	0.413	92	32	147			

Sample Matrix Spike Duplicate

Type: **MSD** Test Code: **SM4500-NORGC / SM4500NH3D**

File ID:				Batch ID: W1028TK		Analysis Date: 10/28/2013 11:12				
Sample ID: 13102102-01AMSD	Units : mg/L		Run ID: WETLAB_131028C		Prep Date: 10/28/2013 11:12					
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Nitrogen, Kjeldahl, Total	6.14	0.25	5	0.413	115	32	147	5.02	20.1(30)	

Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:
04-Nov-13

QC Summary Report

Work Order:
13102820

Method Blank

Method Blank		Type	MBLK		Test Code: SM2540C						
File ID:				Batch ID: W1030DS		Analysis Date: 11/01/2013 00:00					
Sample ID:	MBLK-W1030DS	Units :	mg/L	Run ID:	WETLAB_131030D	Prep Date: 11/01/2013 00:00					
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual	
Solids, Total Dissolved (TDS)	ND	10									

Laboratory Control Spike

Laboratory Control Spike		Type	LCS		Test Code: SM2540C						
File ID:				Batch ID: W1030DS		Analysis Date: 11/01/2013 00:00					
Sample ID:	LCS-W1030DS	Units :	mg/L	Run ID:	WETLAB_131030D	Prep Date: 11/01/2013 00:00					
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual	
Solids, Total Dissolved (TDS)	107	10	100		107	73	130				

Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

CALIFORNIA LABORATORY SERVICES

3249 Fitzgerald Road Rancho Cordova, CA 95742

November 12, 2013

CLS Work Order #: CWK0135

COC #:

Reyna Vallejo
Alpha Analytical, Inc.-Sparks
255 Glendale Ave.; Suite 21
Sparks, NV 89431

Project Name: HDR13102820

Enclosed are the results of analyses for samples received by the laboratory on 11/05/13 07:50. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that the results are in compliance both technically and for completeness.

Analytical results are attached to this letter. Please call if we can provide additional assistance.

Sincerely,



James Liang, Ph.D.
Laboratory Director

CA DOHS ELAP Accreditation/Registration number 1233

Alpha Analytical, Inc.

255 Glendale Avenue
 Suite 21
 Sparks, Nevada 89431-5778
 Phone: (775) 355-1044
 Fax: (775) 355-0406

SUB CHAIN-OF-CUSTODY RECORD

**Report Due By : 5:00 PM
 On : 05-Nov-13**

Work Order : HDR13102820

*Please reference the Work Order number on all reports and invoices.
 *Also please include the dates of analysis and detection limits.
 Please send the report to Alpha Analytical (Sparks).
 Attention To Reyna Vallejo (reyna@alpha-analytical.com).

Subcontractor:
 CLS Labs
 3249 Fitzgerald Rd.
 Rancho Cordova, CA 95742

TEL: (916) 638-7301
 FAX: (916) 638-4510
 Acct #:

Required QC:
 Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Sampled by : J. Ruffing

28-Oct-13

Alpha's Sample ID	Client's Sample ID	Matrix	Collection Date	Type (#) of Bottles		Requested Tests		Sample Comments
				Preserved	Other	EPA Method SW8081A	EPA Method SW8082	
HDR13102820-20A	B10-03-SO-10252013	Soil	10/25/13 09:20		4OZG-U (1)		8081 : SUB 8082 : SUB	
HDR13102820-23A	B11-03-SO-10242013	Soil	10/24/13 15:40		4OZG-U (1)		8081 : SUB 8082 : SUB	
HDR13102820-25A	B12-03-SO-10242013	Soil	10/24/13 16:20		4OZG-U (1)		8081 : SUB 8082 : SUB	
HDR13102820-27A	B13-03-SO-10242013	Soil	10/24/13 12:45		4OZG-U (1)		8081 : SUB 8082 : SUB	

Comments:

	Date/Time		Date/Time
Relinquished by: <u> <i>Kellman</i> </u>	<u> 10/28/13 1600 </u>	Received by: _____	_____
Relinquished by: _____	_____	Received by: _____	_____

CLS LABS
SAMPLE RECEIVING EXCEPTION REPORTS

CLS Labs Job # CW ~~KAS~~ 0135

Problem discovered by: Stephanie C

Date: 11/15/13

Nature of problem

Lighter

Sample HDR B102820-06A, 08A⁵ Labels
fell off and I don't know which label
goes to which sample.

Client contacted? Yes No

Spoke With: Reyna Vallejo

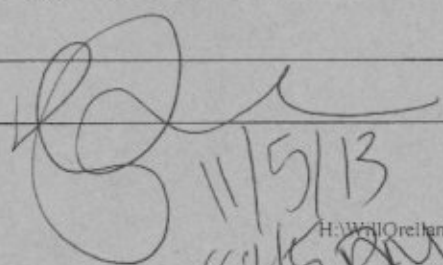
By whom: Stephanie C

Date: 11/15/13 Time: 8:30 HRS

Client instructions:

Resolution of problem:

I called the client and we confirmed
the identity of the samples by
physical appearance


11/15/13
8:45 AM

Alpha Analytical, Inc.

255 Glendale Avenue
Suite 21
Sparks, Nevada 89431-5778
Phone: (775) 355-1044
Fax: (775) 355-0406

SUB CHAIN-OF-CUSTODY RECORD

Work Order : HDR13102820

***Please reference the Work Order number on all reports and invoices.
*Also please include the dates of analysis and detection limits.
Please send the report to Alpha Analytical (Sparks).
Attention To Reyna Vallejo (reyna@alpha-analytical.com).**

CWKO135

**Report Due By : 5:00 PM
On : 05-Nov-13**

Required QC:
Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Subcontractor:

CLS Labs
3249 Fitzgerald Rd.

TEL: (916) 638-7301

FAX: (916) 638-4510

Sampled by : J. Ruffing

Rancho Cordova, CA 95742

Acct #:

28-Oct-13

Alpha's Sample ID	Client's Sample ID	Matrix	Collection Date	Type (#) of Bottles		Requested Tests			Sample Comments
				Preserved	Other	EPA Method SW8081A	EPA Method SW8082		
HDR13102820-01A	B01-03-SO-10242013	Soil	10/24/13 09:50		4OZG-U (1)		8081 : SUB	8082 : SUB	
HDR13102820-03A	B02-03-SO-10252013	Soil	10/25/13 10:00		4OZG-U (1)		8081 : SUB	8082 : SUB	
✓ HDR13102820-06A	B03-03-SO-10242013	Soil	10/24/13 08:37		4OZG-U (1)		8081 : SUB	8082 : SUB	
✓ HDR13102820-08A	B04-03-SO-10242013	Soil	10/24/13 10:10		4OZG-U (1)		8081 : SUB	8082 : SUB	
HDR13102820-10A	B05-03-SO-10252013	Soil	10/25/13 07:45		4OZG-U (1)		8081 : SUB	8082 : SUB	
HDR13102820-12A	B06-03-SO-10242013	Soil	10/24/13 10:55		4OZG-U (1)		8081 : SUB	8082 : SUB	
HDR13102820-14A	B07-03-SO-10242013	Soil	10/24/13 13:40		4OZG-U (1)		8081 : SUB	8082 : SUB	
HDR13102820-16A	B08-03-SO-10242013	Soil	10/24/13 14:05		4OZG-U (1)		8081 : SUB	8082 : SUB	
HDR13102820-18A	B09-03-SO-10242013	Soil	10/24/13 15:00		4OZG-U (1)		8081 : SUB	8082 : SUB	

Comments:

Relinquished by: <u><i>K. Murray</i></u>	Date/Time: <u>10/28/13 1600</u>	Received by: <u><i>[Signature]</i></u>	Date/Time: <u>10/5/13 0750</u>
	Relinquished by: _____		Date/Time: _____

CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave.; Suite 21 Sparks, NV 89431	Project: HDR13102820 Project Number: HDR1310282- Project Manager: Reyna Vallejo	CLS Work Order #: CWK0135 COC #:
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Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HDR13102820-01A (B01-03-SO-10242013) (CWK0135-01) Soil Sampled: 10/24/13 09:50 Received: 11/05/13 07:50									
Aldrin	ND	10	µg/kg	10	CW07385	11/06/13	11/08/13	EPA 8081A	
alpha-BHC	ND	20	"	"	"	"	"	"	
beta-BHC	ND	100	"	"	"	"	"	"	
delta-BHC	ND	100	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	100	"	"	"	"	"	"	
Chlordane-technical	ND	200	"	"	"	"	"	"	
4,4'-DDD	ND	150	"	"	"	"	"	"	
4,4'-DDE	ND	150	"	"	"	"	"	"	
4,4'-DDT	ND	150	"	"	"	"	"	"	
Dieldrin	ND	10	"	"	"	"	"	"	
Endosulfan I	ND	150	"	"	"	"	"	"	
Endosulfan II	ND	150	"	"	"	"	"	"	
Endosulfan sulfate	ND	150	"	"	"	"	"	"	
Endrin	ND	150	"	"	"	"	"	"	
Endrin aldehyde	ND	150	"	"	"	"	"	"	
Heptachlor	ND	50	"	"	"	"	"	"	
Heptachlor epoxide	ND	20	"	"	"	"	"	"	
Methoxychlor	ND	150	"	"	"	"	"	"	
Mirex	ND	100	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	

<i>Surrogate: Tetrachloro-meta-xylene</i>	94 %	46-139	"	"	"	"
<i>Surrogate: Decachlorobiphenyl</i>	89 %	52-141	"	"	"	"

HDR13102820-03A (B02-03-SO-10252013) (CWK0135-02) Soil Sampled: 10/25/13 10:00 Received: 11/05/13 07:50

Aldrin	ND	10	µg/kg	10	CW07385	11/06/13	11/08/13	EPA 8081A	
alpha-BHC	ND	20	"	"	"	"	"	"	
beta-BHC	ND	100	"	"	"	"	"	"	
delta-BHC	ND	100	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	100	"	"	"	"	"	"	
Chlordane-technical	ND	200	"	"	"	"	"	"	

CALIFORNIA LABORATORY SERVICES

Page 5 of 24

11/12/13 15:54

Alpha Analytical, Inc.-Sparks 255 Glendale Ave.; Suite 21 Sparks, NV 89431	Project: HDR13102820 Project Number: HDR1310282- Project Manager: Reyna Vallejo	CLS Work Order #: CWK0135 COC #:
--	---	-------------------------------------

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HDR13102820-03A (B02-03-SO-10252013) (CWK0135-02) Soil Sampled: 10/25/13 10:00 Received: 11/05/13 07:50									
4,4'-DDD	ND	150	µg/kg	10	CW07385	"	11/08/13	EPA 8081A	
4,4'-DDE	ND	150	"	"	"	"	"	"	
4,4'-DDT	ND	150	"	"	"	"	"	"	
Dieldrin	ND	10	"	"	"	"	"	"	
Endosulfan I	ND	150	"	"	"	"	"	"	
Endosulfan II	ND	150	"	"	"	"	"	"	
Endosulfan sulfate	ND	150	"	"	"	"	"	"	
Endrin	ND	150	"	"	"	"	"	"	
Endrin aldehyde	ND	150	"	"	"	"	"	"	
Heptachlor	ND	50	"	"	"	"	"	"	
Heptachlor epoxide	ND	20	"	"	"	"	"	"	
Methoxychlor	ND	150	"	"	"	"	"	"	
Mirex	ND	100	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	

Surrogate: Tetrachloro-meta-xylene

108 % 46-139

Surrogate: Decachlorobiphenyl

107 % 52-141

HDR13102820-06A (B03-03-SO-10242013) (CWK0135-03) Soil Sampled: 10/24/13 08:37 Received: 11/05/13 07:50

Aldrin	ND	10	µg/kg	10	CW07385	11/06/13	11/08/13	EPA 8081A	
alpha-BHC	ND	20	"	"	"	"	"	"	
beta-BHC	ND	100	"	"	"	"	"	"	
delta-BHC	ND	100	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	100	"	"	"	"	"	"	
Chlordane-technical	ND	200	"	"	"	"	"	"	
4,4'-DDD	ND	150	"	"	"	"	"	"	
4,4'-DDE	ND	150	"	"	"	"	"	"	
4,4'-DDT	ND	150	"	"	"	"	"	"	
Dieldrin	ND	10	"	"	"	"	"	"	
Endosulfan I	ND	150	"	"	"	"	"	"	
Endosulfan II	ND	150	"	"	"	"	"	"	

CA DOHS ELAP Accreditation/Registration Number 1233

CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave.; Suite 21 Sparks, NV 89431	Project: HDR13102820 Project Number: HDR1310282- Project Manager: Reyna Vallejo	CLS Work Order #: CWK0135 COC #:
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Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HDR13102820-06A (B03-03-SO-10242013) (CWK0135-03) Soil Sampled: 10/24/13 08:37 Received: 11/05/13 07:50									
Endosulfan sulfate	ND	150	µg/kg	10	CW07385	"	11/08/13	EPA 8081A	
Endrin	ND	150	"	"	"	"	"	"	
Endrin aldehyde	ND	150	"	"	"	"	"	"	
Heptachlor	ND	50	"	"	"	"	"	"	
Heptachlor epoxide	ND	20	"	"	"	"	"	"	
Methoxychlor	ND	150	"	"	"	"	"	"	
Mirex	ND	100	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	

Surrogate: Tetrachloro-meta-xylene

95 % 46-139

Surrogate: Decachlorobiphenyl

117 % 52-141

HDR13102820-08A (B04-03-SO-10242013) (CWK0135-04) Soil Sampled: 10/24/13 10:10 Received: 11/05/13 07:50

Aldrin	ND	10	µg/kg	10	CW07385	11/06/13	11/08/13	EPA 8081A	
alpha-BHC	ND	20	"	"	"	"	"	"	
beta-BHC	ND	100	"	"	"	"	"	"	
delta-BHC	ND	100	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	100	"	"	"	"	"	"	
Chlordane-technical	ND	200	"	"	"	"	"	"	
4,4'-DDD	ND	150	"	"	"	"	"	"	
4,4'-DDE	ND	150	"	"	"	"	"	"	
4,4'-DDT	ND	150	"	"	"	"	"	"	
Dieldrin	ND	10	"	"	"	"	"	"	
Endosulfan I	ND	150	"	"	"	"	"	"	
Endosulfan II	ND	150	"	"	"	"	"	"	
Endosulfan sulfate	ND	150	"	"	"	"	"	"	
Endrin	ND	150	"	"	"	"	"	"	
Endrin aldehyde	ND	150	"	"	"	"	"	"	
Heptachlor	ND	50	"	"	"	"	"	"	
Heptachlor epoxide	ND	20	"	"	"	"	"	"	
Methoxychlor	ND	150	"	"	"	"	"	"	

CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave.; Suite 21 Sparks, NV 89431	Project: HDR13102820 Project Number: HDR1310282- Project Manager: Reyna Vallejo	CLS Work Order #: CWK0135 COC #:
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Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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HDR13102820-08A (B04-03-SO-10242013) (CWK0135-04) Soil **Sampled: 10/24/13 10:10** **Received: 11/05/13 07:50**

Mirex	ND	100	µg/kg	10	CW07385	"	11/08/13	EPA 8081A	
Toxaphene	ND	200	"	"	"	"	"	"	

<i>Surrogate: Tetrachloro-meta-xylene</i>		63 %	46-139	"	"	"	"	"	
<i>Surrogate: Decachlorobiphenyl</i>		96 %	52-141	"	"	"	"	"	

HDR13102820-10A (B05-03-SO-10252013) (CWK0135-05) Soil **Sampled: 10/25/13 07:45** **Received: 11/05/13 07:50**

Aldrin	ND	10	µg/kg	10	CW07385	11/06/13	11/08/13	EPA 8081A	
alpha-BHC	ND	20	"	"	"	"	"	"	
beta-BHC	ND	100	"	"	"	"	"	"	
delta-BHC	ND	100	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	100	"	"	"	"	"	"	
Chlordane-technical	ND	200	"	"	"	"	"	"	
4,4'-DDD	ND	150	"	"	"	"	"	"	
4,4'-DDE	ND	150	"	"	"	"	"	"	
4,4'-DDT	ND	150	"	"	"	"	"	"	
Dieldrin	ND	10	"	"	"	"	"	"	
Endosulfan I	ND	150	"	"	"	"	"	"	
Endosulfan II	ND	150	"	"	"	"	"	"	
Endosulfan sulfate	ND	150	"	"	"	"	"	"	
Endrin	ND	150	"	"	"	"	"	"	
Endrin aldehyde	ND	150	"	"	"	"	"	"	
Heptachlor	ND	50	"	"	"	"	"	"	
Heptachlor epoxide	ND	20	"	"	"	"	"	"	
Methoxychlor	ND	150	"	"	"	"	"	"	
Mirex	ND	100	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	

<i>Surrogate: Tetrachloro-meta-xylene</i>		82 %	46-139	"	"	"	"	"	
<i>Surrogate: Decachlorobiphenyl</i>		109 %	52-141	"	"	"	"	"	

CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave.; Suite 21 Sparks, NV 89431	Project: HDR13102820 Project Number: HDR1310282- Project Manager: Reyna Vallejo	CLS Work Order #: CWK0135 COC #:
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Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HDR13102820-12A (B06-03-SO-1024013) (CWK0135-06) Soil Sampled: 10/24/13 10:55 Received: 11/05/13 07:50									
Aldrin	ND	10	µg/kg	10	CW07385	11/06/13	11/08/13	EPA 8081A	
alpha-BHC	ND	20	"	"	"	"	"	"	
beta-BHC	ND	100	"	"	"	"	"	"	
delta-BHC	ND	100	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	100	"	"	"	"	"	"	
Chlordane-technical	ND	200	"	"	"	"	"	"	
4,4'-DDD	ND	150	"	"	"	"	"	"	
4,4'-DDE	ND	150	"	"	"	"	"	"	
4,4'-DDT	ND	150	"	"	"	"	"	"	
Dieldrin	ND	10	"	"	"	"	"	"	
Endosulfan I	ND	150	"	"	"	"	"	"	
Endosulfan II	ND	150	"	"	"	"	"	"	
Endosulfan sulfate	ND	150	"	"	"	"	"	"	
Endrin	ND	150	"	"	"	"	"	"	
Endrin aldehyde	ND	150	"	"	"	"	"	"	
Heptachlor	ND	50	"	"	"	"	"	"	
Heptachlor epoxide	ND	20	"	"	"	"	"	"	
Methoxychlor	ND	150	"	"	"	"	"	"	
Mirex	ND	100	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	

<i>Surrogate: Tetrachloro-meta-xylene</i>	108 %	46-139	"	"	"	"	"	"	
<i>Surrogate: Decachlorobiphenyl</i>	130 %	52-141	"	"	"	"	"	"	

HDR13102820-14A (B07-03-SO-1024013) (CWK0135-07) Soil Sampled: 10/24/13 13:40 Received: 11/05/13 07:50									
Aldrin	ND	10	µg/kg	10	CW07385	11/06/13	11/08/13	EPA 8081A	
alpha-BHC	ND	20	"	"	"	"	"	"	
beta-BHC	ND	100	"	"	"	"	"	"	
delta-BHC	ND	100	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	100	"	"	"	"	"	"	
Chlordane-technical	ND	200	"	"	"	"	"	"	

CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave., Suite 21 Sparks, NV 89431	Project: HDR13102820 Project Number: HDR1310282- Project Manager: Reyna Vallejo	CLS Work Order #: CWK0135 COC #:
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Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HDR13102820-14A (B07-03-SO-1024013) (CWK0135-07) Soil Sampled: 10/24/13 13:40 Received: 11/05/13 07:50									
4,4'-DDD	ND	150	µg/kg	10	CW07385	"	11/08/13	EPA 8081A	
4,4'-DDE	ND	150	"	"	"	"	"	"	
4,4'-DDT	ND	150	"	"	"	"	"	"	
Dieldrin	ND	10	"	"	"	"	"	"	
Endosulfan I	ND	150	"	"	"	"	"	"	
Endosulfan II	ND	150	"	"	"	"	"	"	
Endosulfan sulfate	ND	150	"	"	"	"	"	"	
Endrin	ND	150	"	"	"	"	"	"	
Endrin aldehyde	ND	150	"	"	"	"	"	"	
Heptachlor	ND	50	"	"	"	"	"	"	
Heptachlor epoxide	ND	20	"	"	"	"	"	"	
Methoxychlor	ND	150	"	"	"	"	"	"	
Mirex	ND	100	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	

Surrogate: Tetrachloro-meta-xylene

74 % 46-139

Surrogate: Decachlorobiphenyl

104 % 52-141

HDR13102820-16A (B08-03-SO-1024013) (CWK0135-08) Soil Sampled: 10/24/13 14:05 Received: 11/05/13 07:50

Aldrin	ND	10	µg/kg	10	CW07385	11/06/13	11/08/13	EPA 8081A	
alpha-BHC	ND	20	"	"	"	"	"	"	
beta-BHC	ND	100	"	"	"	"	"	"	
delta-BHC	ND	100	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	100	"	"	"	"	"	"	
Chlordane-technical	ND	200	"	"	"	"	"	"	
4,4'-DDD	ND	150	"	"	"	"	"	"	
4,4'-DDE	ND	150	"	"	"	"	"	"	
4,4'-DDT	ND	150	"	"	"	"	"	"	
Dieldrin	ND	10	"	"	"	"	"	"	
Endosulfan I	ND	150	"	"	"	"	"	"	
Endosulfan II	ND	150	"	"	"	"	"	"	

CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave., Suite 21 Sparks, NV 89431	Project: HDR13102820 Project Number: HDR1310282- Project Manager: Reyna Vallejo	CLS Work Order #: CWK0135 COC #:
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Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HDR13102820-16A (B08-03-SO-1024013) (CWK0135-08) Soil Sampled: 10/24/13 14:05 Received: 11/05/13 07:50									
Endosulfan sulfate	ND	150	µg/kg	10	CW07385	"	11/08/13	EPA 8081A	
Endrin	ND	150	"	"	"	"	"	"	
Endrin aldehyde	ND	150	"	"	"	"	"	"	
Heptachlor	ND	50	"	"	"	"	"	"	
Heptachlor epoxide	ND	20	"	"	"	"	"	"	
Methoxychlor	ND	150	"	"	"	"	"	"	
Mirex	ND	100	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	

Surrogate: Tetrachloro-meta-xylene

111 %

46-139

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Surrogate: Decachlorobiphenyl

109 %

52-141

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HDR13102820-18A (B09-03-SO-1024013) (CWK0135-09) Soil **Sampled: 10/24/13 15:00** **Received: 11/05/13 07:50**

Aldrin	ND	10	µg/kg	10	CW07385	11/06/13	11/08/13	EPA 8081A	
alpha-BHC	ND	20	"	"	"	"	"	"	
beta-BHC	ND	100	"	"	"	"	"	"	
delta-BHC	ND	100	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	100	"	"	"	"	"	"	
Chlordane-technical	ND	200	"	"	"	"	"	"	
4,4'-DDD	ND	150	"	"	"	"	"	"	
4,4'-DDE	ND	150	"	"	"	"	"	"	
4,4'-DDT	ND	150	"	"	"	"	"	"	
Dieldrin	ND	10	"	"	"	"	"	"	
Endosulfan I	ND	150	"	"	"	"	"	"	
Endosulfan II	ND	150	"	"	"	"	"	"	
Endosulfan sulfate	ND	150	"	"	"	"	"	"	
Endrin	ND	150	"	"	"	"	"	"	
Endrin aldehyde	ND	150	"	"	"	"	"	"	
Heptachlor	ND	50	"	"	"	"	"	"	
Heptachlor epoxide	ND	20	"	"	"	"	"	"	
Methoxychlor	ND	150	"	"	"	"	"	"	

CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave., Suite 21 Sparks, NV 89431	Project: HDR13102820 Project Number: HDR1310282- Project Manager: Reyna Vallejo	CLS Work Order #: CWK0135 COC #:
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Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HDR13102820-18A (B09-03-SO-1024013) (CWK0135-09) Soil Sampled: 10/24/13 15:00 Received: 11/05/13 07:50									
Mirex	ND	100	µg/kg	10	CW07385	"	11/08/13	EPA 8081A	
Toxaphene	ND	200	"	"	"	"	"	"	

Surrogate: Tetrachloro-meta-xylene

114 %

46-139

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Surrogate: Decachlorobiphenyl

107 %

52-141

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HDR13102820-20A (B10-03-SO-1025013) (CWK0135-10) Soil Sampled: 10/25/13 09:20 Received: 11/05/13 07:50

Aldrin	ND	10	µg/kg	10	CW07385	11/06/13	11/08/13	EPA 8081A	
alpha-BHC	ND	20	"	"	"	"	"	"	
beta-BHC	ND	100	"	"	"	"	"	"	
delta-BHC	ND	100	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	100	"	"	"	"	"	"	
Chlordane-technical	ND	200	"	"	"	"	"	"	
4,4'-DDD	ND	150	"	"	"	"	"	"	
4,4'-DDE	ND	150	"	"	"	"	"	"	
4,4'-DDT	ND	150	"	"	"	"	"	"	
Dieldrin	ND	10	"	"	"	"	"	"	
Endosulfan I	ND	150	"	"	"	"	"	"	
Endosulfan II	ND	150	"	"	"	"	"	"	
Endosulfan sulfate	ND	150	"	"	"	"	"	"	
Endrin	ND	150	"	"	"	"	"	"	
Endrin aldehyde	ND	150	"	"	"	"	"	"	
Heptachlor	ND	50	"	"	"	"	"	"	
Heptachlor epoxide	ND	20	"	"	"	"	"	"	
Methoxychlor	ND	150	"	"	"	"	"	"	
Mirex	ND	100	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	

Surrogate: Tetrachloro-meta-xylene

128 %

46-139

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Surrogate: Decachlorobiphenyl

121 %

52-141

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Alpha Analytical, Inc.-Sparks 255 Glendale Ave.; Suite 21 Sparks, NV 89431	Project: HDR13102820 Project Number: HDR1310282- Project Manager: Reyna Vallejo	CLS Work Order #: CWK0135 COC #:
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Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HDR13102820-23A (B11-03-SO-1024013) (CWK0135-11) Soil Sampled: 10/24/13 15:40 Received: 11/05/13 07:50									
Aldrin	ND	10	µg/kg	10	CW07385	11/06/13	11/08/13	EPA 8081A	
alpha-BHC	ND	20	"	"	"	"	"	"	
beta-BHC	ND	100	"	"	"	"	"	"	
delta-BHC	ND	100	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	100	"	"	"	"	"	"	
Chlordane-technical	ND	200	"	"	"	"	"	"	
4,4'-DDD	ND	150	"	"	"	"	"	"	
4,4'-DDE	ND	150	"	"	"	"	"	"	
4,4'-DDT	ND	150	"	"	"	"	"	"	
Dieldrin	ND	10	"	"	"	"	"	"	
Endosulfan I	ND	150	"	"	"	"	"	"	
Endosulfan II	ND	150	"	"	"	"	"	"	
Endosulfan sulfate	ND	150	"	"	"	"	"	"	
Endrin	ND	150	"	"	"	"	"	"	
Endrin aldehyde	ND	150	"	"	"	"	"	"	
Heptachlor	ND	50	"	"	"	"	"	"	
Heptachlor epoxide	ND	20	"	"	"	"	"	"	
Methoxychlor	ND	150	"	"	"	"	"	"	
Mirex	ND	100	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	

Surrogate: Tetrachloro-meta-xylene 124 % 46-139 " " " "

Surrogate: Decachlorobiphenyl 109 % 52-141 " " " "

HDR13102820-25A (B12-03-SO-1024013) (CWK0135-12) Soil Sampled: 10/24/13 16:20 Received: 11/05/13 07:50									
Aldrin	ND	10	µg/kg	10	CW07385	11/06/13	11/08/13	EPA 8081A	
alpha-BHC	ND	20	"	"	"	"	"	"	
beta-BHC	ND	100	"	"	"	"	"	"	
delta-BHC	ND	100	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	100	"	"	"	"	"	"	
Chlordane-technical	ND	200	"	"	"	"	"	"	

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Alpha Analytical, Inc.-Sparks 255 Glendale Ave.; Suite 21 Sparks, NV 89431	Project: HDR13102820 Project Number: HDR1310282- Project Manager: Reyna Vallejo	CLS Work Order #: CWK0135 COC #:
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Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HDR13102820-25A (B12-03-SO-1024013) (CWK0135-12) Soil Sampled: 10/24/13 16:20 Received: 11/05/13 07:50									
4,4'-DDD	ND	150	µg/kg	10	CW07385	"	11/08/13	EPA 8081A	
4,4'-DDE	ND	150	"	"	"	"	"	"	
4,4'-DDT	ND	150	"	"	"	"	"	"	
Dieldrin	ND	10	"	"	"	"	"	"	
Endosulfan I	ND	150	"	"	"	"	"	"	
Endosulfan II	ND	150	"	"	"	"	"	"	
Endosulfan sulfate	ND	150	"	"	"	"	"	"	
Endrin	ND	150	"	"	"	"	"	"	
Endrin aldehyde	ND	150	"	"	"	"	"	"	
Heptachlor	ND	50	"	"	"	"	"	"	
Heptachlor epoxide	ND	20	"	"	"	"	"	"	
Methoxychlor	ND	150	"	"	"	"	"	"	
Mirex	ND	100	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	

Surrogate: Tetrachloro-meta-xylene

110 %

46-139

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Surrogate: Decachlorobiphenyl

107 %

52-141

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HDR13102820-27A (B13-03-SO-1024013) (CWK0135-13) Soil Sampled: 10/24/13 12:45 Received: 11/05/13 07:50

Aldrin	ND	10	µg/kg	10	CW07385	11/06/13	11/08/13	EPA 8081A	
alpha-BHC	ND	20	"	"	"	"	"	"	
beta-BHC	ND	100	"	"	"	"	"	"	
delta-BHC	ND	100	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	100	"	"	"	"	"	"	
Chlordane-technical	ND	200	"	"	"	"	"	"	
4,4'-DDD	ND	150	"	"	"	"	"	"	
4,4'-DDE	ND	150	"	"	"	"	"	"	
4,4'-DDT	ND	150	"	"	"	"	"	"	
Dieldrin	ND	10	"	"	"	"	"	"	
Endosulfan I	ND	150	"	"	"	"	"	"	
Endosulfan II	ND	150	"	"	"	"	"	"	

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Alpha Analytical, Inc.-Sparks 255 Glendale Ave.; Suite 21 Sparks, NV 89431	Project: HDR13102820 Project Number: HDR1310282- Project Manager: Reyna Vallejo	CLS Work Order #: CWK0135 COC #:
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Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HDR13102820-27A (B13-03-SO-1024013) (CWK0135-13) Soil Sampled: 10/24/13 12:45 Received: 11/05/13 07:50									
Endosulfan sulfate	ND	150	µg/kg	10	CW07385	"	11/08/13	EPA 8081A	
Endrin	ND	150	"	"	"	"	"	"	
Endrin aldehyde	ND	150	"	"	"	"	"	"	
Heptachlor	ND	50	"	"	"	"	"	"	
Heptachlor epoxide	ND	20	"	"	"	"	"	"	
Methoxychlor	ND	150	"	"	"	"	"	"	
Mirex	ND	100	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
<i>Surrogate: Tetrachloro-meta-xylene</i>		113 %		46-139	"	"	"	"	
<i>Surrogate: Decachlorobiphenyl</i>		101 %		52-141	"	"	"	"	

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CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave.; Suite 21 Sparks, NV 89431	Project: HDR13102820 Project Number: HDR1310282- Project Manager: Reyna Vallejo	CLS Work Order #: CWK0135 COC #:
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Polychlorinated Biphenyls by EPA Method 8082A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HDR13102820-06A (B03-03-SO-10242013) (CWK0135-03) Soil Sampled: 10/24/13 08:37 Received: 11/05/13 07:50									
Aroclor 1268	ND	20	µg/kg	1	CW07331	"	11/07/13	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl</i>		51 %	50-150		"	"	"	"	
HDR13102820-08A (B04-03-SO-10242013) (CWK0135-04) Soil Sampled: 10/24/13 10:10 Received: 11/05/13 07:50									
Aroclor 1016	ND	20	µg/kg	1	CW07331	11/05/13	11/07/13	EPA 8082A	
Aroclor 1221	ND	20	"	"	"	"	"	"	
Aroclor 1232	ND	20	"	"	"	"	"	"	
Aroclor 1242	ND	20	"	"	"	"	"	"	
Aroclor 1248	ND	20	"	"	"	"	"	"	
Aroclor 1254	ND	20	"	"	"	"	"	"	
Aroclor 1260	ND	20	"	"	"	"	"	"	
Aroclor 1268	ND	20	"	"	"	"	"	"	
<i>Surrogate: Decachlorobiphenyl</i>		50 %	50-150		"	"	"	"	
HDR13102820-10A (B05-03-SO-10252013) (CWK0135-05) Soil Sampled: 10/25/13 07:45 Received: 11/05/13 07:50									
Aroclor 1016	ND	20	µg/kg	1	CW07331	11/05/13	11/07/13	EPA 8082A	
Aroclor 1221	ND	20	"	"	"	"	"	"	
Aroclor 1232	ND	20	"	"	"	"	"	"	
Aroclor 1242	ND	20	"	"	"	"	"	"	
Aroclor 1248	ND	20	"	"	"	"	"	"	
Aroclor 1254	ND	20	"	"	"	"	"	"	
Aroclor 1260	ND	20	"	"	"	"	"	"	
Aroclor 1268	ND	20	"	"	"	"	"	"	
<i>Surrogate: Decachlorobiphenyl</i>		68 %	50-150		"	"	"	"	

CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave.; Suite 21 Sparks, NV 89431	Project: HDR13102820 Project Number: HDR1310282- Project Manager: Reyna Vallejo	CLS Work Order #: CWK0135 COC #:
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Polychlorinated Biphenyls by EPA Method 8082A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HDR13102820-12A (B06-03-SO-1024013) (CWK0135-06) Soil Sampled: 10/24/13 10:55 Received: 11/05/13 07:50									
Aroclor 1016	ND	20	µg/kg	1	CW07331	11/05/13	11/07/13	EPA 8082A	
Aroclor 1221	ND	20	"	"	"	"	"	"	
Aroclor 1232	ND	20	"	"	"	"	"	"	
Aroclor 1242	ND	20	"	"	"	"	"	"	
Aroclor 1248	ND	20	"	"	"	"	"	"	
Aroclor 1254	ND	20	"	"	"	"	"	"	
Aroclor 1260	28	20	"	"	"	"	"	"	
Aroclor 1268	ND	20	"	"	"	"	"	"	

Surrogate: Decachlorobiphenyl 55 % 50-150 " " " "

HDR13102820-14A (B07-03-SO-1024013) (CWK0135-07) Soil Sampled: 10/24/13 13:40 Received: 11/05/13 07:50									
Aroclor 1016	ND	20	µg/kg	1	CW07331	11/05/13	11/07/13	EPA 8082A	
Aroclor 1221	ND	20	"	"	"	"	"	"	
Aroclor 1232	ND	20	"	"	"	"	"	"	
Aroclor 1242	ND	20	"	"	"	"	"	"	
Aroclor 1248	ND	20	"	"	"	"	"	"	
Aroclor 1254	ND	20	"	"	"	"	"	"	
Aroclor 1260	ND	20	"	"	"	"	"	"	
Aroclor 1268	ND	20	"	"	"	"	"	"	

Surrogate: Decachlorobiphenyl 77 % 50-150 " " " "

HDR13102820-16A (B08-03-SO-1024013) (CWK0135-08) Soil Sampled: 10/24/13 14:05 Received: 11/05/13 07:50									
Aroclor 1016	ND	20	µg/kg	1	CW07331	11/05/13	11/07/13	EPA 8082A	
Aroclor 1221	ND	20	"	"	"	"	"	"	
Aroclor 1232	ND	20	"	"	"	"	"	"	
Aroclor 1242	ND	20	"	"	"	"	"	"	
Aroclor 1248	ND	20	"	"	"	"	"	"	
Aroclor 1254	ND	20	"	"	"	"	"	"	
Aroclor 1260	ND	20	"	"	"	"	"	"	

CALIFORNIA LABORATORY SERVICES

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11/12/13 15:54

Alpha Analytical, Inc.-Sparks 255 Glendale Ave.; Suite 21 Sparks, NV 89431	Project: HDR13102820 Project Number: HDR1310282- Project Manager: Reyna Vallejo	CLS Work Order #: CWK0135 COC #:
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Polychlorinated Biphenyls by EPA Method 8082A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HDR13102820-16A (B08-03-SO-1024013) (CWK0135-08) Soil Sampled: 10/24/13 14:05 Received: 11/05/13 07:50									
Aroclor 1268	ND	20	µg/kg	1	CW07331	"	11/07/13	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl</i>		59 %	50-150		"	"	"	"	
HDR13102820-18A (B09-03-SO-1024013) (CWK0135-09) Soil Sampled: 10/24/13 15:00 Received: 11/05/13 07:50									
Aroclor 1016	ND	20	µg/kg	1	CW07331	11/05/13	11/07/13	EPA 8082A	
Aroclor 1221	ND	20	"	"	"	"	"	"	
Aroclor 1232	ND	20	"	"	"	"	"	"	
Aroclor 1242	ND	20	"	"	"	"	"	"	
Aroclor 1248	ND	20	"	"	"	"	"	"	
Aroclor 1254	ND	20	"	"	"	"	"	"	
Aroclor 1260	ND	20	"	"	"	"	"	"	
Aroclor 1268	ND	20	"	"	"	"	"	"	
<i>Surrogate: Decachlorobiphenyl</i>		52 %	50-150		"	"	"	"	
HDR13102820-20A (B10-03-SO-1025013) (CWK0135-10) Soil Sampled: 10/25/13 09:20 Received: 11/05/13 07:50									
Aroclor 1016	ND	20	µg/kg	1	CW07331	11/05/13	11/07/13	EPA 8082A	
Aroclor 1221	ND	20	"	"	"	"	"	"	
Aroclor 1232	ND	20	"	"	"	"	"	"	
Aroclor 1242	ND	20	"	"	"	"	"	"	
Aroclor 1248	ND	20	"	"	"	"	"	"	
Aroclor 1254	ND	20	"	"	"	"	"	"	
Aroclor 1260	ND	20	"	"	"	"	"	"	
Aroclor 1268	ND	20	"	"	"	"	"	"	
<i>Surrogate: Decachlorobiphenyl</i>		60 %	50-150		"	"	"	"	

CA DOHS ELAP Accreditation/Registration Number 1233

CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave., Suite 21 Sparks, NV 89431	Project: HDR13102820 Project Number: HDR1310282- Project Manager: Reyna Vallejo	CLS Work Order #: CWK0135 COC #:
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Polychlorinated Biphenyls by EPA Method 8082A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HDR13102820-23A (B11-03-SO-1024013) (CWK0135-11) Soil Sampled: 10/24/13 15:40 Received: 11/05/13 07:50									
Aroclor 1016	ND	20	µg/kg	1	CW07331	11/05/13	11/07/13	EPA 8082A	
Aroclor 1221	ND	20	"	"	"	"	"	"	
Aroclor 1232	ND	20	"	"	"	"	"	"	
Aroclor 1242	ND	20	"	"	"	"	"	"	
Aroclor 1248	ND	20	"	"	"	"	"	"	
Aroclor 1254	ND	20	"	"	"	"	"	"	
Aroclor 1260	ND	20	"	"	"	"	"	"	
Aroclor 1268	ND	20	"	"	"	"	"	"	

Surrogate: Decachlorobiphenyl 77 % 50-150 " " " "

HDR13102820-25A (B12-03-SO-1024013) (CWK0135-12) Soil Sampled: 10/24/13 16:20 Received: 11/05/13 07:50									
Aroclor 1016	ND	20	µg/kg	1	CW07331	11/05/13	11/07/13	EPA 8082A	
Aroclor 1221	ND	20	"	"	"	"	"	"	
Aroclor 1232	ND	20	"	"	"	"	"	"	
Aroclor 1242	ND	20	"	"	"	"	"	"	
Aroclor 1248	ND	20	"	"	"	"	"	"	
Aroclor 1254	ND	20	"	"	"	"	"	"	
Aroclor 1260	ND	20	"	"	"	"	"	"	
Aroclor 1268	ND	20	"	"	"	"	"	"	

Surrogate: Decachlorobiphenyl 68 % 50-150 " " " "

HDR13102820-27A (B13-03-SO-1024013) (CWK0135-13) Soil Sampled: 10/24/13 12:45 Received: 11/05/13 07:50									
Aroclor 1016	ND	20	µg/kg	1	CW07331	11/05/13	11/07/13	EPA 8082A	
Aroclor 1221	ND	20	"	"	"	"	"	"	
Aroclor 1232	ND	20	"	"	"	"	"	"	
Aroclor 1242	ND	20	"	"	"	"	"	"	
Aroclor 1248	ND	20	"	"	"	"	"	"	
Aroclor 1254	ND	20	"	"	"	"	"	"	
Aroclor 1260	ND	20	"	"	"	"	"	"	

CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave.; Suite 21 Sparks, NV 89431	Project: HDR13102820 Project Number: HDR1310282- Project Manager: Reyna Vallejo	CLS Work Order #: CWK0135 COC #:
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Organochlorine Pesticides by EPA Method 8081A - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	Limit	Notes
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Batch CW07385 - EPA method 3545

Blank (CW07385-BLK1)

Prepared: 11/06/13 Analyzed: 11/08/13

Aldrin	ND	1.0	µg/kg							
alpha-BHC	ND	2.0	"							
beta-BHC	ND	10	"							
delta-BHC	ND	10	"							
gamma-BHC (Lindane)	ND	10	"							
Chlordane-technical	ND	20	"							
4,4'-DDD	ND	15	"							
4,4'-DDE	ND	15	"							
4,4'-DDT	ND	15	"							
Dieldrin	ND	1.0	"							
Endosulfan I	ND	15	"							
Endosulfan II	ND	15	"							
Endosulfan sulfate	ND	15	"							
Endrin	ND	15	"							
Endrin aldehyde	ND	15	"							
Heptachlor	ND	5.0	"							
Heptachlor epoxide	ND	2.0	"							
Methoxychlor	ND	15	"							
Mirex	ND	10	"							
Toxaphene	ND	20	"							

Surrogate: Tetrachloro-meta-xylene

14.0

"

16.7

84

46-139

Surrogate: Decachlorobiphenyl

16.7

"

16.7

100

52-141

LCS (CW07385-BS1)

Prepared: 11/06/13 Analyzed: 11/08/13

Aldrin	27.7	1.0	µg/kg	33.3		83	47-132
gamma-BHC (Lindane)	28.2	10	"	33.3		85	56-133
4,4'-DDT	31.3	15	"	33.3		94	46-137
Dieldrin	28.7	1.0	"	33.3		86	44-143
Endrin	28.9	15	"	33.3		87	30-147
Heptachlor	28.3	5.0	"	33.3		85	33-148

Surrogate: Tetrachloro-meta-xylene

14.2

"

16.7

85

46-139

CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave., Suite 21 Sparks, NV 89431	Project: HDR13102820 Project Number: HDR1310282- Project Manager: Reyna Vallejo	CLS Work Order #: CWK0135 COC #:
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Organochlorine Pesticides by EPA Method 8081A - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch CW07385 - EPA method 3545

LCS (CW07385-BS1) Prepared: 11/06/13 Analyzed: 11/08/13

Surrogate: Decachlorobiphenyl	16.1		µg/kg	16.7		96	52-141			
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LCS Dup (CW07385-BSD1) Prepared: 11/06/13 Analyzed: 11/08/13

Aldrin	26.4	1.0	µg/kg	33.3		79	47-132	5	30	
gamma-BHC (Lindane)	27.0	10	"	33.3		81	56-133	4	30	
4,4'-DDT	31.1	15	"	33.3		93	46-137	0.7	30	
Dieldrin	27.4	1.0	"	33.3		82	44-143	5	30	
Endrin	27.2	15	"	33.3		82	30-147	6	30	
Heptachlor	26.5	5.0	"	33.3		79	33-148	7	30	

Surrogate: Tetrachloro-meta-xylene	13.7		"	16.7		82	46-139			
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Surrogate: Decachlorobiphenyl	16.2		"	16.7		97	52-141			
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Matrix Spike (CW07385-MS1) Source: CWK0135-01 Prepared: 11/06/13 Analyzed: 11/08/13

Aldrin	27.3	10	µg/kg	33.3	ND	82	47-138			
gamma-BHC (Lindane)	28.6	100	"	33.3	ND	86	38-144			
4,4'-DDT	34.4	150	"	33.3	ND	103	41-157			
Dieldrin	30.1	10	"	33.3	ND	90	46-155			
Endrin	28.8	150	"	33.3	ND	86	34-149			
Heptachlor	55.7	50	"	33.3	ND	167	36-155			QC-2H

Surrogate: Tetrachloro-meta-xylene	16.4		"	16.7		98	46-139			
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Surrogate: Decachlorobiphenyl	15.3		"	16.7		92	52-141			
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Matrix Spike Dup (CW07385-MSD1) Source: CWK0135-01 Prepared: 11/06/13 Analyzed: 11/08/13

Aldrin	27.2	10	µg/kg	33.3	ND	82	47-138	0.4	35	
gamma-BHC (Lindane)	28.3	100	"	33.3	ND	85	38-144	1	35	
4,4'-DDT	34.8	150	"	33.3	ND	104	41-157	1	35	
Dieldrin	30.2	10	"	33.3	ND	90	46-155	0.1	35	
Endrin	28.2	150	"	33.3	ND	84	34-149	2	35	
Heptachlor	30.8	50	"	33.3	ND	92	36-155	58	35	QC-2H

Surrogate: Tetrachloro-meta-xylene	16.4		"	16.7		99	46-139			
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Surrogate: Decachlorobiphenyl	16.4		"	16.7		98	52-141			
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CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave.; Suite 21 Sparks, NV 89431	Project: HDR13102820 Project Number: HDR1310282- Project Manager: Reyna Vallejo	CLS Work Order #: CWK0135 COC #:
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Polychlorinated Biphenyls by EPA Method 8082A - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Notes
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Batch CW07331 - LUFT-DHS GCNV

Blank (CW07331-BLK1)				Prepared & Analyzed: 11/05/13						
Aroclor 1016	ND	20	µg/kg							
Aroclor 1221	ND	20	"							
Aroclor 1232	ND	20	"							
Aroclor 1242	ND	20	"							
Aroclor 1248	ND	20	"							
Aroclor 1254	ND	20	"							
Aroclor 1260	ND	20	"							
Aroclor 1268	ND	20	"							

Surrogate: Decachlorobiphenyl	7.43		"	8.33		89	50-150			
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LCS (CW07331-BS1)				Prepared & Analyzed: 11/05/13						
Aroclor 1260	79.4	20	µg/kg	83.3		95	29-131			
Surrogate: Decachlorobiphenyl	7.80		"	8.33		94	50-150			

LCS Dup (CW07331-BSD1)				Prepared & Analyzed: 11/05/13						
Aroclor 1260	78.6	20	µg/kg	83.3		94	29-131	1	30	
Surrogate: Decachlorobiphenyl	7.67		"	8.33		92	50-150			

Matrix Spike (CW07331-MS1)				Source: CWK0122-02		Prepared & Analyzed: 11/05/13				
Aroclor 1260	60.8	20	µg/kg	83.3	ND	73	29-131			
Surrogate: Decachlorobiphenyl	3.57		"	8.33		43	50-150			QS-4

Matrix Spike Dup (CW07331-MSD1)				Source: CWK0122-02		Prepared & Analyzed: 11/05/13				
Aroclor 1260	63.6	20	µg/kg	83.3	ND	76	29-131	5	30	
Surrogate: Decachlorobiphenyl	3.85		"	8.33		46	50-150			QS-4

CALIFORNIA LABORATORY SERVICES

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Alpha Analytical, Inc.-Sparks
255 Glendale Ave.; Suite 21
Sparks, NV 89431

Project: HDR13102820
Project Number: HDR1310282-
Project Manager: Reyna Vallejo

CLS Work Order #: CWK0135
COC #:

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit (or method detection limit when specified)
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

CA DOHS ELAP Accreditation/Registration Number 1233

3249 Fitzgerald Road Rancho Cordova, CA 95742

www.californialab.com

916-638-7301

Fax: 916-638-4510

Billing Information :

HDR, Inc.
9563 S. Kingston Ct.

Englewood, CO 80112

Client:

HDR, Inc.
2365 Iron Point Road
Suite 300
Folsom, CA 95630

PO :

Client's COC #: none

Job : 028-213932-021/Sunnyvale

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

CHAIN-OF-CUSTODY RECORD

Alpha Analytical, Inc.

255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
TEL: (775) 355-1044 FAX: (775) 355-0406

Report Attention	Phone Number	E Mail Address
Clayton Mokri	(916) 817-4762 x	clayton.mokri@hdrinc.com

AMENDED #2
CA
Page: 1 of 16

WorkOrder : HDRC13102820

Report Due By : 5:00 PM On : 04-Nov-13

Amendment due 12-13-13

EDD Required : No

Sampled by : J. Ruffing

Cooler Temp	Samples Received	Date Printed
0 °C	26-Oct-13	06-Dec-13

Alpha Sample ID	Client Sample ID	Collection Matrix	No. of Bottles Date	Alpha	Sub	TAT	Requested Tests								Sample Remarks
							300_0_W	8081_S	8082_S	BNA_S	METALS_A Q	METALS_S O	METALS_S TLC	N_TKN_W	
HDR13102820-01A	B01-03-SO-10242013	SO	10/24/13 09:50	1	1	5		8081 : SUB	8082 : SUB	8270		As, Ba, Cd, Cr, Pb, Hg, Ag, Se			
HDR13102820-02A	B01-07-SO-10242013	SO	10/24/13 09:55	1	1	5						As, Ba, Cd, Cr, Pb, Hg, Ag, Se			
HDR13102820-03A	B02-03-SO-10252013	SO	10/25/13 10:00	1	1	5		8081 : SUB	8082 : SUB			As, Ba, Cd, Cr, Pb, Hg, Ag, Se			
HDR13102820-04A	B02-07-SO-10252013	SO	10/25/13 10:15	1	1	5						As, Ba, Cd, Cr, Pb, Hg, Ag, Se			
HDR13102820-05A	B02-20-GW-10252013	AQ	10/25/13 10:50	3	0	5	N-Total =(NO2+NO3 +TKN)					As, Ba, Cd, Cr, Pb, Hg, Ag, Se		N-Total =(NO2+NO3 +TKN)	
HDR13102820-06A	B03-03-SO-10242013	SO	10/24/13 08:37	1	1	5		8081 : SUB	8082 : SUB			As, Ba, Cd, Cr, Pb, Hg, Ag, Se			
HDR13102820-07A	B03-07-SO-10242013	SO	10/24/13 08:53	1	1	5						As, Ba, Cd, Cr, Pb, Hg, Ag, Se	STLC Cr		
HDR13102820-08A	B04-03-SO-10242013	SO	10/24/13 10:10	1	1	5		8081 : SUB	8082 : SUB	8270		As, Ba, Cd, Cr, Pb, Hg, Ag, Se	STLC Pb		

Comments: Security seals intact. Frozen ice. Saturday delivery. Samples kept cold and secure until login on Monday. Sample splits made by lab in order to sub 8081/8082 to CLS, due 11/5/13. Amended 10/28/13 14:15 to analyze the following only for 8270, per email : from Clayton: 01A,08A,14A,18A,25A & 27A.KM Amended 12/6/13 13:10 to add STLC Cr to 07A,10A,13A,14A,23A; STLC Pb to 08A & STLC Ba to 27A, 28A on standard TAT, per email from Clayton. Due 12/13/13.KM

Signature	Print Name	Company	Date/Time
<i>K Murray</i>	K Murray	Alpha Analytical, Inc.	12/6/13 1310

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report. Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Billing Information :

HDR, Inc.
9563 S. Kingston Ct.

Englewood, CO 80112

Client:

HDR, Inc.
2365 Iron Point Road
Suite 300
Folsom, CA 95630

PO :

Client's COC # : none

Job : 028-213932-021/Sunnyvale

CHAIN-OF-CUSTODY RECORD

Alpha Analytical, Inc.

255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
TEL: (775) 355-1044 FAX: (775) 355-0406

Report Attention	Phone Number	E Mail Address
Clayton Mokri	(916) 817-4762 x	clayton.mokri@hdrinc.com

AMENDED #2
Page: 2 of 86
CA
WorkOrder : HDRC13102820
Report Due By : 5:00 PM On : 04-Nov-13

EDD Required : No

Sampled by : J. Ruffing

Cooler Temp	Samples Received	Date Printed
0 °C	26-Oct-13	06-Dec-13

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Collection Matrix	No. of Bottles Date	Alpha	Sub	TAT	Requested Tests								Sample Remarks
							300_0_W	8081_S	8082_S	BNA_S	METALS_A Q	METALS_S O	METALS_S TLC	N_TKN_W	
HDR13102820-09A	B04-07-SO-10242013	SO	10/24/13 10:25	1	1	5							As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-10A	B05-03-SO-10252013	SO	10/25/13 07:45	1	1	5		8081 : SUB	8082 : SUB				As, Ba, Cd, Cr, Pb, Hg, Ag, Se	STLC Cr	
HDR13102820-11A	B05-07-SO-10252013	SO	10/25/13 08:20	1	1	5							As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-12A	B06-03-SO-10242013	SO	10/24/13 10:55	1	1	5		8081 : SUB	8082 : SUB				As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-13A	B06-07-SO-10242013	SO	10/24/13 11:20	1	1	5							As, Ba, Cd, Cr, Pb, Hg, Ag, Se	STLC Cr	
HDR13102820-14A	B07-03-SO-10242013	SO	10/24/13 13:40	1	1	5		8081 : SUB	8082 : SUB	8270			As, Ba, Cd, Cr, Pb, Hg, Ag, Se	STLC Cr	Sampling time on tube label is 15:00, logged in per chain.
HDR13102820-15A	B07-07-SO-10242013	SO	10/24/13 13:45	1	1	5							As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-16A	B08-03-SO-10242013	SO	10/24/13 14:05	1	1	5		8081 : SUB	8082 : SUB				As, Ba, Cd, Cr, Pb, Hg, Ag, Se		

Comments: Security seals intact. Frozen ice. Saturday delivery. Samples kept cold and secure until login on Monday. Sample splits made by lab in order to sub 8081/8082 to CLS, due 11/5/13. Amended 10/28/13 14:15 to analyze the following only for 8270, per email : from Clayton: 01A,08A,14A,18A,25A & 27A.KM Amended 12/6/13 13:10 to add STLC Cr to 07A,10A,13A,14A,23A; STLC Pb to 08A & STLC Ba to 27A, 28A on standard TAT, per email from Clayton. Due 12/13/13.KM

Signature	Print Name	Company	Date/Time
Logged in by: <u>JK Murray</u>	<u>JK Murray</u>	Alpha Analytical, Inc.	12/6/13 13:10

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report. Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Billing Information :
 HDR, Inc.
 9563 S. Kingston Ct.
 Englewood, CO 80112

CHAIN-OF-CUSTODY RECORD

Alpha Analytical, Inc.
 255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
 TEL: (775) 355-1044 FAX: (775) 355-0406

AMENDED #2
CA
 Page: 3 of 6

WorkOrder : HDRC13102820
Report Due By : 5:00 PM On : 04-Nov-13

Client :
 HDR, Inc.
 2365 Iron Point Road
 Suite 300
 Folsom, CA 95630

Report Attention	Phone Number	E Mail Address
Clayton Mokri	(916) 817-4762 x	clayton.mokri@hdrinc.com

EDD Required : No

Sampled by : J. Ruffing

PO :
 Client's COC # : none Job : 028-213932-021/Sunnyvale

Cooler Temp Samples Received Date Printed
 0 °C 26-Oct-13 06-Dec-13

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Collection Matrix	No. of Bottles Date	Alpha	Sub	TAT	Requested Tests								Sample Remarks
							300_0_W	8081_S	8082_S	BNA_S	METALS_A Q	METALS_S O	METALS_S TLC	N_TKN_W	
HDR13102820-17A	B08-07-SO-10242013	SO	10/24/13 14:15	1	1	5								As, Ba, Cd, Cr, Pb, Hg, Ag, Se	
HDR13102820-18A	B09-03-SO-10242013	SO	10/24/13 15:00	1	1	5		8081: SUB	8082: SUB	8270				As, Ba, Cd, Cr, Pb, Hg, Ag, Se	
HDR13102820-19A	B09-07-SO-10242013	SO	10/24/13 15:10	1	1	5								As, Ba, Cd, Cr, Pb, Hg, Ag, Se	
HDR13102820-20A	B10-03-SO-10252013	SO	10/25/13 09:20	1	1	5		8081: SUB	8082: SUB					As, Ba, Cd, Cr, Pb, Hg, Ag, Se	
HDR13102820-21A	B10-07-SO-10252013	SO	10/25/13 09:35	1	1	5								As, Ba, Cd, Cr, Pb, Hg, Ag, Se	
HDR13102820-22A	B10-05-GW-10252013	AQ	10/25/13 09:30	3	0	5	N-Total =(NO2+NO3+TKN)							As, Ba, Cd, Cr, Pb, Hg, Ag, Se	N-Total =(NO2+NO3+TKN)
HDR13102820-23A	B11-03-SO-10242013	SO	10/24/13 15:40	1	1	5		8081: SUB	8082: SUB					As, Ba, Cd, Cr, Pb, Hg, Ag, Se	STLC Cr
HDR13102820-24A	B11-07-SO-10242013	SO	10/24/13 15:45	1	1	5								As, Ba, Cd, Cr, Pb, Hg, Ag, Se	

Comments: Security seals intact. Frozen ice. Saturday delivery. Samples kept cold and secure until login on Monday. Sample splits made by lab in order to sub 8081/8082 to CLS, due 11/5/13. Amended 10/28/13 14:15 to analyze the following only for 8270, per email : from Clayton: 01A,08A,14A,18A,25A & 27A.KM Amended 12/6/13 13:10 to add STLC Cr to 07A,10A,13A,14A,23A; STLC Pb to 08A & STLC Ba to 27A, 28A on standard TAT, per email from Clayton. Due 12/13/13.KM

Signature	Print Name	Company	Date/Time
Logged in by: <u>K Murray</u>	<u>K Murray</u>	Alpha Analytical, Inc.	12/6/13 1310

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report. Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Billing Information :
 HDR, Inc.
 9563 S. Kingston Ct.
 Englewood, CO 80112

CHAIN-OF-CUSTODY RECORD

Alpha Analytical, Inc.
 255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
 TEL: (775) 355-1044 FAX: (775) 355-0406

AMENDED #2
 CA Page: 4 of 6

WorkOrder : HDRC13102820
Report Due By : 5:00 PM On : 04-Nov-13

Client:
 HDR, Inc.
 2365 Iron Point Road
 Suite 300
 Folsom, CA 95630

Report Attention	Phone Number	EMail Address
Clayton Mokri	(916) 817-4762 x	clayton.mokri@hdrinc.com

EDD Required : No

Sampled by : J. Ruffing

PO :
 Client's COC # : none Job : 028-213932-021/Sunnyvale

<u>Cooler Temp</u>	<u>Samples Received</u>	<u>Date Printed</u>
0 °C	26-Oct-13	06-Dec-13

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Collection Matrix	No. of Bottles Date	Alpha	Sub	TAT	Requested Tests								Sample Remarks
							300_0_W	8081_S	8082_S	BNA_S	METALS_A Q	METALS_S O	METALS_S TLC	N_TKN_W	
HDR13102820-25A	B12-03-SO-10242013	SO	10/24/13 16:20	1	1	5		8081: SUB	8082: SUB	8270		As, Ba, Cd, Cr, Pb, Hg, Ag, Se			
HDR13102820-26A	B12-07-SO-10242013	SO	10/24/13 16:30	1	1	5						As, Ba, Cd, Cr, Pb, Hg, Ag, Se			
HDR13102820-27A	B13-03-SO-10242013	SO	10/24/13 12:45	1	1	5		8081: SUB	8082: SUB	8270		As, Ba, Cd, Cr, Pb, Hg, Ag, Se	STLC Ba		
HDR13102820-28A	B13-07-SO-10242013	SO	10/24/13 13:00	1	1	5						As, Ba, Cd, Cr, Pb, Hg, Ag, Se	STLC Ba		

Comments: Security seals intact. Frozen ice. Saturday delivery. Samples kept cold and secure until login on Monday. Sample splits made by lab in order to sub 8081/8082 to CLS, due 11/5/13. Amended 10/28/13 14:15 to analyze the following only for 8270, per email : from Clayton: 01A,08A,14A,18A,25A & 27A.KM Amended 12/6/13 13:10 to add STLC Cr to 07A,10A,13A,14A,23A; STLC Pb to 08A & STLC Ba to 27A, 28A on standard TAT, per email from Clayton. Due 12/13/13.KM

Signature	Print Name	Company	Date/Time
Logged in by: <u>K Murray</u>	<u>K Murray</u>	Alpha Analytical, Inc.	12/6/13 13:00

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report.
 Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Billing Information :

HDR, Inc.
9563 S. Kingston Ct.

Englewood, CO 80112

Client:

HDR, Inc.
2365 Iron Point Road
Suite 300
Folsom, CA 95630

PO :

Client's COC # : none

Job : 028-213932-021/Sunnyvale

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

CHAIN-OF-CUSTODY RECORD

Alpha Analytical, Inc.

255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
TEL: (775) 355-1044 FAX: (775) 355-0406

Report Attention	Phone Number	E-Mail Address
Clayton Mokri	(916) 817-4762 x	clayton.mokri@hdrinc.com

AMENDED #2
CA
Page: 4 of 6 ⁵⁰⁶

WorkOrder : HDRC13102820

Report Due By : 5:00 PM On : 04-Nov-13

EDD Required : No

Sampled by : J. Ruffing

Cooler Temp	Samples Received	Date Printed
0 °C	26-Oct-13	06-Dec-13

Alpha Sample ID	Client Sample ID	Collection Matrix	No. of Bottles Date	Alpha	Sub	TAT	Requested Tests						Sample Remarks	
							N_TOTAL_W	TDS_W						
HDR13102820-01A	B01-03-SO-10242013	SO	10/24/13 09:50	1	1	5								
HDR13102820-02A	B01-07-SO-10242013	SO	10/24/13 09:55	1	1	5								
HDR13102820-03A	B02-03-SO-10252013	SO	10/25/13 10:00	1	1	5								
HDR13102820-04A	B02-07-SO-10252013	SO	10/25/13 10:15	1	1	5								
HDR13102820-05A	B02-20-GW-10252013	AQ	10/25/13 10:50	3	0	5	N-Total =(NO2+NO3 +TKN)	TDS						
HDR13102820-06A	B03-03-SO-10242013	SO	10/24/13 08:37	1	1	5								
HDR13102820-07A	B03-07-SO-10242013	SO	10/24/13 08:53	1	1	5								
HDR13102820-08A	B04-03-SO-10242013	SO	10/24/13 10:10	1	1	5								
HDR13102820-09A	B04-07-SO-10242013	SO	10/24/13 10:25	1	1	5								
HDR13102820-10A	B05-03-SO-10252013	SO	10/25/13 07:45	1	1	5								

Comments: Security seals intact. Frozen ice. Saturday delivery. Samples kept cold and secure until login on Monday. Sample splits made by lab in order to sub 8081/8082 to CLS, due 11/5/13. Amended 10/28/13 14:15 to analyze the following only for 8270, per email : from Clayton: 01A,08A,14A,18A,25A & 27A,KM Amended 12/6/13 13:10 to add STLC Cr to 07A,10A,13A,14A,23A; STLC Pb to 08A & STLC Ba to 27A, 28A on standard TAT, per email from Clayton. Due 12/13/13.KM

Signature	Print Name	Company	Date/Time
<i>K Murray</i>	K Murray	Alpha Analytical, Inc.	12/6/13 1310

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report. Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Billing Information :

HDR, Inc.
9563 S. Kingston Ct.

Englewood, CO 80112

Client:

HDR, Inc.
2365 Iron Point Road
Suite 300
Folsom, CA 95630

PO :

Client's COC # : none

Job : 028-213932-021/Sunnyvale

CHAIN-OF-CUSTODY RECORD

Alpha Analytical, Inc.

255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778

TEL: (775) 355-1044 FAX: (775) 355-0406

AMENDED #2

Page: 6 of 6

CA

WorkOrder : HDRC13102820

Report Due By : 5:00 PM On : 04-Nov-13

Report Attention	Phone Number	EEmail Address
Clayton Mokri	(916) 817-4762 x	clayton.mokri@hdrinc.com

EDD Required : No

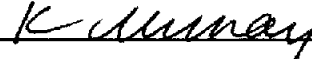
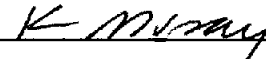
Sampled by : J. Ruffing

Cooler Temp	Samples Received	Date Printed
0 °C	26-Oct-13	06-Dec-13

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Collection Matrix	No. of Bottles Date	Alpha	Sub	TAT	Requested Tests						Sample Remarks	
							N_TOTAL_W	TDS_W						
HDR13102820-21A	B10-07-SO-10252013	SO	10/25/13 09:35	1	1	5								
HDR13102820-22A	B10-05-GW-10252013	AQ	10/25/13 09:30	3	0	5	N-Total =(NO2+NO3 +TKN)	TDS						
HDR13102820-23A	B11-03-SO-10242013	SO	10/24/13 15:40	1	1	5								
HDR13102820-24A	B11-07-SO-10242013	SO	10/24/13 15:45	1	1	5								
HDR13102820-25A	B12-03-SO-10242013	SO	10/24/13 16:20	1	1	5								
HDR13102820-26A	B12-07-SO-10242013	SO	10/24/13 16:30	1	1	5								
HDR13102820-27A	B13-03-SO-10242013	SO	10/24/13 12:45	1	1	5								
HDR13102820-28A	B13-07-SO-10242013	SO	10/24/13 13:00	1	1	5								

Comments: Security seals intact. Frozen ice. Saturday delivery. Samples kept cold and secure until login on Monday. Sample splits made by lab in order to sub 8081/8082 to CLS, due 11/5/13. Amended 10/28/13 14:15 to analyze the following only for 8270, per email : from Clayton: 01A,08A,14A,18A,25A & 27A.KM Amended 12/6/13 13:10 to add STLC Cr to 07A,10A,13A,14A,23A; STLC Pb to 08A & STLC Ba to 27A, 28A on standard TAT, per email from Clayton. Due 12/13/13.KM

Signature	Print Name	Company	Date/Time
		Alpha Analytical, Inc.	12/6/13 1310

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report. Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Billing information :
 HDR, Inc.
 9563 S. Kingston Ct.
 Englewood, CO 80112

CHAIN-OF-CUSTODY RECORD

Alpha Analytical, Inc.
 255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
 TEL: (775) 355-1044 FAX: (775) 355-0406

AMENDED
CA

WorkOrder : HDRC13102820
 Report Due By : 5:00 PM On : 04-Nov-13

Client:
 HDR, Inc.
 2365 Iron Point Road
 Suite 300
 Folsom, CA 95630

Report Attention	Phone Number	EEmail Address
Clayton Mokri	(916) 817-4762 x	clayton.mokri@hdrinc.com

EDD Required : *Yes* *N*

Sampled by : J. Ruffing

PO :
 Client's COC # : none Job : 028-213932-021/Sunnyvale

Cooler Temp	Samples Received	Date Printed
0 °C	26-Oct-13	28-Oct-13

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Collection Matrix	No. of Bottles Date	Alpha	Sub	TAT	Requested Tests								Sample Remarks
							300_0_W	8081_S	8082_S	BNA_S	METALS_A_Q	METALS_S_O	N_TKN_W	N_TOTAL_W	
HDR13102820-01A	B01-03-SO-10242013	SO	10/24/13 09:50	1	1	5		8081 : SUB	8082 : SUB	8270			As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-02A	B01-07-SO-10242013	SO	10/24/13 09:55	1	1	5							As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-03A	B02-03-SO-10252013	SO	10/25/13 10:00	1	1	5		8081 : SUB	8082 : SUB				As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-04A	B02-07-SO-10252013	SO	10/25/13 10:15	1	1	5							As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-05A	B02-20-GW-10252013	AQ	10/25/13 10:50	3	0	5	N-Total =(NO2+NO3+TKN)						As, Ba, Cd, Cr, Pb, Hg, Ag, Se	N-Total =(NO2+NO3+TKN)	N-Total =(NO2+NO3+TKN)
HDR13102820-06A	B03-03-SO-10242013	SO	10/24/13 08:37	1	1	5		8081 : SUB	8082 : SUB				As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-07A	B03-07-SO-10242013	SO	10/24/13 08:53	1	1	5							As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-08A	B04-03-SO-10242013	SO	10/24/13 10:10	1	1	5		8081 : SUB	8082 : SUB	8270			As, Ba, Cd, Cr, Pb, Hg, Ag, Se		

Comments: Security seals intact. Frozen ice. Saturday delivery. Samples kept cold and secure until login on Monday. Sample splits made by lab in order to sub 8081/8082 to CLS, due 11/5/13. Amended 10/28/13 14:15 to analyze the following only for 8270, per email : from Clayton: 01A, 08A, 14A, 18A, 25A & 27A.KM

Signature	Print Name	Company	Date/Time
<i>K. Murray</i>	K Murray	Alpha Analytical, Inc.	10/28/13 14:15

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report.

Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Billing Information :

HDR, Inc.
9563 S. Kingston Ct.

Englewood, CO 80112

CHAIN-OF-CUSTODY RECORD

Alpha Analytical, Inc.
255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
TEL: (775) 355-1044 FAX: (775) 355-0406

**AMENDED
CA**

WorkOrder : HDRC13102820
Report Due By : 5:00 PM On : 04-Nov-13

Client:

HDR, Inc.
2365 Iron Point Road
Suite 300
Folsom, CA 95630

Report Attention	Phone Number	E-Mail Address
Clayton Mokri	(916) 817-4762 x	clayton.mokri@hdrinc.com

EDD Required : Yes

Sampled by : J. Ruffing

PO :

Client's COC # : none Job : 028-213932-021/Sunnyvale

Cooler Temp	Samples Received	Date Printed
0 °C	26-Oct-13	28-Oct-13

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Collection Matrix	No. of Bottles Alpha Sub TAT	Requested Tests								Sample Remarks
				300_0_W	8081_S	8082_S	BNA_S	METALS_A_Q	METALS_S_O	N_TKN_W	N_TOTAL_W	
HDR13102820-09A	B04-07-SO-10242013	SO 10/24/13 10:25	1 1 5							As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-10A	B05-03-SO-10252013	SO 10/25/13 07:45	1 1 5		8081 : SUB	8082 : SUB				As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-11A	B05-07-SO-10252013	SO 10/25/13 08:20	1 1 5							As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-12A	B06-03-SO-10242013	SO 10/24/13 10:55	1 1 5		8081 : SUB	8082 : SUB				As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-13A	B06-07-SO-10242013	SO 10/24/13 11:20	1 1 5							As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-14A	B07-03-SO-10242013	SO 10/24/13 13:40	1 1 5		8081 : SUB	8082 : SUB	8270			As, Ba, Cd, Cr, Pb, Hg, Ag, Se		Sampling time on tube label is 15:00, logged in per chain.
HDR13102820-15A	B07-07-SO-10242013	SO 10/24/13 13:45	1 1 5							As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-16A	B08-03-SO-10242013	SO 10/24/13 14:05	1 1 5		8081 : SUB	8082 : SUB				As, Ba, Cd, Cr, Pb, Hg, Ag, Se		

Comments: Security seals intact. Frozen ice. Saturday delivery. Samples kept cold and secure until login on Monday. Sample splits made by lab in order to sub 8081/8082 to CLS, due 11/5/13. Amended 10/28/13 14:15 to analyze the following only for 8270, per email : from Clayton: 01A, 08A, 14A, 18A, 25A & 27A.KM

Signature	Print Name	Company	Date/Time
<i>K Murray</i>	K Murray	Alpha Analytical, Inc.	10/28/13 1415

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report.

Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

AMENDED

CHAIN-OF-CUSTODY RECORD

CA

WorkOrder : HDRC13102820

Report Due By : 5:00 PM On : 04-Nov-13

Billing Information :

HDR, Inc.
9563 S. Kingston Ct.

Englewood, CO 80112

Alpha Analytical, Inc.

255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
TEL: (775) 355-1044 FAX: (775) 355-0406

Client:

HDR, Inc.
2365 Iron Point Road
Suite 300
Folsom, CA 95630

Report Attention Phone Number EMail Address

Clayton Mokri (916) 817-4762 x clayton.mokri@hdrinc.com

EDD Required : Yes

Sampled by : J. Ruffing

PO :

Client's COC # : none

Job : 028-213932-021/Sunnyvale

Cooler Temp	Samples Received	Date Printed
0 °C	26-Oct-13	28-Oct-13

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Collection Matrix	No. of Bottles Date	Alpha	Sub	TAT	Requested Tests								Sample Remarks		
							300_0_W	8081_S	8082_S	BNA_S	METALS_A Q	METALS_S O	N_TKN_W	N_TOTAL_W			
HDR13102820-17A	B08-07-SO-10242013	SO	10/24/13 14:15	1	1	5									As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-18A	B09-03-SO-10242013	SO	10/24/13 15:00	1	1	5		8081 : SUB	8082 : SUB	8270					As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-19A	B09-07-SO-10242013	SO	10/24/13 15:10	1	1	5									As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-20A	B10-03-SO-10252013	SO	10/25/13 09:20	1	1	5		8081 : SUB	8082 : SUB						As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-21A	B10-07-SO-10252013	SO	10/25/13 09:35	1	1	5									As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-22A	B10-05-GW-10252013	AQ	10/25/13 09:30	3	0	5	N-Total =(NO2+NO3 +TKN)								As, Ba, Cd, Cr, Pb, Hg, Ag, Se	N-Total =(NO2+NO3 +TKN)	N-Total =(NO2+NO3 +TKN)
HDR13102820-23A	B11-03-SO-10242013	SO	10/24/13 15:40	1	1	5		8081 : SUB	8082 : SUB						As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-24A	B11-07-SO-10242013	SO	10/24/13 15:45	1	1	5									As, Ba, Cd, Cr, Pb, Hg, Ag, Se		

Comments: Security seals intact. Frozen ice. Saturday delivery. Samples kept cold and secure until login on Monday. Sample splits made by lab in order to sub 8081/8082 to CLS, due 11/5/13. Amended 10/28/13 14:15 to analyze the following only for 8270, per email : from Clayton: 01A, 08A, 14A, 18A, 25A & 27A.KM

Signature	Print Name	Company	Date/Time
<i>K Murray</i>	K Murray	Alpha Analytical, Inc.	10/28/13 1415

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report. Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Billing Information :
 HDR, Inc.
 9563 S. Kingston Ct.
 Englewood, CO 80112

CHAIN-OF-CUSTODY RECORD

Alpha Analytical, Inc.
 255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
 TEL: (775) 355-1044 FAX: (775) 355-0406

AMENDED

Page: 4 of 16

CA

WorkOrder : HDRC13102820
Report Due By : 5:00 PM On : 04-Nov-13

Client:
 HDR, Inc.
 2365 Iron Point Road
 Suite 300
 Folsom, CA 95630

Report Attention	Phone Number	E Mail Address
Clayton Mokri	(916) 817-4762 x	clayton.mokri@hdrinc.com

EDD Required : Yes

Sampled by : J. Ruffing


PO :
 Client's COC # : none Job : 028-213932-021/Sunnyvale

Cooler Temp	Samples Received	Date Printed
0 °C	26-Oct-13	28-Oct-13

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Collection Matrix	No. of Bottles Date	Alpha	Sub	TAT	Requested Tests								Sample Remarks
							300_0_W	8081_S	8082_S	BNA_S	METALS_A Q	METALS_S O	N_TKN_W	N_TOTAL_W	
HDR13102820-25A	B12-03-SO-10242013	SO	10/24/13 16:20	1	1	5		8081 : SUB	8082 : SUB	8270		As, Ba, Cd, Cr, Pb, Hg, Ag, Se			
HDR13102820-26A	B12-07-SO-10242013	SO	10/24/13 16:30	1	1	5						As, Ba, Cd, Cr, Pb, Hg, Ag, Se			
HDR13102820-27A	B13-03-SO-10242013	SO	10/24/13 12:45	1	1	5		8081 : SUB	8082 : SUB	8270		As, Ba, Cd, Cr, Pb, Hg, Ag, Se			
HDR13102820-28A	B13-07-SO-10242013	SO	10/24/13 13:00	1	1	5						As, Ba, Cd, Cr, Pb, Hg, Ag, Se			

Comments: Security seals intact. Frozen ice. Saturday delivery. Samples kept cold and secure until login on Monday. Sample splits made by lab in order to sub 8081/8082 to CLS, due 11/5/13. Amended 10/28/13 14:15 to analyze the following only for 8270, per email : from Clayton: 01A, 08A, 14A, 18A, 25A & 27A.KM

Signature	Print Name	Company	Date/Time
	K Murray	Alpha Analytical, Inc.	10/28/13 1415

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report. Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

AMENDED

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CHAIN-OF-CUSTODY RECORD

Alpha Analytical, Inc.

255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
TEL: (775) 355-1044 FAX: (775) 355-0406

CA

WorkOrder : HDRC13102820
Report Due By : 5:00 PM On : 04-Nov-13

Billing Information :
HDR, Inc.
9563 S. Kingston Ct.
Englewood, CO 80112

Client:
HDR, Inc.
2365 Iron Point Road
Suite 300
Folsom, CA 95630

Report Attention	Phone Number	E Mail Address
Clayton Mokri	(916) 817-4762 x	clayton.mokri@hdrinc.com

EDD Required : Yes

Sampled by : J. Ruffing

PO :
Client's COC # : none Job : 028-213932-021/Sunnyvale

Cooler Temp	Samples Received	Date Printed
0 °C	26-Oct-13	28-Oct-13

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Collection Matrix	No. of Bottles Date	Alpha	Sub	TAT	Requested Tests							Sample Remarks	
							TDS_W								
HDR13102820-01A	B01-03-SO-10242013	SO	10/24/13 09:50	1	1	5									
HDR13102820-02A	B01-07-SO-10242013	SO	10/24/13 09:55	1	1	5									
HDR13102820-03A	B02-03-SO-10252013	SO	10/25/13 10:00	1	1	5									
HDR13102820-04A	B02-07-SO-10252013	SO	10/25/13 10:15	1	1	5									
HDR13102820-05A	B02-20-GW-10252013	AQ	10/25/13 10:50	3	0	5	TDS								
HDR13102820-06A	B03-03-SO-10242013	SO	10/24/13 08:37	1	1	5									
HDR13102820-07A	B03-07-SO-10242013	SO	10/24/13 08:53	1	1	5									
HDR13102820-08A	B04-03-SO-10242013	SO	10/24/13 10:10	1	1	5									
HDR13102820-09A	B04-07-SO-10242013	SO	10/24/13 10:25	1	1	5									
HDR13102820-10A	B05-03-SO-10252013	SO	10/25/13 07:45	1	1	5									

Comments: Security seals intact. Frozen ice. Saturday delivery. Samples kept cold and secure until login on Monday. Sample splits made by lab in order to sub 8081/8082 to CLS. due 11/5/13. Amended 10/28/13 14:15 to analyze the following only for 8270, per email : from Clayton: 01A, 08A, 14A, 18A, 25A & 27A.KM

Signature	Print Name	Company	Date/Time
<i>K Murray</i>	K Murray	Alpha Analytical, Inc.	10/28/13 1415

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report.

Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Billing Information :
 HDR, Inc.
 9563 S. Kingston Ct.
 Englewood, CO 80112

CHAIN-OF-CUSTODY RECORD

Alpha Analytical, Inc.
 255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
 TEL: (775) 355-1044 FAX: (775) 355-0406

**AMENDED
 CA**

WorkOrder : HDRC13102820
Report Due By : 5:00 PM On : 04-Nov-13

Client:
 HDR, Inc.
 2365 Iron Point Road
 Suite 300
 Folsom, CA 95630

Report Attention	Phone Number	E Mail Address
Clayton Mokri	(916) 817-4762 x	clayton.mokri@hdrinc.com

EDD Required : Yes

Sampled by : J. Ruffing

PO :
 Client's COC # : none Job : 028-213932-021/Sunnyvale

Cooler Temp	Samples Received	Date Printed
0 °C	26-Oct-13	28-Oct-13

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Collection Matrix	Date	No. of Bottles			Requested Tests							Sample Remarks			
				Alpha	Sub	TAT	TDS_W										
HDR13102820-21A	B10-07-SO-10252013	SO	10/25/13 09:35	1	1	5											
HDR13102820-22A	B10-05-GW-10252013	AQ	10/25/13 09:30	3	0	5	TDS										
HDR13102820-23A	B11-03-SO-10242013	SO	10/24/13 15:40	1	1	5											
HDR13102820-24A	B11-07-SO-10242013	SO	10/24/13 15:45	1	1	5											
HDR13102820-25A	B12-03-SO-10242013	SO	10/24/13 16:20	1	1	5											
HDR13102820-26A	B12-07-SO-10242013	SO	10/24/13 16:30	1	1	5											
HDR13102820-27A	B13-03-SO-10242013	SO	10/24/13 12:45	1	1	5											
HDR13102820-28A	B13-07-SO-10242013	SO	10/24/13 13:00	1	1	5											

Comments: Security seals intact. Frozen ice. Saturday delivery. Samples kept cold and secure until login on Monday. Sample splits made by lab in order to sub 8081/8082 to CLS. due 11/5/13. Amended 10/28/13 14:15 to analyze the following only for 8270, per email : from Clayton: 01A, 08A, 14A, 18A, 25A & 27A.KM

Signature	Print Name	Company	Date/Time
<i>K Murray</i>	K Murray	Alpha Analytical, Inc.	10/28/13 1415

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report.
 Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Billing Information :

HDR, Inc.
9563 S. Kingston Ct.

Englewood, CO 80112

CHAIN-OF-CUSTODY RECORD

Alpha Analytical, Inc.
255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
TEL: (775) 355-1044 FAX: (775) 355-0406

CA

Page: 1 of 6

WorkOrder : HDRC13102820
Report Due By : 5:00 PM On : 04-Nov-13

Client:
HDR, Inc.
2365 Iron Point Road
Suite 300
Folsom, CA 95630

Report Attention	Phone Number	EMail Address
Clayton Mokri	(916) 817-4762 x	clayton.mokri@hdrinc.com

EDD Required : Yes

Sampled by : J. Ruffing

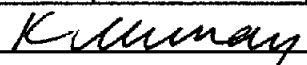
PO :
Client's COC # : none Job : 028-213932-021/Sunnyvale

Cooler Temp	Samples Received	Date Printed
0 °C	26-Oct-13	28-Oct-13

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Collection Matrix	Date	No. of Bottles Alpha Sub TAT			Requested Tests								Sample Remarks
							300_0_W	8081_S	8082_S	BNA_S	METALS_A Q	METALS_S O	N_TKN_W	N_TOTAL_W	
HDR13102820-01A	B01-03-SO-10242013	SO	10/24/13 09:50	1	1	5		8081 : SUB	8082 : SUB	8270			As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-02A	B01-07-SO-10242013	SO	10/24/13 09:55	1	1	5							As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-03A	B02-03-SO-10252013	SO	10/25/13 10:00	1	1	5		8081 : SUB	8082 : SUB	8270			As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-04A	B02-07-SO-10252013	SO	10/25/13 10:15	1	1	5							As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-05A	B02-20-GW-10252013	AQ	10/25/13 10:50	3	0	5	N-Total =(NO2+NO3+TKN)						As, Ba, Cd, Cr, Pb, Hg, Ag, Se	N-Total =(NO2+NO3+TKN) N-Total =(NO2+NO3+TKN)	
HDR13102820-06A	B03-03-SO-10242013	SO	10/24/13 08:37	1	1	5		8081 : SUB	8082 : SUB	8270			As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-07A	B03-07-SO-10242013	SO	10/24/13 08:53	1	1	5							As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-08A	B04-03-SO-10242013	SO	10/24/13 10:10	1	1	5		8081 : SUB	8082 : SUB	8270			As, Ba, Cd, Cr, Pb, Hg, Ag, Se		

Comments: Security seals intact. Frozen ice. Saturday delivery. Samples kept cold and secure until login on Monday. Sample splits made by lab in order to sub 8081/8082 to CLS, due 11/5/13. :

	Signature	Print Name	Company	Date/Time
Logged in by:		<i>K Murray</i>	Alpha Analytical, Inc.	10/28/13 1130

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report.

Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Billing Information :

HDR, Inc.
9563 S. Kingston Ct.

Englewood, CO 80112

CHAIN-OF-CUSTODY RECORD

Alpha Analytical, Inc.
255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
TEL: (775) 355-1044 FAX: (775) 355-0406

CA

WorkOrder : HDRC13102820
Report Due By : 5:00 PM On : 04-Nov-13

Client:
HDR, Inc.
2365 Iron Point Road
Suite 300
Folsom, CA 95630

Report Attention	Phone Number	E Mail Address
Clayton Mokri	(916) 817-4762 x	clayton.mokri@hdrinc.com

EDD Required : Yes

Sampled by : J. Ruffing

PO :
Client's COC # : none Job : 028-213932-021/Sunnyvale

Cooler Temp	Samples Received	Date Printed
0 °C	26-Oct-13	28-Oct-13

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Collection Matrix	Date	No. of Bottles			Requested Tests								Sample Remarks
				Alpha	Sub	TAT	300_0_W	8081_S	8082_S	BNA_S	METALS_A Q	METALS_S O	N_TKN_W	N_TOTAL_W	
HDR13102820-09A	B04-07-SO-10242013	SO	10/24/13 10:25	1	1	5								As, Ba, Cd, Cr, Pb, Hg, Ag, Se	
HDR13102820-10A	B05-03-SO-10252013	SO	10/25/13 07:45	1	1	5		8081 : SUB	8082 : SUB	8270				As, Ba, Cd, Cr, Pb, Hg, Ag, Se	
HDR13102820-11A	B05-07-SO-10252013	SO	10/25/13 08:20	1	1	5								As, Ba, Cd, Cr, Pb, Hg, Ag, Se	
HDR13102820-12A	B06-03-SO-10242013	SO	10/24/13 10:55	1	1	5		8081 : SUB	8082 : SUB	8270				As, Ba, Cd, Cr, Pb, Hg, Ag, Se	
HDR13102820-13A	B06-07-SO-10242013	SO	10/24/13 11:20	1	1	5								As, Ba, Cd, Cr, Pb, Hg, Ag, Se	
HDR13102820-14A	B07-03-SO-10242013	SO	10/24/13 13:40	1	1	5		8081 : SUB	8082 : SUB	8270				As, Ba, Cd, Cr, Pb, Hg, Ag, Se	Sampling time on tube label is 15:00, logged in per chain.
HDR13102820-15A	B07-07-SO-10242013	SO	10/24/13 13:45	1	1	5								As, Ba, Cd, Cr, Pb, Hg, Ag, Se	
HDR13102820-16A	B08-03-SO-10242013	SO	10/24/13 14:05	1	1	5		8081 : SUB	8082 : SUB	8270				As, Ba, Cd, Cr, Pb, Hg, Ag, Se	

Comments: Security seals intact. Frozen ice. Saturday delivery. Samples kept cold and secure until login on Monday. Sample splits made by lab in order to sub 8081/8082 to CLS, due 11/5/13. :

Signature	Print Name	Company	Date/Time
<i>K Murray</i>	K Murray	Alpha Analytical, Inc.	10/28/13 1130

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report. Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Billing Information :

HDR, Inc.
9563 S. Kingston Ct.

Englewood, CO 80112

CHAIN-OF-CUSTODY RECORD

Alpha Analytical, Inc.
255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
TEL: (775) 355-1044 FAX: (775) 355-0406

CA

Page: 3 of 6

WorkOrder : HDRC13102820
Report Due By : 5:00 PM On : 04-Nov-13

Client:
HDR, Inc.
2365 Iron Point Road
Suite 300
Folsom, CA 95630

Report Attention	Phone Number	Email Address
Clayton Mokri	(916) 817-4762 x	clayton.mokri@hdrinc.com

EDD Required : Yes

Sampled by : J. Ruffing

PO :
Client's COC # : none Job : 028-213932-021/Sunnyvale

Cooler Temp	Samples Received	Date Printed
0 °C	26-Oct-13	28-Oct-13

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Collection Matrix	Date	No. of Bottles Alpha Sub TAT			Requested Tests								Sample Remarks	
							300_0_W	8081_S	8082_S	BNA_S	METALS_A_Q	METALS_S_O	N_TKN_W	N_TOTAL_W		
HDR13102820-17A	B08-07-SO-10242013	SO	10/24/13 14:15	1	1	5									As, Ba, Cd, Cr, Pb, Hg, Ag, Se	
HDR13102820-18A	B09-03-SO-10242013	SO	10/24/13 15:00	1	1	5		8081 : SUB	8082 : SUB	8270					As, Ba, Cd, Cr, Pb, Hg, Ag, Se	
HDR13102820-19A	B09-07-SO-10242013	SO	10/24/13 15:10	1	1	5									As, Ba, Cd, Cr, Pb, Hg, Ag, Se	
HDR13102820-20A	B10-03-SO-10252013	SO	10/25/13 09:20	1	1	5		8081 : SUB	8082 : SUB	8270					As, Ba, Cd, Cr, Pb, Hg, Ag, Se	
HDR13102820-21A	B10-07-SO-10252013	SO	10/25/13 09:35	1	1	5									As, Ba, Cd, Cr, Pb, Hg, Ag, Se	
HDR13102820-22A	B10-05-GW-10252013	AQ	10/25/13 09:30	3	0	5	N-Total =(NO2+NO3+TKN)								As, Ba, Cd, Cr, Pb, Hg, Ag, Se	N-Total =(NO2+NO3+TKN)
HDR13102820-23A	B11-03-SO-10242013	SO	10/24/13 15:40	1	1	5		8081 : SUB	8082 : SUB	8270					As, Ba, Cd, Cr, Pb, Hg, Ag, Se	
HDR13102820-24A	B11-07-SO-10242013	SO	10/24/13 15:45	1	1	5									As, Ba, Cd, Cr, Pb, Hg, Ag, Se	

Comments: Security seals intact. Frozen ice. Saturday delivery. Samples kept cold and secure until login on Monday. Sample splits made by lab in order to sub 8081/8082 to CLS, due 11/5/13. :

Signature	Print Name	Company	Date/Time
Logged in by: <u><i>K. M. M...</i></u>	<u>K. M. M...</u>	Alpha Analytical, Inc.	10/28/13 1130

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report. Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Billing Information :

HDR, Inc.
9563 S. Kingston Ct.

Englewood, CO 80112

CHAIN-OF-CUSTODY RECORD

Alpha Analytical, Inc.
255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
TEL: (775) 355-1044 FAX: (775) 355-0406

CA

WorkOrder : HDRC13102820
Report Due By : 5:00 PM On : 04-Nov-13

Client:
HDR, Inc.
2365 Iron Point Road
Suite 300
Folsom, CA 95630

Report Attention	Phone Number	EMail Address
Clayton Mokri	(916) 817-4762 x	clayton.mokri@hdrinc.com

EDD Required : Yes

Sampled by : J. Ruffing

PO :
Client's COC # : none Job : 028-213932-021/Sunnyvale

<u>Cooler Temp</u>	<u>Samples Received</u>	<u>Date Printed</u>
0 °C	26-Oct-13	28-Oct-13

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Collection Matrix	No. of Bottles Alpha Sub TAT	Requested Tests								Sample Remarks
				300_0_W	8081_S	8082_S	BNA_S	METALS_A Q	METALS_S O	N_TKN_W	N_TOTAL_W	
HDR13102820-25A	B12-03-SO-10242013	SO 10/24/13 16:20	1 1 5		8081 : SUB	8082 : SUB	8270			As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-26A	B12-07-SO-10242013	SO 10/24/13 16:30	1 1 5							As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-27A	B13-03-SO-10242013	SO 10/24/13 12:45	1 1 5		8081 : SUB	8082 : SUB	8270			As, Ba, Cd, Cr, Pb, Hg, Ag, Se		
HDR13102820-28A	B13-07-SO-10242013	SO 10/24/13 13:00	1 1 5							As, Ba, Cd, Cr, Pb, Hg, Ag, Se		

Comments: Security seals intact. Frozen ice. Saturday delivery. Samples kept cold and secure until login on Monday. Sample splits made by lab in order to sub 8081/8082 to CLS. due 11/5/13. :

Signature	Print Name	Company	Date/Time
Logged in by: <u>K. Murray</u>	<u>K Murray</u>	Alpha Analytical, Inc.	10/28/13 1130

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report. Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Billing Information :

HDR, Inc.
9563 S. Kingston Ct.

Englewood, CO 80112

CHAIN-OF-CUSTODY RECORD

Alpha Analytical, Inc.
255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
TEL: (775) 355-1044 FAX: (775) 355-0406

CA

WorkOrder : HDRC13102820
Report Due By : 5:00 PM On : 04-Nov-13

Client:

HDR, Inc.
2365 Iron Point Road
Suite 300
Folsom, CA 95630

Report Attention	Phone Number	EMail Address
Clayton Mokri	(916) 817-4762 x	clayton.mokri@hdrinc.com

EDD Required : Yes

Sampled by : J. Ruffing

PO :

Client's COC # : none

Job : 028-213932-021/Sunnyvale

<u>Cooler Temp</u>	<u>Samples Received</u>	<u>Date Printed</u>
0 °C	26-Oct-13	28-Oct-13

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Collection Matrix	No. of Bottles Alpha Sub TAT	Requested Tests							Sample Remarks
				TDS_W							
HDR13102820-01A	B01-03-SO-10242013	SO 10/24/13 09:50	1 1 5								
HDR13102820-02A	B01-07-SO-10242013	SO 10/24/13 09:55	1 1 5								
HDR13102820-03A	B02-03-SO-10252013	SO 10/25/13 10:00	1 1 5								
HDR13102820-04A	B02-07-SO-10252013	SO 10/25/13 10:15	1 1 5								
HDR13102820-05A	B02-20-GW-10252013	AQ 10/25/13 10:50	3 0 5	TDS							
HDR13102820-06A	B03-03-SO-10242013	SO 10/24/13 08:37	1 1 5								
HDR13102820-07A	B03-07-SO-10242013	SO 10/24/13 08:53	1 1 5								
HDR13102820-08A	B04-03-SO-10242013	SO 10/24/13 10:10	1 1 5								
HDR13102820-09A	B04-07-SO-10242013	SO 10/24/13 10:25	1 1 5								
HDR13102820-10A	B05-03-SO-10252013	SO 10/25/13 07:45	1 1 5								

Comments: Security seals intact. Frozen ice. Saturday delivery. Samples kept cold and secure until login on Monday. Sample splits made by lab in order to sub 8081/8082 to CLS. due 11/5/13. :

Signature	Print Name	Company	Date/Time
Logged in by: <u><i>K Murray</i></u>	<u>K Murray</u>	Alpha Analytical, Inc.	10/28/13 1130

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report.

Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Billing information :

HDR, Inc.
9563 S. Kingston Ct.

Englewood, CO 80112

CHAIN-OF-CUSTODY RECORD

Alpha Analytical, Inc.
255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
TEL: (775) 355-1044 FAX: (775) 355-0406

CA

WorkOrder : HDRC13102820
Report Due By : 5:00 PM On : 04-Nov-13

Client:
HDR, Inc.
2365 Iron Point Road
Suite 300
Folsom, CA 95630

Report Attention	Phone Number	E-Mail Address
Clayton Mokri	(916) 817-4762 x	clayton.mokri@hdrinc.com

EDD Required : Yes

Sampled by : J. Ruffing


PO :
Client's COC # : none Job : 028-213932-021/Sunnyvale

Cooler Temp	Samples Received	Date Printed
0 °C	26-Oct-13	28-Oct-13

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Collection Matrix	Collection Date	No. of Bottles			Requested Tests							Sample Remarks		
				Alpha	Sub	TAT	TDS_W									
HDR13102820-21A	B10-07-SO-10252013	SO	10/25/13 09:35	1	1	5										
HDR13102820-22A	B10-05-GW-10252013	AQ	10/25/13 09:30	3	0	5	TDS									
HDR13102820-23A	B11-03-SO-10242013	SO	10/24/13 15:40	1	1	5										
HDR13102820-24A	B11-07-SO-10242013	SO	10/24/13 15:45	1	1	5										
HDR13102820-25A	B12-03-SO-10242013	SO	10/24/13 16:20	1	1	5										
HDR13102820-26A	B12-07-SO-10242013	SO	10/24/13 16:30	1	1	5										
HDR13102820-27A	B13-03-SO-10242013	SO	10/24/13 12:45	1	1	5										
HDR13102820-28A	B13-07-SO-10242013	SO	10/24/13 13:00	1	1	5										

Comments: Security seals intact. Frozen ice. Saturday delivery. Samples kept cold and secure until login on Monday. Sample splits made by lab in order to sub 8081/8082 to CLS. due 11/5/13. .

Signature	Print Name	Company	Date/Time
	K Murray	Alpha Analytical, Inc.	10/28/13 1130

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report. Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Billing Information:

Company: HDR
 Attn: Accounts Payable
 Address: 9563 S. Kingston Ct. Ste. 200
 City, State, Zip: Englewood, CO 80112
 Phone Number: 303.754.4200 Fax: 303.721.8202



Alpha Analytical, Inc.

Main Laboratory: 255 Glendale Ave, Suite 21 Sparks, NV 89431

Phone: 775-355-1044

Fax: 775-355-0406

Satellite Service Centers:

Sacramento: 9891 Horn Road, Suite C, Rancho Cordova, CA 95827

Phone: 916-366-9089

Las Vegas: 6255 McLeod Ave, Suite 24, Las Vegas, NV 89120

Phone: 702-736-7522

Los Angeles: 1007 E. Dominguez St., Suite Q, Carson, CA 90746

Phone: 714-366-2901

Consultant/ Client Info:

Company: HDR
 Address: 2385 Iron Point Rd Ste 300
 City, State, Zip: Folsom, CA 95630

Job and Purchase Order Info:

Job # 028-213932-021
 Job Name: Sunnyvale
 P.O. #:

Report Attention/Project Manager:

Name: Clayton Mokri
 Email Address: Clayton.Mokri@hdrinc.com
 Phone #: 916.817.4782
 Cell #:

QC Deliverable Info:

EDD Required? Yes / No
 EDF Required? Yes / No
 Global ID:
 Data Validation Level: III or IV

Samples Collected from which State? (circle one) AZ CA NV WA ID OR DOD Site Other

Time Sampled (H:MM)	Date Sampled (MM/DD)	Matrix* (See Key Below)	Lab ID Number (For Lab Use Only)	Sample Description	TAT	Field Filtered?	# Containers* (See Key Below)	Analysis Requested							Remarks		
								Chlorinated Pest (8081)	PCBs (8082)	SVOCs (8270)	RCRA 8 metals (8010B) & Mercury (200.8)	Total Nitrogen (300.0/351)	Total RCRA Metals (8020/200.8)	TDS (180.1)			
0950	10/24	S	HDR13102820-01	B01 -03 -SO -10242013		NO	1	X	X	X	X						
0955	10/24	S		B01 -07 -SO -10242013							X						
1000	10/25	S		B02 -03 -SO -10252013				X	X	X	X						
1015	I	S		B02 -07 -SO -10252013							X						
1056	I	AQ		B02 -30 -GW -10252013			3					X	X	X			
0432	10/24	S		B03 -03 -SO -10242013				X	X	X	X						
0553	I	S		B03 -07 -SO -10242013							X						
1010	I	S		B04 -03 -SO -10242013				X	X	X	X						
1025	I	S		B04 -07 -SO -10242013							X						
0245	10/25	S		B05 -03 -SO -10252013				X	X	X	X						
0820	10/25	S		B05 -07 -SO -10252013							X						
				B05 -10 -GW							X	X	X				

ADDITIONAL INSTRUCTIONS:

I (field sampler) attest to the validity and authenticity of this sample(s). I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action. NAC 445.0636 (c) (2).

Sampled By: <u>J. Ruffing</u>	Date: <u>10/25/13</u>	Time: <u>1350</u>	Received by: (Signature/Affiliation): <u>E. Francisco</u>	Date: <u>10/25/13</u>	Time: <u>1350</u>
Relinquished by: (Signature/Affiliation): <u>J. Ruffing</u>	Date:	Time:	Received by: (Signature/Affiliation): <u>K. Williams</u>	Date: <u>10/28/13</u>	Time: <u>1100</u>
Relinquished by: (Signature/Affiliation):	Date:	Time:	Received by: (Signature/Affiliation):	Date:	Time:

* Key: AQ - Aqueous WA - Waste OT - Other ** L - Liter V - VOA S - Soil Jar O - Orbo T - Tedlar B - Brass P - Plastic OT - Other

NOTE: Samples are discarded 90 days after sample receipt unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report.

Billing Information:

Company: HDR
 Attn: Accounts Payable
 Address: 9563 S. Kingston Ct. Ste. 200
 City, State, Zip: Englewood, CO 80112
 Phone Number: 303.754.4200 Fax: 303.721.9202



Alpha Analytical, Inc.

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 Las Vegas: 6255 McLeod Ave, Suite 24, Las Vegas, NV 89120
 Los Angeles: 1007 E. Dominguez St., Suite O, Carson, CA 90746

Phone: 916-366-9069
 Phone: 702-736-7522
 Phone: 714-388-2901

Consultant/ Client Info:		Job and Purchase Order Info:		Report Attention/Project Manager:		QC Deliverable Info:	
Company:	<u>HDR</u>	Job #:	<u>028-213932-021</u>	Name:	<u>Clayton Mokri</u>	EDD Required?	<u>Yes / No</u>
Address:	<u>2365 Iron Point Rd Ste 300</u>	Job Name:	<u>Sunnyvale</u>	Email Address:	<u>Clayton.Mokri@hdrinc.com</u>	EDF Required?	<u>Yes / No</u>
City, State, Zip:	<u>Folsom, CA 95630</u>	P.O. #:		Phone #:	<u>916.817.4762</u>	Global ID:	
				Cell #:		Data Validation Level:	<u>III</u> or <u>IV</u>

Samples Collected from which State? (circle one) AZ CA NV WA ID OR DOD Site Other

Time Sampled (HHMM)	Date Sampled (MM/DD)	Matrix* (See Key Below)	Lab ID Number (For Lab Use Only)	Sample Description	TAT	Field Filtered?	# Containers** (See Key Below)	Analysis Requested							Remarks	
								Chlorinated Pest (8081)	PCBs (8082)	SVOCs (8270)	RCRA 8 metals (8010B) & Mercury (200.6)	Total Nitrogen (300.0/351)	Total RCRA Metals (6020/200.6)	TDS (160.1)		
1055	10/24	S	HDR131-2820-12	B06 -03 -SO -10242013	STD	NO	1	X	X	X	X					
1120		S		B06 -07 -SO -10242013							X					
1340		S		B07 -03 -SO -10242013				X	X	X	X					
1345		S		B07 -07 -SO -10242013							X					
1405		S		B08 -05 -SO -10242013				X	X	X	X					
1415		S		B08 -07 -SO -10242013							X					
1500		S		B09 -03 -SO -10242013				X	X	X	X					
1510		S		B09 -07 -SO -10242013							X					
0920 1540	10/25	S		B10 -03 -SO -10252013				X	X	X	X					
0935 1550		S		B10 -07 -SO -10252013							X					
0930		AQ		B10 -25 -GW -10252013			3					X	X	X		
1540	10/24	S		B11 -03 -SO -16242013			1	X	X	X	X					

ADDITIONAL INSTRUCTIONS:

I (field sampler) attest to the validity and authenticity of this sample(s). I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action. NAC 445.0636 (c) (2).

Sampled By: <u>J. R. King</u>	Date: <u>10/25/13</u>	Time: <u>1350</u>	Received by: (Signature/Affiliation): <u>E. Fuciano</u>	Date: <u>10/25/13</u>	Time: <u>1350</u>
Relinquished by: (Signature/Affiliation): <u>J. R. King</u>	Date:	Time:	Received by: (Signature/Affiliation): <u>K. M. ...</u>	Date: <u>10/28/13</u>	Time: <u>1100</u>
Relinquished by: (Signature/Affiliation):	Date:	Time:	Received by: (Signature/Affiliation):	Date:	Time:

* Key: AQ - Aqueous WA - Waste OT - Other ** L - Liter V - VOA S-Soil Jar O - Orbo T - Tedlar B - Brass P - Plastic OT - Other
 NOTE: Samples are discarded 60 days after sample receipt unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report.

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Phone: 916-366-9089

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Phone: 702-736-7522

Los Angeles: 1007 E. Dominguez St., Suite O, Carson, CA 90748

Phone: 714-386-2801

Page # 3 of 3

Consultant/ Client Info:

Company: HDR
 Address: 2365 Iron Point Rd Ste 300
 City, State, Zip: Folsom, CA 95630

Job and Purchase Order Info:

Job #: 028-213932-021
 Job Name: Sunnyvale
 P.O. #: _____

Report Attention/Project Manager:

Name: Clayton Mokri
 Email Address: clayton.mokri@hdrinc.com
 Phone #: 916.817.4762
 Cell #: _____

QC Deliverable Info:

EDD Required? Yes / No _____ EDF Required? Yes / No _____
 Global ID: _____
 Data Validation Level: III or IV

Samples Collected from which State? (circle one) AZ CA NV WA ID OR DOD Site Other

Time Sampled (H:MM)	Date Sampled (MM/DD)	Matrix* (See Key Below)	Lab ID Number (For Lab Use Only)	Sample Description	TAT	Field Filled?	# Containers* (See Key Below)	Analysis Requested							Remarks		
								Chlorinated Pest (9081)	PCBs (8082)	SVOCs (8270)	RCRA 8 metals (6010B) & Mercury (200.8)	Total Nitrogen (300.0/351)	Total RCRA Metals (6020/200.8)	TDS (160.1)			
1545	10/24	S	HDR13102820-24	B11 -07 -SO -10242013	STD	NO	1					X					
1620	1	S		B12 -03 -SO -10242013				X	X	X		X					
1630	1	S		B12 -07 -SO -10242013								X					
1245	1	S		B13 -03 -SO -10242013				X	X	X		X					
1300	1	S		B13 -07 -SO -10242013								X					

ADDITIONAL INSTRUCTIONS:

I (field sampler) attest to the validity and authenticity of this sample(s). I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action. NAC 445.0636 (c) (2).

Sampled By: <u>J. Riffing</u>	Date: <u>10/25/13</u>	Time: <u>1350</u>	Received by: (Signature/Affiliation): <u>E. Fungano</u>	Date: <u>10/25/13</u>	Time: <u>1350</u>
Relinquished by: (Signature/Affiliation): <u>[Signature]</u>	Date: _____	Time: _____	Received by: (Signature/Affiliation): <u>K. Murray IAM</u>	Date: <u>10/28/13</u>	Time: <u>1100</u>
Relinquished by: (Signature/Affiliation): _____	Date: _____	Time: _____	Received by: (Signature/Affiliation): _____	Date: _____	Time: _____

* Key: AQ - Aqueous WA - Waste OT - Other ** L - Liter V - VOA S-Soil Jar O - Orbo T - Tedlar B - Brass P - Plastic OT - Other

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APPENDIX C

Waste Disposal Criteria



Waste Management
4333 E Jefferson Ave.
Fresno, CA 93725
(559) 834-9151

February 11, 2014

TO: Sunnyvale Water Pollution Control Plant

FROM: Leslie Fichera

SUBJECT: **Sunnyvale Water Pollution Control Plant – 1444 Borregas Avenue,
Sunnyvale, CA**

WM PROFILE: 616623CA

I have reviewed the data for the above project for acceptance into Altamont Landfill. Estimated project size is 1,000 yards. The data consists of samples analyzed by Alpha Analytical, Job number 028-213932-021/Sunnyvale on November 14, 2013, and December 13, 2013. Analytical also includes samples analyzed by California Laboratory Services, Work Order # CWK0135 on November 12, 2013.

Based on my review of the analytical provided, all information provided so far indicates the soil can be managed as Non-Hazardous at the Altamont Landfill, however, additional analytical will be required to obtain an approval at Altamont Landfill. Additional analytical requirements include: total CAM17 Metals, STLC as needed, TPH gas, diesel, oil and VOC's.

Prior to receipt of waste a profile signed by the generator will need to be approved by Waste Management, Inc. After profile approval, all loads must be scheduled 24-48 hours in advance. Please contact Waste Management Inc. to schedule the loads. The profile number must be referenced for schedule and delivery.

Sincerely,

A handwritten signature in cursive script that reads "Leslie Fichera".

Leslie Fichera
Waste Acceptance Manager
Waste Management Inc.

STLC/TTLC Regulatory Limits

Soluble Threshold Limit Concentration (STLC) and Total Threshold Limit Concentration (TTLC) Regulatory Limits¹

Organic Substances	STLC Level (mg/L)	TTLC Level (mg/Kg - wet weight)
Aldrin	0.14	1.4
Chlordane	0.25	2.5
DDT, DDE, DDD	0.1	1
2,4-Dichlorophenoxyacetic acid	10	100
Dieldrin	0.8	8
Dioxin (2,3,7,8-TCDD)	0.001	0.01
Endrin	0.02	0.2
Heptachlor	0.47	4.7
Kepone	2.1	21
Lead compounds, organic	-	13
Lindane (gamma-BHC)	0.4	4
Methoxychlor	10	100
Mirex	2.1	21
Pentachlorophenol	1.7	17
PCBs (Polychlorinated Biphenyls)	5.0	50
Toxaphene	0.5	5
Trichloroethylene	204	2040
2,4,-Trichlorophenoxypropionic acid	1.0	10

¹ Used for California regulated hazardous waste. Source is California Code of Regulations, Title 22, Chapter 11, Article 3.

mg/L - milligrams per liter

mg/Kg - milligrams per kilogram

STLC/TTLC Regulatory Limits

Soluble Threshold Limit Concentration (STLC) and Total Threshold Limit Concentration (TTLC) Regulatory Limits¹

Inorganic Substances	STLC ² Level (mg/L)	TTLC ³ Level (mg/Kg - wet weight)
Antimony (and/or Sb compounds)	15	500
Arsenic (and/or As compounds)	5	50
Asbestos	-	1%
Barium (and/or Ba compounds)	100	10000 ⁴
Beryllium (and/or Be compounds)	0.75	75
Cadmium (and/or Cd compounds)	1	100
Chromium VI compounds	5	500
Chromium (and/or Cr III compounds)	5 ⁵	2500
Cobalt (and/or Co compounds)	80	8000
Copper (and/or Cu compounds)	25	2500
Fluoride salts	180	18000
Lead (and/or Pb compounds)	5	1000
Mercury (and/or Hg compounds)	0.2	20
Molybdenum (and/or Mo compounds)	350	3500
Nickel (and/or Ni compounds)	20.0	2000
Selenium (and/or Se compounds)	1	100
Silver (and/or Ag compounds)	5	500
Thallium (and/or Tl compounds)	7.0	700
Vanadium (and/or V compounds)	24	2400
Zinc (and/or Zn compounds)	250	5000

1 Used for California regulated hazardous waste. Source is California Code of Regulations, Title 22, Chapter 11, Article 3.

2 If a substance is ten times (by rule of thumb) the STLC value found on the TTLC, the Waste Extraction test (WET) should be used. If any substance in the waste equals or exceeds the STLC value, it is considered a hazardous toxic waste.

3 If a substance in a waste equals or exceeds the TTLC level, it is considered a hazardous toxic waste.

4 Excludes barium sulfate.

5 If the soluble chromium as determined by the TCLP is less than 5mg/L, and the soluble chromium as determined by the STLC test equals or exceeds 560mg/L, and the waste is not otherwise identified as a RCRA hazardous waste, then the waste is a non-RCRA hazardous waste.

mg/L - milligrams per liter

mg/Kg - milligrams per kilogram

APPENDIX D

Construction/trench Worker Health Risk Assessment

Normal UCL Statistics for Full Data Sets

User Selected Options

From File WorkSheet_a.wst
 Full Precision OFF
 Confidence Coefficient 95%

C1

Arsenic

Number of Valid Observations	26
Number of Distinct Observations	18
Minimum	0.05
Maximum	28
Mean	4.675
Geometric Mean	3.042
Median	3.75
SD	5.192
Variance	26.95
Std. Error of Mean	1.018
Coefficient of Variation	1.11
Skewness	3.888

Shapiro Wilk Test Statistic	0.551
5% Shapiro Wilk Critical Value	0.92

Data not Normal at 5% Significance Level

95% UCL (Assuming Normal Distribution)

Student's-t UCL	6.414
-----------------	-------

Data do not follow a Discernable Distribution (0.05)

May want to try Nonparametric UCLs

C2

Barium

Number of Valid Observations	26
Number of Distinct Observations	18
Minimum	9.9
Maximum	1900
Mean	272.5
Geometric Mean	154.9
Median	145
SD	394.9
Variance	155939
Std. Error of Mean	77.44
Coefficient of Variation	1.449
Skewness	3.372

Shapiro Wilk Test Statistic	0.546
5% Shapiro Wilk Critical Value	0.92

Data not Normal at 5% Significance Level

95% UCL (Assuming Normal Distribution)

Student's-t UCL 404.8

Data do not follow a Discernable Distribution (0.05)

May want to try Nonparametric UCLs

C3 Chromium

Number of Valid Observations 26
Number of Distinct Observations 21
Minimum 4
Maximum 120
Mean 59.8
Geometric Mean 51.34
Median 61.5
SD 22.43
Variance 502.9
Std. Error of Mean 4.398
Coefficient of Variation 0.375
Skewness -0.432

Shapiro Wilk Test Statistic 0.863

5% Shapiro Wilk Critical Value 0.92

Data not Normal at 5% Significance Level

95% UCL (Assuming Normal Distribution)

Student's-t UCL 67.31

Data do not follow a Discernable Distribution (0.05)

May want to try Nonparametric UCLs

C4 Lead

Number of Valid Observations 26
Number of Distinct Observations 21
Minimum 0.5
Maximum 170
Mean 13.6
Geometric Mean 6.301
Median 6.4
SD 32.24
Variance 1039
Std. Error of Mean 6.323
Coefficient of Variation 2.371
Skewness 4.93

Shapiro Wilk Test Statistic 0.319

Site-specific

Construction Worker Equation Inputs for Non-standard Soil

Variable	Value
TR (target cancer risk) unitless	1.0E-6
THQ (target hazard quotient) unitless	1
AT _{CW} (averaging time - construction worker)	365
EF _{CW} (exposure frequency - construction worker) day/yr	250
ED _{CW} (exposure duration - construction worker) yr	1
ET _{CW} (exposure time - construction worker) hr	8
LT (lifetime) yr	70
BW _{CW} (body weight - construction worker) kg	70
IR _{CW} (soil ingestion rate - construction worker) mg/day	330
SA _{CW} (surface area - construction worker) cm ² /day	3300
AF _{CW} (skin adherence factor - construction worker) mg/cm ²	0.3
A _{fill} (areal extent of tilling) acres	1
M (Gravimetric soil moisture content) %	
ρ _{soil} (density) g/cm ³ - chemical-specific	1.68
N _{A-dump} (number of times soil is dumped)	2
N _{A-fill} (number of times soil is tilled)	2
s _{fill} (soil silt content) %	18
s _{doz} (soil silt content) %	6.9
B _i (dozing/grading blade length) m	
N (number of times site was dozed/graded)	
S (dozing speed) kph	
d _{excav} (average depth of excavation site) m	2
A _{excav} (area of excavation site) m ²	1000
A _c (areal extent of site soil contamination) m ²	
T (time over which construction occurs) s	7200000
J _T (g/m ² s)	0.0000039688437
F(x) (function dependant on U _m /U _t derived using Cowherd et al. (1985))	0.194
U _t (equivalent threshold value) m/s	11.32
U _m (mean annual wind speed) m/s	4.69

Site-specific

Construction Worker Equation Inputs for Non-standard Soil

Variable	Value
V (fraction of vegetative cover)	0
M_{wind} (dust emitted by wind erosion) g	51288.84717
M_{doz} (dust emitted from dozing operations) g	80.169020872572
M_{till} (dust emitted from tilling operations) g	5043.3532488378
M_{grade} (dust emitted from grading operations) g	589.0618944
M_{excav} (dust emitted from excavation soil dumping) g	819.44679313559
ΣVKT (sum of fleet vehicle km traveled) km	
Q/C_{ϵ_a} (inverse of the ratio of the geometric mean air concentration to the emission flu	14.31407
PEF_{sc} (particulate emission factor) m^3/kg	19407360.036209
A (PEF Dispersion Constant)	2.4538
B (PEF Dispersion Constant)	17.5660
C (PEF Dispersion Constant)	189.0426
A_{surf} (areal extent of site) m^2	2023.43
T (temperature) °C	25
foc (fraction organic carbon in soil) g/g	0.006
ρ_b (dry soil bulk density) g/cm^3	1.5
ρ_s (soil particle density) g/cm^3	2.65
A (VF Dispersion Constant)	2.4538
B (VF Dispersion Constant)	17.5660
C (VF Dispersion Constant)	189.0426
T (exposure interval) s	31536000
Q/C_{ϵ_a} (inverse of the ratio of the geometric mean air concentration to the emission flu	14.31407
n (total soil porosity) L_{pore}/L_{soil}	0.43396
θ_w (water-filled soil porosity) L_{water}/L_{soil}	0.15
θ_a (air-filled soil porosity) L_{air}/L_{soil}	0.28396

Site-specific

Construction Worker Screening Levels (RSL) for Non-standard Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
 ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
 Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
 Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF (mg/kg-day) ⁻¹	SFO Ref	Inhalation Unit Risk (ug/m ³) ⁻¹	IUR Ref	Subchronic RfD (mg/kg-day)	SRfD Ref	Subchronic RfC (mg/m ³)	SRfC Ref	GIABS	ABS	RBA	Volatilization Factor (m ³ /kg)
Arsenic, Inorganic	7440-38-2	No	No	1.50E+00	I	4.30E-03	I	-		-		1	0.03	0.6	-
Barium	7440-39-3	No	No	-		-		2.00E-01	A	5.00E-03	H	0.07	-	1	-
Chromium, Total	7440-47-3	No	No	-		-		-		-		0.013	-	1	-
Lead and Compounds	7439-92-1	No	No	-		-		-		-		1	-	1	-
Mercury (elemental)	7439-97-6	No	Yes	-		-		-		3.00E-04	H	1	-	1	6.68E+03
Selenium	7782-49-2	No	No	-		-		5.00E-03	H	-		1	-	1	-
Silver	7440-22-4	No	No	-		-		5.00E-03	H	-		0.04	-	1	-

Site-specific

Construction Worker Screening Levels (RSL) for Non-standard Soil

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 ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
 Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
 Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	Soil Saturation Concentration (mg/kg)	Apparent Diffusivity (cm ² /s)	D _{ia} (cm ² /s)	D _{iw} (cm ² /s)	Henry's law constant	K _d (cm ³ /g)	K _{oc} (cm ³ /g)
Arsenic, Inorganic	-	-	-	-	-	29	-
Barium	-	-	-	-	-	41	-
Chromium, Total	-	-	-	-	-	1800000	-
Lead and Compounds	-	-	-	-	-	900	-
Mercury (elemental)	3.13E+00	0.0000146	0.0307	6.3E-6	0.467	52	-
Selenium	-	-	-	-	-	5	-
Silver	-	-	-	-	-	8.3	-

Site-specific

Construction Worker Screening Levels (RSL) for Non-standard Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
 ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
 Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
 Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	Particulate Emission Factor (m ³ /kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Arsenic, Inorganic	1.94E+07	2.41E+01	1.61E+02	1.38E+03	2.06E+01	1.55E+02	1.03E+03	1.28E+03	1.22E+02	2.06E+01 ca**
Barium	1.94E+07	-	-	-	-	6.19E+04	-	4.25E+05	5.41E+04	5.41E+04 nc
Chromium, Total	1.94E+07	-	-	-	-	-	-	-	-	-
Lead and Compounds	1.94E+07	-	-	-	-	-	-	-	8.00E+02	8.00E+02 nc
Mercury (elemental)	1.94E+07	-	-	-	-	-	-	8.77E+00	8.77E+00	8.77E+00 nc
Selenium	1.94E+07	-	-	-	-	1.55E+03	-	1.70E+06	1.55E+03	1.55E+03 nc
Silver	1.94E+07	-	-	-	-	1.55E+03	-	-	1.55E+03	1.55E+03 nc

Site-specific

Construction Worker Risk for Non-standard Soil

Chemical	Ingestion SF (mg/kg-day) ⁻¹	SFO Ref	Inhalation Unit Risk (ug/m ³) ⁻¹	IUR Ref	Subchronic RfD (mg/kg-day)	SRfD Ref	Subchronic RfC (mg/m ³)	SRfC Ref	Volatilization Factor (m ³ /kg)	Soil Saturation Concentration (mg/kg)	Apparent Diffusivity (cm ² /s)
Arsenic, Inorganic	1.50E+00	I	4.30E-03	I	-		-		-	-	-
Barium	-		-		2.00E-01	A	5.00E-03	H	-	-	-
Chromium, Total	-		-		-		-		-	-	-
Lead and Compounds	-		-		-		-		-	-	-
Mercury (elemental)	-		-		-		3.00E-04	H	6.68E+03	3.13E+00	0.0000146
Selenium	-		-		5.00E-03	H	-		-	-	-
Silver	-		-		5.00E-03	H	-		-	-	-
<i>*Total Risk</i>	-		-		-		-		-	-	-

Site-specific

Construction Worker Risk for Non-standard Soil

Chemical	$D_{ia}^{2/s}$	$D_{iw}^{2/s}$	Henry's law constant	$K_d^{3/g}$	$K_{oc}^{3/g}$	Particulate Emission Factor ₃ (m ³ /kg)	Concentration (mg/kg)
Arsenic, Inorganic	-	-	-	29	-	1.94E+07	6.41
Barium	-	-	-	41	-	1.94E+07	404
Chromium, Total	-	-	-	1800000	-	1.94E+07	-
Lead and Compounds	-	-	-	900	-	1.94E+07	-
Mercury (elemental)	0.0307	6.3E-6	0.467	52	-	1.94E+07	0.36
Selenium	-	-	-	5	-	1.94E+07	2.3
Silver	-	-	-	8.3	-	1.94E+07	1.3
<i>*Total Risk</i>	-	-	-	-	-	-	-

Site-specific

Construction Worker Risk for Non-standard Soil

Chemical	Ingestion Risk TR=1.0E-6	Inhalation Risk TR=1.0E-6	Carcinogenic Risk TR=1.0E-6	Ingestion Risk HQ=1	Inhalation Risk HQ=1	Noncarcinogenic Risk HI=1
Arsenic, Inorganic	2.66E-07	4.63E-09	3.11E-07	4.14E-02	5.03E-03	5.26E-02
Barium	-	-	-	6.52E-03	9.51E-04	7.47E-03
Chromium, Total	-	-	-	-	-	-
Lead and Compounds	-	-	-	-	-	-
Mercury (elemental)	-	-	-	-	4.10E-02	4.10E-02
Selenium	-	-	-	1.49E-03	1.35E-06	1.49E-03
Silver	-	-	-	8.40E-04	-	8.40E-04
<i>*Total Risk</i>	<i>2.66E-07</i>	<i>4.63E-09</i>	<i>3.11E-07</i>	<i>5.02E-02</i>	<i>4.70E-02</i>	<i>1.03E-01</i>