

Appendix 3.16-A

Test Pit Excavation Technical Memorandum

**Test Pit Excavation Technical
Memorandum**

Oroville Wildlife Area Flood Stage Reduction

Sutter Butte Flood Control Agency

October 8, 2015

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1 Introduction

The Sutter Butte Flood Control Agency (SBFCA) intends to implement the Oroville Wildlife Area Flood Stage Reduction (OWA FSR) which includes the construction of a weir and associated ecosystem restoration to improve the connectivity of the Feather River to its historic floodway and to reduce stages within the main channel. Utility surveys identified the presence of an underground sewer force main south of the location of the proposed weir. In addition, a Phase I ESA identified adjacent land as a historic burn area. Although the burn area is located east of the weir improvements, the burn activities may have contaminated soil within the area identified for weir improvements. To locate the sewer force main and assess the presence of contaminants associated with the historic burn area, the following scope of work was performed.

2 Scope of Work

The following activities were performed in September 2015:

- Test pit locations were marked and Underground Service Alert (USA) was notified so that buried utilities could be identified;
- Private utility locator used noninvasive methods to locate the sewer force main and marked the location of the sewer force main on the ground surface;
- An air knife and hand tools were used to pothole and expose the sewer force main at two locations;
- A backhoe was used to excavate soil at one location to allow for the collection of a soil sample;
- A licensed surveyor recorded the horizontal and vertical coordinates of the sewer force main where exposed by the test pits and the horizontal coordinates on the ground surface as identified by the utility locator;
- Collected and submitted four soil samples to Alpha Analytical, Inc. for the following analyses:
 - California Accreditation Manual (CAM) 17 metals by EPA Method 6020/200.8,
 - semivolatile organic compounds (SVOCs) by EPA Method 625/8270C,
 - chlorinated pesticides and polychlorinated biphenols (PCBs) by EPA Method 608/8082; and
 - total extractable hydrocarbons by EPA method 8015B; and
- Backfilled and compacted the excavated material.

3 Methods

The following sections document the methods to complete the scope of work presented above. Mr. Scott Koch with the Sewerage Commission – Oroville District (SC-OR) was onsite was onsite to observe the methods.

3.1 Utility Survey

On September 22, 2015, HDR, Inc. and Precision Locating, LLC arrived at the Oroville Wildlife Area (Figure 1) to locate the sewer force main. A RD8000 radio detection pipe and cable locator was placed on the sewer force main air valve (Figure 2) and the transmitter was set at eight kilohertz (kHz). An RD8000 receiver set to receive an 8kHz signal was used to trace the ground surface and the location of the line was marked with paint. In addition to identifying the horizontal location of the line, the RD8000 is also capable of estimating the depth of the sewer force main below ground surface. The depth of the sewer force main adjacent to the air valve was estimated to be approximately 6 feet bgs and was exposed at 1.25 feet bgs at T-3 (Figure 2). Due to the distance from the RF8000 transmitter, the sewer force main could not be accurately traced further east than test pit T-3.

3.2 Test Pit Excavation Methods

On September 22, 2015, HDR, Inc. and Penecore Drilling, Inc. used a VacMasters 4000, which consists of a 1,000 cubic feet per minute (CFM) vacuum and 165 CFM air lance, to remove soil and cobbles to expose the sewer force main. However, due to the size of the cobbles, which were up to eight inches in diameter, the VacMasters 4000 was generally ineffective. Hand tools were used to excavate material and expose the sewer force main at locations T-2 and T-3 (Figure 2). T-1 was excavated by hand to approximately 4 feet below ground surface; however, the sewer force main was not encountered and this test pit was abandoned as the depth was too great to remove cobbles by hand.

On September 22, 2015, T-4 was excavated with the back hoe to 3-feet bgs for the purpose of soil sample collection. Hand tools were not used in this area as the SC-OR representative stated that the sewer force main was not located in this area, USA and Precision Locating, LLC did not indicate the presence of buried utilities in this area.

3.3 Sewer Force Main Survey

On September 22, 2015, Wood Rogers, Inc. surveyed the top of the exposed sewer force main at locations T-2 and T-3 and the ground surface directly above the traced location of the sewer force main (Figure 2). The benchmark used for this survey was NGS point CREST RM 2, PID DB7123 with a North American Vertical Datum elevation of 261.102 feet.

3.4 Soil Sampling Methods

One soil sample was collected from each of the test pits. The soil samples were collected by scooping undisturbed soil from the sidewall or bottom of the test pit with laboratory supplied containers. The samples were labeled with a unique sample identification and sample collection date and time. The soil samples were analyzed for constituents listed below:

- CAM 17 metals by EPA Method 6020/200.8;
- SVOCs by EPA Method 625/8270C;
- Chlorinated pesticides and PCBs by EPA Method 608/8082; and
- Total extractable hydrocarbons by EPA method 8015B.

3.5 Excavation Backfill

After collection of the survey coordinates and soil samples, the test pits were backfilled with the material removed and compacted into place with a back hoe. The excavated area was graded to match the adjacent topography.

4 Results

The following sections document the results from the sewer force main locating and laboratory analysis of soil samples.

4.1 Sewer Force Main Locating

The RD800 was used to trace the location of the sewer force main approximately 2,000 feet east of the air valve (Figure 2). Potholing was performed to verify the depth and location of the sewer force main in the area of the proposed weir. Based on the results of the potholing, the center of the sewer force main was exposed and located within approximately six inches of the traced area identified by the RD8000; therefore, it is assumed that the sewer force main is located within six inches of the other traced locations. The surveyed location of the sewer force main is presented on Figure 2. Based on the results of the potholing, the top center of the sewer force main is located at 1.85 feet bgs at test pit T-2 and at 1.22 feet bgs at test pit T-3. The survey coordinates are presented in Figure 2 and are as follows:

Top of Sewer Force Main	T-2	T-3
Northing	2292200.01	2292196.36
Easting	6669875.50	6670114.70
Elevation (feet above mean sea level)	115.66	115.47

4.2 Waste Identification and Other Observations

In addition to locating the buried sewer force main, this scope of work was conducted to identify whether the area of the proposed weir contained refuse or other indications that the area had been used as historical dump or burn area. The following observations were made during excavation of the test pits.

4.2.1 Test Pit T-1

Test pit T-1 measured approximately 2 feet in diameter and 4-feet bgs. The soil consisted of a light brown silty gravel (GM) with no plasticity. The soil was soft, dry and contained many cobbles up to 8-inches in diameter. The soil did not have an odor and no refuse or discolored soil was observed. Test pit T-1 was advanced directly over the traced location of the sewer force main; however, the sewer force main was not located and the test pit was abandoned at 4-feet bgs as the cobbles could no longer be removed by hand.

4.2.2 Test Pit T-2

Test pit T-2 measured approximately 2.5 feet in diameter and three feet bgs. The test pit was advanced on the north side of an unpaved road and contained a higher degree of gravel than

observed in test pit T-1. The soil type consisted of poorly graded gravel with some silt (GP) to the maximum depth explored. The soil had no plasticity, was dry, and contained no odor. The soil color from ground surface to approximately 1-foot bgs was light brown and graded to a medium to dark brown from 1-foot bgs to approximately 2-feet bgs. In this interval, small pieces of broken glass was observed; however, there did not appear to be a large amount of glass and no other waste was observed.

4.2.3 Test Pit T-3

Test pit T-3 was advanced in the southern side of the unpaved access road. The test pit measured approximately 3-feet in diameter and was advanced to approximately 1.5-feet bgs. The soil type was consistent with what was observed in test pit T-2; the soil had no plasticity, was dry, and had no odor. There was no glass or other debris observed in this test pit.

4.2.4 Test Pit T-4

Test pit T-4 was advanced on the northern side of the levee with a back hoe. The test pit measured approximately four feet long, two feet wide, and three feet deep. The soil type is poorly graded gravel (GP) with many cobbles up to 8-inches in diameter. During excavation there was no indication of discolored soil, glass, or other refuse to indicate that this area was used as a dump.

4.3 Laboratory Analytical Results

Laboratory analysis of the four soil samples did not yield silver, mercury, selenium, pesticides, PCBs, or SVOCs above laboratory detection limits. Diesel range organics and oil range organics were detected in the sample collected from T-1 at 7.2 mg/Kg and 12 mg/Kg, respectively. Metals were detected in most samples; but it is probable that these detections are naturally occurring. The laboratory analytical results are summarized on Table 1 and the laboratory analytical reports are presented in Appendix A.

4.4 Discussion

As discussed above, the tracing of the sewer force main with the RD8000 was effective to within approximately 6-inches horizontally at test pits T-2 and T-3; therefore, it is highly probable that the sewer force main is located within six inches of the location depicted on Figure 2.

Laboratory analytical results were compared to the United State Environmental Protection Agency Region 9 (Regional Screening Levels) for industrial worker exposure. With the exception of arsenic, analytes detected were reported at concentration less than their respective RSL; therefore, these analytes do not present an unacceptable risk to industrial workers. While arsenic was detected at concentrations greater than the 3 mg/Kg RSL, review of the November 2001 United State Geological Survey *Geochemical Landscapes of the Conterminous United States – New Map Presentations for 22 Elements* indicates that naturally occurring arsenic in the Oroville area ranges from approximately 4 to 7 mg/Kg; therefore, the arsenic detections are likely naturally occurring as the Phase I did not identify an anthropogenic source.

4.5 Conclusions

Potholing at locations T-2 and T-3 confirmed the location of the sewer force main where the utility locator was able to trace with the RD8000. Waste or discolored soil was not observed in test pits T-1, T-3 or T-4. Broken glass was observed in test pit T-2; however, the amount of glass was minimal and other debris was not observed. Soil samples collected from test pits T-1, T-2, T-3 and T-4, yielded metals; however, the metals detections were reported at concentrations less than the industrial RSL, with the exception of arsenic. Review of USGS literature indicates that the arsenic detections are consistent with naturally occurring concentrations observed in the Oroville, CA area.

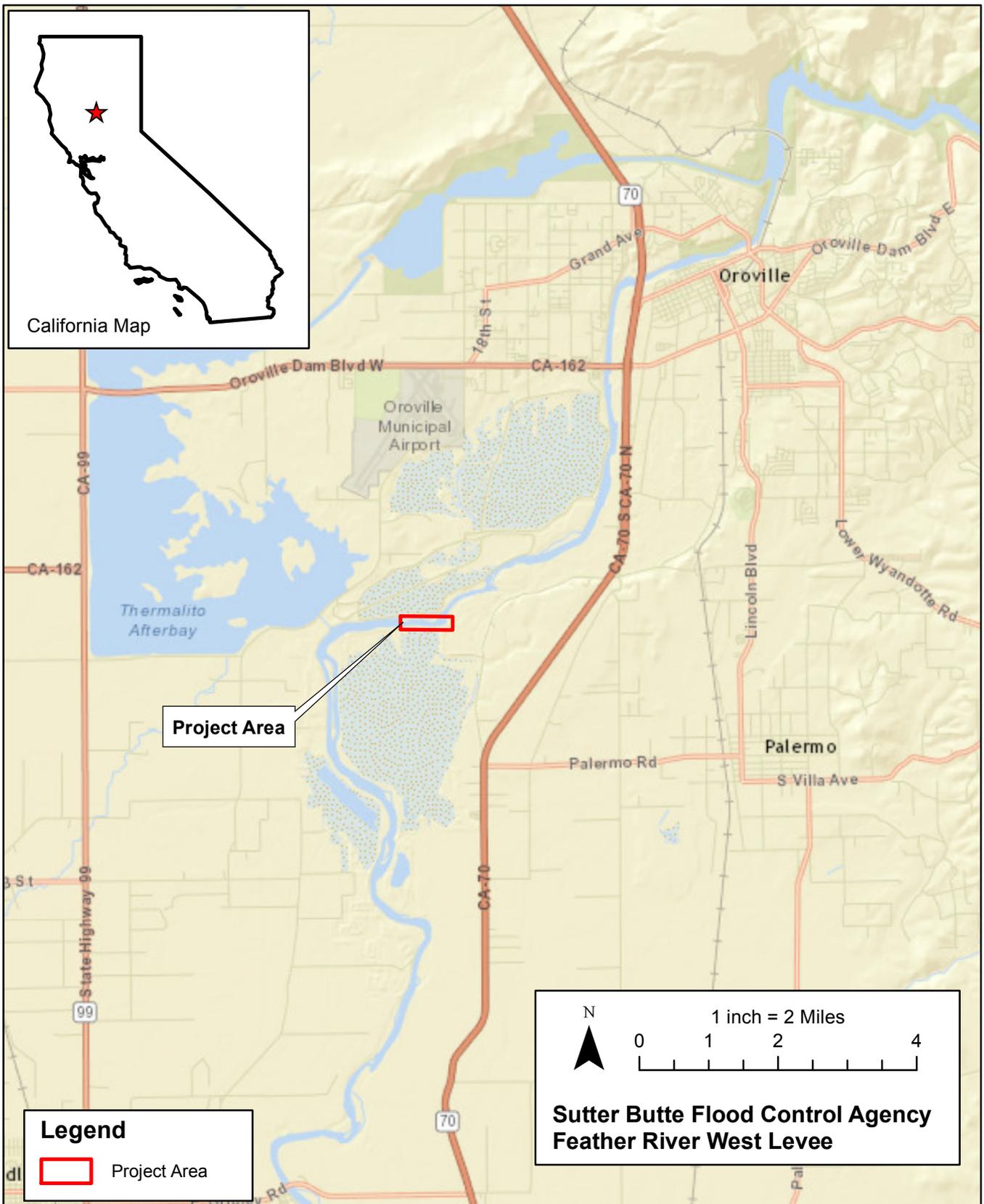
Table 1. Soil Analytical Results
Sutter Butte Flood Control Agency
Oroville Wildlife Area

Test Pit Number	Sample ID	Sample Date	Depth (fbgs)	Ag	As	Ba	Be	Cd	Co	Cr	Cu	Hg	Mo	Ni	Pb	Sb	Se	Tl	V	Zn
				mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
T-1	T-1@3ft	9/22/2015	3	<1.0	4.5	76	<1.0	<1.0	17	140	46	<0.2	<1.0	120	8.2	<1.0	<2.0	<1.0	77	51
T-2	T-2@3ft	9/22/2015	3	<1.0	4.3	31	<1.0	<1.0	13	96	21	<0.2	<1.0	110	27	<1.0	<2.0	<1.0	30	49
T-3	T-3@1.5ft	9/22/2015	1.5	<1.0	5.3	41	<1.0	<1.0	8.4	40	30	<0.2	<1.0	73	7.5	<1.0	<2.0	<1.0	26	34
T-4	T-4@3ft	9/22/2015	3	<1.0	3.2	29	<1.0	<1.0	9.1	50	21	<0.2	<1.0	83	2	<1.0	<2.0	<1.0	25	24
Industrial Worker RSL				5,800	3	220,000	2,300	980	350	1,800,000	47,000	40	5,800	11,000	800	470	5,800	12	5,800	350,000

Test Pit Number	Sample ID	Sample Date	Depth (fbgs)	DRO	ORO	Pesticides	PCBs	SVOCS
				mg/Kg	mg/Kg	µg/Kg	µg/Kg	µg/Kg
T-1	T-1@3ft	9/22/2015	3	7.2	12	ND	ND	ND
T-2	T-2@3ft	9/22/2015	3	<5.0	<10	ND	ND	ND
T-3	T-3@1.5ft	9/22/2015	1.5	<5.0	<10	ND	ND	ND
T-4	T-4@3ft	9/22/2015	3	<5.0	<10	ND	ND	ND
Industrial Worker RSL				600	3,500,000	Varies	Varies	Varies

Notes:

Ag: Silver	Mo: Molybdenum	DRO: diesel range organics
As: Arsenic	Ni: Nickel	ORO: oil range organics
Ba: Barium	Pb: Lead	PCBs: poly chlorinated byphenols
Be: Beryllium	Sb: Antimony	SVOCS: semivolatile organic compounds
Cd: Cadmium	Se: Selenium	Industrial Worker RSL: June 2015 EPA Region 9 Regional Screening Levels
Cr: Chromium	Tl: Thallium	mg/Kg: milligrams per kilogram
Co: Cobalt	V: Vanadium	µg/Kg: micrograms per kilogram
Cu: Copper	Z: Zinc	Bold values indicate analyte was detected above Industrial RSL
Hg: Mercury		Depth: feet below ground surface (fbgs) where sample was collected



Legend

Project Area

N

1 inch = 2 Miles

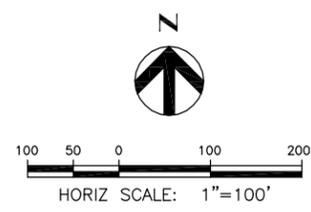
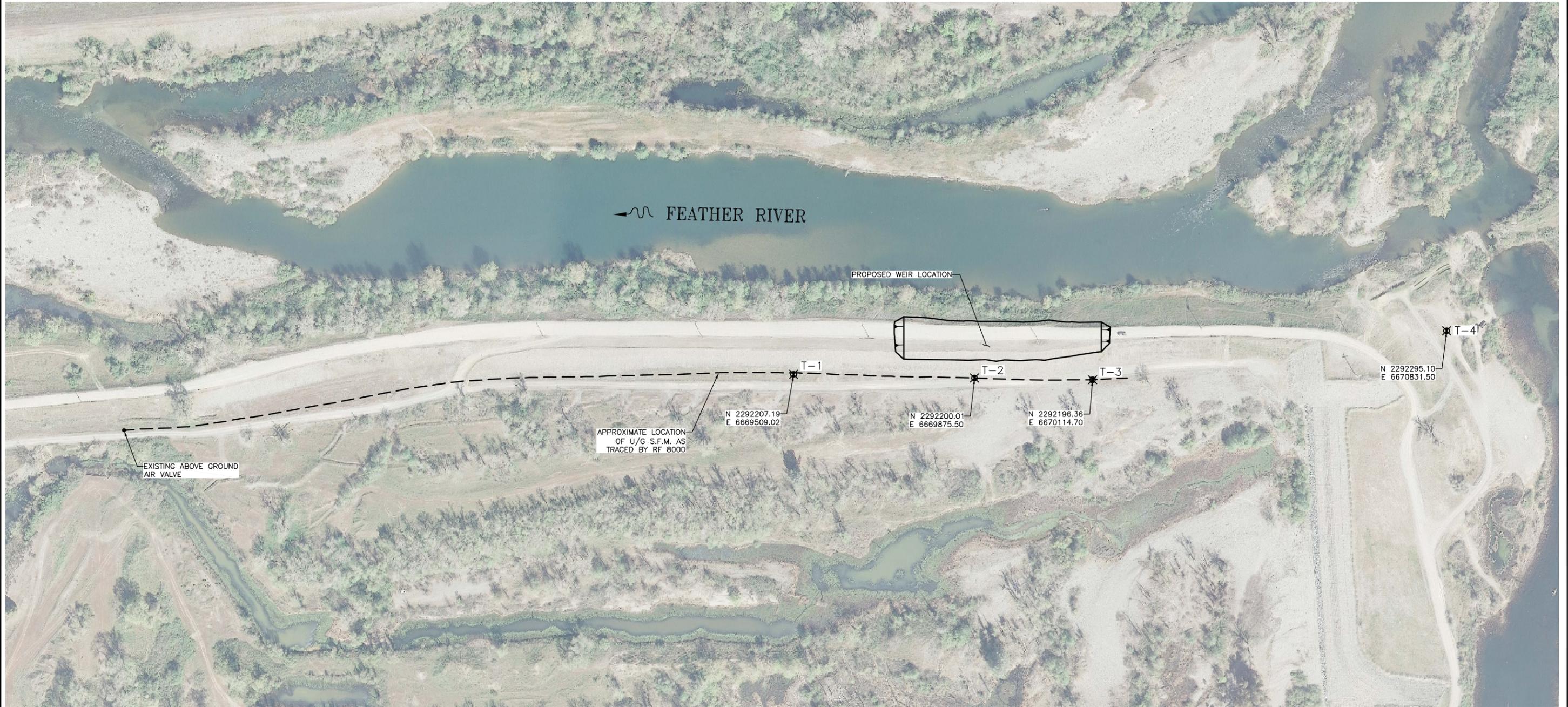
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**Sutter Butte Flood Control Agency
Feather River West Levee**



Figure 1
Project Area Vicinity Map
Feather River West Levee Improvements
Oroville Wildlife Area

Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



**SUTTER BUTTE FLOOD CONTROL AGENCY
FEATHER RIVER WEST LEVEE IMPROVEMENT**

SITE MAP	FIGURE 2
----------	-------------





Appendix



Alpha Analytical, Inc.

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ANALYTICAL REPORT

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2365 Iron Point Road
Folsom, CA 95630
Job: OWA

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

Alpha Analytical Number: HDR15092425-01A
Client I.D. Number: T-1@3ft

Sampled: 09/22/15 10:44
Received: 09/24/15
Extracted: 09/24/15 12:00
Analyzed: 09/29/15

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	102	(60-143) %REC
21 2,4,6-Trichlorophenol	ND	660 µg/Kg	56 Surr: Phenol-d5	105	(56-148) %REC
22 2-Chloronaphthalene	ND	660 µg/Kg	57 Surr: Nitrobenzene-d5	94	(48-131) %REC
23 Dimethyl phthalate	ND	660 µg/Kg	58 Surr: 2-Fluorobiphenyl	102	(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	99	(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

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager

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.



[Signature]

10/1/15

Report Date

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ANALYTICAL REPORT

HDR, Inc.
2365 Iron Point Road
Folsom, CA 95630
Job: OWA

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

Alpha Analytical Number: HDR15092425-02A
Client I.D. Number: T-2@3ft

Sampled: 09/22/15 11:53
Received: 09/24/15
Extracted: 09/24/15 12:00
Analyzed: 09/29/15

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
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5 1,4-Dichlorobenzene	ND	1,300 µg/Kg	40 Di-n-butyl phthalate	ND	3,300 µg/Kg
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Randy Gardner

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager

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ASG

10/1/15

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Folsom, CA 95630
Job: OWA

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

Alpha Analytical Number: HDR15092425-03A
Client I.D. Number: T-3@1.5ft

Sampled: 09/22/15 12:59
Received: 09/24/15
Extracted: 09/24/15 12:00
Analyzed: 09/29/15

Semivolatile Organics by GC/MS EPA Method SW8270C

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
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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
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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	93	(60-143) %REC
21 2,4,6-Trichlorophenol	ND	660 µg/Kg	56 Surr: Phenol-d5	94	(56-148) %REC
22 2-Chloronaphthalene	ND	660 µg/Kg	57 Surr: Nitrobenzene-d5	82	(48-131) %REC
23 Dimethyl phthalate	ND	660 µg/Kg	58 Surr: 2-Fluorobiphenyl	93	(53-130) %REC
24 Acenaphthylene	ND	660 µg/Kg	59 Surr: 2,4,6-Tribromophenol	70	(44-154) %REC
25 2,6-Dinitrotoluene	ND	660 µg/Kg	60 Surr: 4-Terphenyl-d14	82	(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

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager

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10/1/15

Report Date

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: OWA

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

Alpha Analytical Number: HDR15092425-04A
Client I.D. Number: T-4@3ft

Sampled: 09/22/15 13:20
Received: 09/24/15
Extracted: 09/24/15 12:00
Analyzed: 09/29/15

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	94	(56-148) %REC
22 2-Chloronaphthalene	ND	660 µg/Kg	57 Surr: Nitrobenzene-d5	81	(48-131) %REC
23 Dimethyl phthalate	ND	660 µg/Kg	58 Surr: 2-Fluorobiphenyl	91	(53-130) %REC
24 Acenaphthylene	ND	660 µg/Kg	59 Surr: 2,4,6-Tribromophenol	80	(44-154) %REC
25 2,6-Dinitrotoluene	ND	660 µg/Kg	60 Surr: 4-Terphenyl-d14	97	(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

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager

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[Signature]

10/1/15

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

Attn: Clayton Mokri
Phone: (916) 817-4762
Fax: (916) 817-4747
Date Received : 09/24/15

Job: OWA

Metals by ICPMS
EPA Method SW6020 / SW6020A

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: T-1@3ft				
Lab ID : HDR15092425-01A	Beryllium (Be)	ND	1.0 mg/Kg	09/28/15 13:26 09/29/15 15:00
Date Sampled 09/22/15 10:44	Vanadium (V)	77	1.0 mg/Kg	09/28/15 13:26 09/29/15 15:00
	Chromium (Cr)	140	1.0 mg/Kg	09/28/15 13:26 09/29/15 15:00
	Cobalt (Co)	17	1.0 mg/Kg	09/28/15 13:26 09/29/15 15:00
	Nickel (Ni)	120	2.0 mg/Kg	09/28/15 13:26 09/29/15 15:00
	Copper (Cu)	46	2.0 mg/Kg	09/28/15 13:26 09/29/15 15:00
	Zinc (Zn)	51	20 mg/Kg	09/28/15 13:26 09/29/15 15:00
	Arsenic (As)	4.5	1.0 mg/Kg	09/28/15 13:26 09/29/15 15:00
	Selenium (Se)	ND	2.0 mg/Kg	09/28/15 13:26 09/29/15 15:00
	Molybdenum (Mo)	ND	1.0 mg/Kg	09/28/15 13:26 09/29/15 15:00
	Silver (Ag)	ND	1.0 mg/Kg	09/28/15 13:26 09/29/15 15:00
	Cadmium (Cd)	ND	1.0 mg/Kg	09/28/15 13:26 09/29/15 15:00
	Antimony (Sb)	ND	1.0 mg/Kg	09/28/15 13:26 09/29/15 15:00
	Barium (Ba)	76	1.0 mg/Kg	09/28/15 13:26 09/29/15 15:00
	Mercury (Hg)	ND	0.20 mg/Kg	09/28/15 13:26 09/29/15 15:00
	Thallium (Tl)	ND	1.0 mg/Kg	09/28/15 13:26 09/29/15 15:00
	Lead (Pb)	8.2	1.0 mg/Kg	09/28/15 13:26 09/29/15 15:00
Client ID: T-2@3ft				
Lab ID : HDR15092425-02A	Beryllium (Be)	ND	1.0 mg/Kg	09/28/15 13:26 09/29/15 15:22
Date Sampled 09/22/15 11:53	Vanadium (V)	30	1.0 mg/Kg	09/28/15 13:26 09/29/15 15:22
	Chromium (Cr)	96	1.0 mg/Kg	09/28/15 13:26 09/29/15 15:22
	Cobalt (Co)	13	1.0 mg/Kg	09/28/15 13:26 09/29/15 15:22
	Nickel (Ni)	110	2.0 mg/Kg	09/28/15 13:26 09/29/15 15:22
	Copper (Cu)	21	2.0 mg/Kg	09/28/15 13:26 09/29/15 15:22
	Zinc (Zn)	49	20 mg/Kg	09/28/15 13:26 09/29/15 15:22
	Arsenic (As)	4.3	1.0 mg/Kg	09/28/15 13:26 09/29/15 15:22
	Selenium (Se)	ND	2.0 mg/Kg	09/28/15 13:26 09/29/15 15:22
	Molybdenum (Mo)	ND	1.0 mg/Kg	09/28/15 13:26 09/29/15 15:22
	Silver (Ag)	ND	1.0 mg/Kg	09/28/15 13:26 09/29/15 15:22
	Cadmium (Cd)	ND	1.0 mg/Kg	09/28/15 13:26 09/29/15 15:22
	Antimony (Sb)	ND	1.0 mg/Kg	09/28/15 13:26 09/29/15 15:22
	Barium (Ba)	31	1.0 mg/Kg	09/28/15 13:26 09/29/15 15:22
	Mercury (Hg)	ND	0.20 mg/Kg	09/28/15 13:26 09/29/15 15:22
	Thallium (Tl)	ND	1.0 mg/Kg	09/28/15 13:26 09/29/15 15:22
	Lead (Pb)	27	1.0 mg/Kg	09/28/15 13:26 09/29/15 15:22



Alpha Analytical, Inc.

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

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

Client ID: T-3@1.5ft

Lab ID : HDR15092425-03A	Beryllium (Be)	ND	1.0 mg/Kg	09/28/15 13:26	09/29/15 15:25
Date Sampled 09/22/15 12:59	Vanadium (V)	26	1.0 mg/Kg	09/28/15 13:26	09/29/15 15:25
	Chromium (Cr)	40	1.0 mg/Kg	09/28/15 13:26	09/29/15 15:25
	Cobalt (Co)	8.4	1.0 mg/Kg	09/28/15 13:26	09/29/15 15:25
	Nickel (Ni)	73	2.0 mg/Kg	09/28/15 13:26	09/29/15 15:25
	Copper (Cu)	30	2.0 mg/Kg	09/28/15 13:26	09/29/15 15:25
	Zinc (Zn)	34	20 mg/Kg	09/28/15 13:26	09/29/15 15:25
	Arsenic (As)	5.3	1.0 mg/Kg	09/28/15 13:26	09/29/15 15:25
	Selenium (Se)	ND	2.0 mg/Kg	09/28/15 13:26	09/29/15 15:25
	Molybdenum (Mo)	ND	1.0 mg/Kg	09/28/15 13:26	09/29/15 15:25
	Silver (Ag)	ND	1.0 mg/Kg	09/28/15 13:26	09/29/15 15:25
	Cadmium (Cd)	ND	1.0 mg/Kg	09/28/15 13:26	09/29/15 15:25
	Antimony (Sb)	ND	1.0 mg/Kg	09/28/15 13:26	09/29/15 15:25
	Barium (Ba)	41	1.0 mg/Kg	09/28/15 13:26	09/29/15 15:25
	Mercury (Hg)	ND	0.20 mg/Kg	09/28/15 13:26	09/29/15 15:25
	Thallium (Tl)	ND	1.0 mg/Kg	09/28/15 13:26	09/29/15 15:25
	Lead (Pb)	7.5	1.0 mg/Kg	09/28/15 13:26	09/29/15 15:25

Client ID: T-4@3ft

Lab ID : HDR15092425-04A	Beryllium (Be)	ND	1.0 mg/Kg	09/28/15 13:26	09/29/15 15:27
Date Sampled 09/22/15 13:20	Vanadium (V)	25	1.0 mg/Kg	09/28/15 13:26	09/29/15 15:27
	Chromium (Cr)	50	1.0 mg/Kg	09/28/15 13:26	09/29/15 15:27
	Cobalt (Co)	9.1	1.0 mg/Kg	09/28/15 13:26	09/29/15 15:27
	Nickel (Ni)	83	2.0 mg/Kg	09/28/15 13:26	09/29/15 15:27
	Copper (Cu)	21	2.0 mg/Kg	09/28/15 13:26	09/29/15 15:27
	Zinc (Zn)	24	20 mg/Kg	09/28/15 13:26	09/29/15 15:27
	Arsenic (As)	3.2	1.0 mg/Kg	09/28/15 13:26	09/29/15 15:27
	Selenium (Se)	ND	2.0 mg/Kg	09/28/15 13:26	09/29/15 15:27
	Molybdenum (Mo)	ND	1.0 mg/Kg	09/28/15 13:26	09/29/15 15:27
	Silver (Ag)	ND	1.0 mg/Kg	09/28/15 13:26	09/29/15 15:27
	Cadmium (Cd)	ND	1.0 mg/Kg	09/28/15 13:26	09/29/15 15:27
	Antimony (Sb)	ND	1.0 mg/Kg	09/28/15 13:26	09/29/15 15:27
	Barium (Ba)	29	1.0 mg/Kg	09/28/15 13:26	09/29/15 15:27
	Mercury (Hg)	ND	0.20 mg/Kg	09/28/15 13:26	09/29/15 15:27
	Thallium (Tl)	ND	1.0 mg/Kg	09/28/15 13:26	09/29/15 15:27
	Lead (Pb)	2.0	1.0 mg/Kg	09/28/15 13:26	09/29/15 15:27

Sample results were calculated on a wet weight basis.

ND = Not Detected



Roger Scholl

Randy Gardner

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager

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10/1/15

Report Date



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 : 09/24/15

Job: OWA

Total Petroleum Hydrocarbons - Extractable (TPH-E) EPA Method SW8015B

	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID :	T-1@3ft				
Lab ID :	HDR15092425-01A	TPH-E (DRO)	7.2 LC	5.0 mg/Kg	09/25/15 10:44
Date Sampled	09/22/15 10:44	TPH-E (ORO)	12 C	10 mg/Kg	09/25/15 10:44
	Surr: Nonane	96	(65-160) %REC	09/25/15 10:44	09/28/15 00:13
Client ID :	T-2@3ft				
Lab ID :	HDR15092425-02A	TPH-E (DRO)	ND	5.0 mg/Kg	09/25/15 10:44
Date Sampled	09/22/15 11:53	TPH-E (ORO)	ND	10 mg/Kg	09/25/15 10:44
	Surr: Nonane	93	(65-160) %REC	09/25/15 10:44	09/28/15 00:40
Client ID :	T-3@1.5ft				
Lab ID :	HDR15092425-03A	TPH-E (DRO)	ND	5.0 mg/Kg	09/25/15 10:44
Date Sampled	09/22/15 12:59	TPH-E (ORO)	ND	10 mg/Kg	09/25/15 10:44
	Surr: Nonane	104	(65-160) %REC	09/25/15 10:44	09/28/15 02:00
Client ID :	T-4@3ft				
Lab ID :	HDR15092425-04A	TPH-E (DRO)	ND	5.0 mg/Kg	09/25/15 10:44
Date Sampled	09/22/15 13:20	TPH-E (ORO)	ND	10 mg/Kg	09/25/15 10:44
	Surr: Nonane	101	(65-160) %REC	09/25/15 10:44	09/28/15 02:27

C = Reported concentration includes additional compounds uncharacteristic of common fuels and lubricants.

Diesel Range Organics (DRO) C13-C22

L = DRO concentration may include contributions from heavier-end hydrocarbons that elute in the DRO range.

Oil Range Organics (ORO) C22-C40+

Sample results were calculated on a wet weight basis.

ND = Not Detected



Roger Scholl

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PS

10/1/15

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

Date:
02-Oct-15

QC Summary Report

Work Order:
15092425

Method Blank

Type MBLK Test Code: EPA Method SW8270C

File ID: 15092917.D

Batch ID: 35305

Analysis Date: 09/29/2015 16:49

Sample ID: MBLK-35305

Units: µg/Kg

Run ID: MSD_16_150924A

Prep Date: 09/24/2015 12:00

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	11100		12500		89	60	143			
Surr: Phenol-d5	11900		12500		95	56	148			
Surr: Nitrobenzene-d5	5000		6250		80	48	131			
Surr: 2-Fluorobiphenyl	5560		6250		89	53	130			
Surr: 2,4,6-Tribromophenol	8070		12500		65	44	154			
Surr: 4-Terphenyl-d14	4690		6250		75	42	145			



Alpha Analytical, Inc.

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

Date:
02-Oct-15

QC Summary Report

Work Order:
15092425

Laboratory Control Spike

File ID: 15092922.D

Type LCS Test Code: EPA Method SW8270C

Batch ID: 35305

Analysis Date: 09/29/2015 19:01

Sample ID: LCS-35305

Units : µg/Kg

Run ID: MSD_16_150924A

Prep Date: 09/24/2015 12:00

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Phenol	6640	660	6250		106	45	130			
2-Chlorophenol	6140	660	6250		98	66	130			
1,4-Dichlorobenzene	5770	1300	6250		92	59	130			
N-Nitrosodi-n-propylamine	6400	660	6250		102	52	136			
1,2,4-Trichlorobenzene	5940	660	6250		95	46	130			
4-Chloro-3-methylphenol	5600	1300	6250		90	49	130			
Acenaphthene	6160	660	6250		99	57	130			
4-Nitrophenol	11200	3300	25000		45	13	142			
2,4-Dinitrotoluene	4870	660	6250		78	50	136			
Pentachlorophenol	22900	3300	25000		91	24	138			
Pyrene	6160	660	6250		99	38	141			
Surr: 2-Fluorophenol	12100		12500		97	60	143			
Surr: Phenol-d5	12100		12500		97	56	148			
Surr: Nitrobenzene-d5	5510		6250		88	48	131			
Surr: 2-Fluorobiphenyl	5690		6250		91	53	130			
Surr: 2,4,6-Tribromophenol	15200		12500		122	44	154			
Surr: 4-Terphenyl-d14	5780		6250		93	42	145			

Sample Matrix Spike

File ID: 15092923.D

Type MS Test Code: EPA Method SW8270C

Batch ID: 35305

Analysis Date: 09/29/2015 19:27

Sample ID: 15092425-04AMS

Units : µg/Kg

Run ID: MSD_16_150924A

Prep Date: 09/24/2015 12:00

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Phenol	6450	660	6250		0	103	28	132		
2-Chlorophenol	6100	660	6250		0	98	32	143		
1,4-Dichlorobenzene	5730	1300	6250		0	92	40	130		
N-Nitrosodi-n-propylamine	6440	660	6250		0	103	43	145		
1,2,4-Trichlorobenzene	6130	660	6250		0	98	28	136		
4-Chloro-3-methylphenol	5720	1300	6250		0	92	15	144		
Acenaphthene	6140	660	6250		0	98	27	140		
4-Nitrophenol	14400	3300	25000		0	58	5	142		
2,4-Dinitrotoluene	4930	660	6250		0	79	23	151		
Pentachlorophenol	22000	3300	25000		0	88	5	140		
Pyrene	6130	660	6250		0	98	29	145		
Surr: 2-Fluorophenol	11800		12500		94	60	143			
Surr: Phenol-d5	11600		12500		93	56	148			
Surr: Nitrobenzene-d5	5430		6250		87	48	131			
Surr: 2-Fluorobiphenyl	5680		6250		91	53	130			
Surr: 2,4,6-Tribromophenol	14100		12500		112	44	154			
Surr: 4-Terphenyl-d14	5680		6250		91	42	145			

Sample Matrix Spike Duplicate

File ID: 15092924.D

Type MSD Test Code: EPA Method SW8270C

Batch ID: 35305

Analysis Date: 09/29/2015 19:53

Sample ID: 15092425-04AMSD

Units : µg/Kg

Run ID: MSD_16_150924A

Prep Date: 09/24/2015 12:00

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Phenol	6240	660	6250		0	99.9	28	132	6445	3.2(27)
2-Chlorophenol	5970	660	6250		0	96	32	143	6104	2.2(26)
1,4-Dichlorobenzene	5590	1300	6250		0	89	40	130	5729	2.5(20)
N-Nitrosodi-n-propylamine	6150	660	6250		0	98	43	145	6444	4.7(21)
1,2,4-Trichlorobenzene	6070	660	6250		0	97	28	136	6130	1.0(31)
4-Chloro-3-methylphenol	5430	1300	6250		0	87	15	144	5722	5.3(40)
Acenaphthene	6000	660	6250		0	96	27	140	6145	2.4(31)
4-Nitrophenol	13800	3300	25000		0	55	5	142	14440	4.6(41)
2,4-Dinitrotoluene	4810	660	6250		0	77	23	151	4931	2.4(39)
Pentachlorophenol	22500	3300	25000		0	90	5	140	21990	2.3(30)
Pyrene	6280	660	6250		0	100	29	145	6132	2.3(29)
Surr: 2-Fluorophenol	11400		12500		91	60	143			
Surr: Phenol-d5	11200		12500		89	56	148			
Surr: Nitrobenzene-d5	5560		6250		89	48	131			
Surr: 2-Fluorobiphenyl	5580		6250		89	53	130			
Surr: 2,4,6-Tribromophenol	13800		12500		110	44	154			
Surr: 4-Terphenyl-d14	5770		6250		92	42	145			



Alpha Analytical, Inc.

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

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

Date:
02-Oct-15

QC Summary Report

Work Order:
15092425

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

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Date:
02-Oct-15

QC Summary Report

Work Order:
15092425

Method Blank

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

File ID: 1

Batch ID: **35317**

Analysis Date: **09/29/2015 14:57**

Sample ID: **MB-35317**

Units : **mg/Kg** Run ID: **MANUAL_150929C**

Prep Date: **09/28/2015 13:26**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Beryllium (Be)	ND	1								
Vanadium (V)	ND	1								
Chromium (Cr)	ND	1								
Cobalt (Co)	ND	1								
Nickel (Ni)	ND	2								
Copper (Cu)	ND	2								
Zinc (Zn)	ND	20								
Arsenic (As)	ND	1								
Selenium (Se)	ND	2								
Molybdenum (Mo)	ND	1								
Silver (Ag)	ND	1								
Cadmium (Cd)	ND	1								
Antimony (Sb)	ND	1								
Barium (Ba)	ND	1								
Mercury (Hg)	ND	0.2								
Thallium (Tl)	ND	1								
Lead (Pb)	ND	1								

Laboratory Control Spike

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

File ID: 3

Batch ID: **35317**

Analysis Date: **09/29/2015 15:03**

Sample ID: **LCS-35317**

Units : **mg/Kg** Run ID: **MANUAL_150929C**

Prep Date: **09/28/2015 13:26**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Beryllium (Be)	23.5	1	25		94	80	120			
Vanadium (V)	21.7	1	25		87	80	120			
Chromium (Cr)	26.8	1	25		107	80	120			
Cobalt (Co)	23.2	1	25		93	80	120			
Nickel (Ni)	27.4	2	25		110	80	120			
Copper (Cu)	24.7	2	25		99	80	120			
Zinc (Zn)	29.7	20	25		119	80	120			
Arsenic (As)	23.4	1	25		94	80	120			
Selenium (Se)	23.5	2	25		94	80	120			
Molybdenum (Mo)	23.6	1	25		95	80	120			
Silver (Ag)	21.8	1	25		87	80	120			
Cadmium (Cd)	22.7	1	25		91	80	120			
Antimony (Sb)	23.9	1	25		96	80	120			
Barium (Ba)	222	1	250		89	80	120			
Mercury (Hg)	0.419	0.2	0.5		84	80	120			
Thallium (Tl)	21.7	1	25		87	80	120			
Lead (Pb)	23.3	1	25		93	80	120			

Sample Matrix Spike

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

File ID: 5

Batch ID: **35317**

Analysis Date: **09/29/2015 15:08**

Sample ID: **15092425-01AMS**

Units : **mg/Kg** Run ID: **MANUAL_150929C**

Prep Date: **09/28/2015 13:26**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Beryllium (Be)	23.9	1	25		96	75	125			
Vanadium (V)	93.8	1	25	77.14	67	75	125			M2
Chromium (Cr)	131	1	25	140.7	-39	75	125			M3
Cobalt (Co)	40	1	25	16.76	93	75	125			
Nickel (Ni)	133	2	25	121.3	46	75	125			M3
Copper (Cu)	61.8	2	25	45.51	65	75	125			M2
Zinc (Zn)	75	20	25	50.62	98	75	125			
Arsenic (As)	28.8	1	25	4.505	97	75	125			
Selenium (Se)	23.8	2	25	0	95	75	125			
Molybdenum (Mo)	20.2	1	25	0	81	75	125			
Silver (Ag)	23	1	25	0	92	75	125			
Cadmium (Cd)	24	1	25	0	96	75	125			
Antimony (Sb)	21	1	25	0	84	75	125			
Barium (Ba)	303	1	250	76.33	91	75	125			
Mercury (Hg)	0.438	0.2	0.5	0	88	75	125			
Thallium (Tl)	22.9	1	25	0	92	75	125			
Lead (Pb)	31.1	1	25	8.212	91	75	125			



Alpha Analytical, Inc.

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

Date:
02-Oct-15

QC Summary Report

Work Order:
15092425

Sample Matrix Spike Duplicate

Type MSD Test Code: EPA Method SW6020 / SW6020A

File ID: 6

Batch ID: 35317

Analysis Date: 09/29/2015 15:10

Sample ID: 15092425-01AMSD

Units : mg/Kg

Run ID: MANUAL_150929C

Prep Date: 09/28/2015 13:26

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Beryllium (Be)	25.6	1	25	0	102	75	125	23.9	6.9(20)	
Vanadium (V)	96.6	1	25	77.14	78	75	125	93.78	2.9(20)	
Chromium (Cr)	136	1	25	140.7	-19	75	125	130.8	3.8(20)	M3
Cobalt (Co)	41	1	25	16.76	97	75	125	40.03	2.4(20)	
Nickel (Ni)	137	2	25	121.3	62	75	125	132.8	3.0(20)	M3
Copper (Cu)	64.8	2	25	45.51	77	75	125	61.75	4.8(20)	
Zinc (Zn)	78.5	20	25	50.62	112	75	125	75.04	4.5(20)	
Arsenic (As)	30.7	1	25	4.505	105	75	125	28.82	6.2(20)	
Selenium (Se)	25.5	2	25	0	102	75	125	23.8	6.8(20)	
Molybdenum (Mo)	20	1	25	0	80	75	125	20.18	0.9(20)	
Silver (Ag)	24.2	1	25	0	97	75	125	23.04	4.9(20)	
Cadmium (Cd)	25.5	1	25	0	102	75	125	24	5.9(20)	
Antimony (Sb)	20.3	1	25	0	81	75	125	21.01	3.5(20)	
Barium (Ba)	322	1	250	76.33	98	75	125	302.8	6.3(20)	
Mercury (Hg)	0.437	0.2	0.5	0	87	75	125	0.4382	0.3(20)	
Thallium (Tl)	24.8	1	25	0	99	75	125	22.92	8.0(20)	
Lead (Pb)	33	1	25	8.212	99	75	125	31.08	6.1(20)	

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.

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

M3 = The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to the spike level. The method control sample recovery was acceptable.



Alpha Analytical, Inc.

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

Date:
02-Oct-15

QC Summary Report

Work Order:
15092425

Method Blank

Method Blank		Type	Test Code: EPA Method SW8015B/C Ext							
File ID: 3		MBLK	Batch ID: 35307		Analysis Date: 09/27/2015 23:46					
Sample ID: MBLK-35307	Units : mg/Kg		Run ID: MANUAL_150924E		Prep Date: 09/25/2015 10:44					
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
TPH-E (DRO)	ND	5								
TPH-E (ORO)	ND	10								
Surr: Nonane	6.4		6		107	65	160			

Laboratory Control Spike

Laboratory Control Spike		Type	Test Code: EPA Method SW8015B/C Ext							
File ID: 2		LCS	Batch ID: 35307		Analysis Date: 09/27/2015 23:20					
Sample ID: LCS-35307	Units : mg/Kg		Run ID: MANUAL_150924E		Prep Date: 09/25/2015 10:44					
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
TPH-E (DRO)	109	5	100		109	70	130			
Surr: Nonane	5.74		6		96	65	160			

Sample Matrix Spike

Sample Matrix Spike		Type	Test Code: EPA Method SW8015B/C Ext							
File ID: 6		MS	Batch ID: 35307		Analysis Date: 09/28/2015 01:07					
Sample ID: 15092425-02AMS	Units : mg/Kg		Run ID: MANUAL_150924E		Prep Date: 09/25/2015 10:44					
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
TPH-E (DRO)	115	5	100	0	115	46	150			
Surr: Nonane	5.68		6		95	65	160			

Sample Matrix Spike Duplicate

Sample Matrix Spike Duplicate		Type	Test Code: EPA Method SW8015B/C Ext							
File ID: 7		MSD	Batch ID: 35307		Analysis Date: 09/28/2015 01:33					
Sample ID: 15092425-02AMSD	Units : mg/Kg		Run ID: MANUAL_150924E		Prep Date: 09/25/2015 10:44					
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
TPH-E (DRO)	114	5	100	0	114	46	150	114.7	0.8(42)	
Surr: Nonane	6.19		6		103	65	160			

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.

Oil Range Organics (ORO) C22-C40+

Jet Fuel Range Organics (JFRO) C9-C22. JFRO determination is based on its chromatographic fingerprint.

Diesel Range Organics (DRO) C13-C22

CALIFORNIA LABORATORY SERVICES

3249 Fitzgerald Road Rancho Cordova, CA 95742

October 01, 2015

CLS Work Order #: **CYI1033**

COC #:

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

Project Name: HDR15092425

Enclosed are the results of analyses for samples received by the laboratory on 09/24/15 12:55. 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,

A handwritten signature in black ink, appearing to read 'James Liang', with a stylized flourish at the end.

James Liang, Ph.D.
Laboratory Director

CA DOHS ELAP Accreditation/Registration number 1233

CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave.; Suite 21 Sparks, NV 89431	Project: HDR15092425 Project Number: HDR15092425 Project Manager: Reyna Vallejo	CLS Work Order #: CYH1033 COC #:
----------------------------------------------------------------------------------	---------------------------------------------------------------------------------------	-------------------------------------

Alpha Analytical, Inc.
255 Glendale Ave.
Suite 21
Sparks, NV 89431
Tel: 775-343-1111

SUB CHAIN-OF-CUSTODY RECORD

Work Order: **15092425**
 This record is to be used to document the chain of custody for all samples received for analysis.
 This record is to be maintained for a minimum of 30 days after the analysis is complete.
 Please ensure that all samples are properly labeled and stored in accordance with the CLS SOPs.

Report Date: **01/03/16**
 On: **01/03/16**

Technician: **[Signature]**
 Final Sign: **[Signature]**

Client: **[Signature]** TEL: **775-343-1111** FAX: **775-343-1111** Sample No: **[Signature]** Date: **10/01/15**

Sample ID	Sample Description	Matrix	Sample Type	Sample Weight	Analysis Date		Lab Use / Comments
					Sample Received	Sample Analyzed	
15092425-01	1 mg/L	Water	100 mL	100.00 g	10/01/15	10/01/15	
15092425-02	1 mg/L	Water	100 mL	100.00 g	10/01/15	10/01/15	
15092425-03	1 mg/L	Water	100 mL	100.00 g	10/01/15	10/01/15	
15092425-04	1 mg/L	Water	100 mL	100.00 g	10/01/15	10/01/15	
15092425-05	1 mg/L	Water	100 mL	100.00 g	10/01/15	10/01/15	

Comments:

Prepared by: [Signature]	Reviewed by: [Signature]
Analyst: [Signature]	Supervisor: [Signature]

CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave.; Suite 21 Sparks, NV 89431	Project: HDR15092425 Project Number: HDR15092425 Project Manager: Reyna Vallejo	CLS Work Order #: CYI1033 COC #:
----------------------------------------------------------------------------------	---------------------------------------------------------------------------------------	-------------------------------------

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HDR15092425-02A T-2@3ft (CYI1033-01) Soil Sampled: 09/22/15 11:53 Received: 09/24/15 12:55									
4,4'-DDD	ND	3.3	µg/kg	1	CY06655	09/28/15	09/29/15	EPA 8081A	
4,4'-DDE	ND	3.3	"	"	"	"	"	"	
4,4'-DDT	ND	3.3	"	"	"	"	"	"	
Aldrin	ND	1.7	"	"	"	"	"	"	
alpha-BHC	ND	1.7	"	"	"	"	"	"	
beta-BHC	ND	1.7	"	"	"	"	"	"	
Chlordane-technical	ND	3.3	"	"	"	"	"	"	
delta-BHC	ND	1.7	"	"	"	"	"	"	
Dieldrin	ND	3.0	"	"	"	"	"	"	
Endosulfan I	ND	1.7	"	"	"	"	"	"	
Endosulfan II	ND	3.3	"	"	"	"	"	"	
Endosulfan sulfate	ND	3.3	"	"	"	"	"	"	
Endrin	ND	3.3	"	"	"	"	"	"	
Endrin aldehyde	ND	3.3	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	1.7	"	"	"	"	"	"	
Heptachlor	ND	1.7	"	"	"	"	"	"	
Heptachlor epoxide	ND	1.7	"	"	"	"	"	"	
Methoxychlor	ND	17	"	"	"	"	"	"	
Mirex	ND	3.3	"	"	"	"	"	"	
Toxaphene	ND	20	"	"	"	"	"	"	

Surrogate: Decachlorobiphenyl 94 % 52-141 " " " "

Surrogate: Tetrachloro-meta-xylene 94 % 46-139 " " " "

HDR15092425-04A T-4@3ft (CYI1033-02) Soil Sampled: 09/22/15 13:20 Received: 09/24/15 12:55									
4,4'-DDD	ND	3.3	µg/kg	1	CY06655	09/28/15	09/29/15	EPA 8081A	
4,4'-DDE	ND	3.3	"	"	"	"	"	"	
4,4'-DDT	ND	3.3	"	"	"	"	"	"	
Aldrin	ND	1.7	"	"	"	"	"	"	
alpha-BHC	ND	1.7	"	"	"	"	"	"	
beta-BHC	ND	1.7	"	"	"	"	"	"	

CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave.; Suite 21 Sparks, NV 89431	Project: HDR15092425 Project Number: HDR15092425 Project Manager: Reyna Vallejo	CLS Work Order #: CYI1033 COC #:
----------------------------------------------------------------------------------	---------------------------------------------------------------------------------------	-------------------------------------

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HDR15092425-04A T-4@3ft (CYI1033-02) Soil Sampled: 09/22/15 13:20 Received: 09/24/15 12:55									
Chlordane-technical	ND	3.3	µg/kg	1	CY06655	"	09/29/15	EPA 8081A	
delta-BHC	ND	1.7	"	"	"	"	"	"	
Dieldrin	ND	3.0	"	"	"	"	"	"	
Endosulfan I	ND	1.7	"	"	"	"	"	"	
Endosulfan II	ND	3.3	"	"	"	"	"	"	
Endosulfan sulfate	ND	3.3	"	"	"	"	"	"	
Endrin	ND	3.3	"	"	"	"	"	"	
Endrin aldehyde	ND	3.3	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	1.7	"	"	"	"	"	"	
Heptachlor	ND	1.7	"	"	"	"	"	"	
Heptachlor epoxide	ND	1.7	"	"	"	"	"	"	
Methoxychlor	ND	17	"	"	"	"	"	"	
Mirex	ND	3.3	"	"	"	"	"	"	
Toxaphene	ND	20	"	"	"	"	"	"	

Surrogate: Decachlorobiphenyl 92 % 52-141 " " " "

Surrogate: Tetrachloro-meta-xylene 82 % 46-139 " " " "

CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave.; Suite 21 Sparks, NV 89431	Project: HDR15092425 Project Number: HDR15092425 Project Manager: Reyna Vallejo	CLS Work Order #: CYI1033 COC #:
----------------------------------------------------------------------------------	---------------------------------------------------------------------------------------	-------------------------------------

Polychlorinated Biphenyls by EPA Method 8082A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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HDR15092425-02A T-2@3ft (CYI1033-01) Soil Sampled: 09/22/15 11:53 Received: 09/24/15 12:55

Aroclor 1016	ND	20	µg/kg	1	CY06672	09/28/15	09/28/15	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 208 % 50-150 " " " " QS-HI

HDR15092425-04A T-4@3ft (CYI1033-02) Soil Sampled: 09/22/15 13:20 Received: 09/24/15 12:55

Aroclor 1016	ND	20	µg/kg	1	CY06672	09/28/15	09/28/15	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 193 % 50-150 " " " " QS-HI

CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave.; Suite 21 Sparks, NV 89431	Project: HDR15092425 Project Number: HDR15092425 Project Manager: Reyna Vallejo	CLS Work Order #: CYH1033 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 CY06655 - LUFT-DHS GCNV

Blank (CY06655-BLK1)

Prepared: 09/28/15 Analyzed: 09/29/15

Aldrin	ND	1.7	µg/kg							
alpha-BHC	ND	1.7	"							
beta-BHC	ND	1.7	"							
gamma-BHC (Lindane)	ND	1.7	"							
delta-BHC	ND	1.7	"							
Chlordane-technical	ND	3.3	"							
4,4'-DDD	ND	3.3	"							
4,4'-DDE	ND	3.3	"							
4,4'-DDT	ND	3.3	"							
Dieldrin	ND	3.0	"							
Endosulfan I	ND	1.7	"							
Endosulfan II	ND	3.3	"							
Endosulfan sulfate	ND	3.3	"							
Endrin	ND	3.3	"							
Endrin aldehyde	ND	3.3	"							
Heptachlor	ND	1.7	"							
Heptachlor epoxide	ND	1.7	"							
Methoxychlor	ND	17	"							
Mirex	ND	3.3	"							
Toxaphene	ND	20	"							
Surrogate: Tetrachloro-meta-xylene	7.06		"	8.33		85	46-139			
Surrogate: Decachlorobiphenyl	8.10		"	8.33		97	52-141			

LCS (CY06655-BS1)

Prepared: 09/28/15 Analyzed: 09/29/15

Aldrin	13.5	1.7	µg/kg	16.7		81	47-132			
gamma-BHC (Lindane)	13.1	1.7	"	16.7		79	56-133			
4,4'-DDT	12.9	3.3	"	16.7		77	46-137			
Dieldrin	14.6	3.0	"	16.7		87	44-143			
Endrin	14.9	3.3	"	16.7		89	30-147			
Heptachlor	12.4	1.7	"	16.7		74	33-148			
Surrogate: Tetrachloro-meta-xylene	7.23		"	8.33		87	46-139			

CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave., Suite 21 Sparks, NV 89431	Project: HDR15092425 Project Number: HDR15092425 Project Manager: Reyna Vallejo	CLS Work Order #: CYI1033 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 CY06655 - LUFT-DHS GCNV

LCS (CY06655-BS1)

Prepared: 09/28/15 Analyzed: 09/29/15

Surrogate: Decachlorobiphenyl	7.98		µg/kg	8.33		96	52-141			
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LCS Dup (CY06655-BS1)

Prepared: 09/28/15 Analyzed: 09/29/15

Aldrin	13.8	1.7	µg/kg	16.7		83	47-132	2	30	
gamma-BHC (Lindane)	13.5	1.7	"	16.7		81	56-133	3	30	
4,4'-DDT	15.3	3.3	"	16.7		92	46-137	17	30	
Dieldrin	15.4	3.0	"	16.7		92	44-143	5	30	
Endrin	17.0	3.3	"	16.7		102	30-147	13	30	
Heptachlor	13.3	1.7	"	16.7		80	33-148	7	30	

Surrogate: Tetrachloro-meta-xylene	7.04		"	8.33		84	46-139			
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Surrogate: Decachlorobiphenyl	8.47		"	8.33		102	52-141			
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Matrix Spike (CY06655-MS1)

Source: CYI1070-01

Prepared: 09/28/15 Analyzed: 09/29/15

Aldrin	15.9	17	µg/kg	16.7	ND	96	47-138			
gamma-BHC (Lindane)	15.4	17	"	16.7	ND	92	38-144			
4,4'-DDT	19.7	33	"	16.7	ND	118	41-157			
Dieldrin	17.2	30	"	16.7	ND	103	46-155			
Endrin	24.1	33	"	16.7	ND	144	34-149			
Heptachlor	15.1	17	"	16.7	ND	91	36-155			

Surrogate: Tetrachloro-meta-xylene	14.4		"	20.8		69	46-139			
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Surrogate: Decachlorobiphenyl	12.5		"	20.8		60	52-141			
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Matrix Spike Dup (CY06655-MSD1)

Source: CYI1070-01

Prepared: 09/28/15 Analyzed: 09/29/15

Aldrin	14.2	17	µg/kg	16.7	ND	85	47-138	12	35	
gamma-BHC (Lindane)	14.5	17	"	16.7	ND	87	38-144	6	35	
4,4'-DDT	19.1	33	"	16.7	ND	115	41-157	3	35	
Dieldrin	15.9	30	"	16.7	ND	96	46-155	8	35	
Endrin	19.4	33	"	16.7	ND	116	34-149	22	35	
Heptachlor	14.2	17	"	16.7	ND	85	36-155	6	35	

Surrogate: Tetrachloro-meta-xylene	13.5		"	20.8		65	46-139			
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Surrogate: Decachlorobiphenyl	11.6		"	20.8		56	52-141			
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CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave.; Suite 21 Sparks, NV 89431	Project: HDR15092425 Project Number: HDR15092425 Project Manager: Reyna Vallejo	CLS Work Order #: CYI1033 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 CY06672 - LUFT-DHS GCNV

Blank (CY06672-BLK1)

Prepared & Analyzed: 09/28/15

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 8.70 " 8.33 104 50-150

LCS (CY06672-BS1)

Prepared & Analyzed: 09/28/15

Aroclor 1260	84.6	20	µg/kg	83.3		101	29-131			
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Surrogate: Decachlorobiphenyl 9.00 " 8.33 108 50-150

LCS Dup (CY06672-BSD1)

Prepared & Analyzed: 09/28/15

Aroclor 1260	46.9	20	µg/kg	83.3		56	29-131	57	30	QR-2
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Surrogate: Decachlorobiphenyl 5.13 " 8.33 62 50-150

Matrix Spike (CY06672-MS1)

Source: CYI1033-01

Prepared & Analyzed: 09/28/15

Aroclor 1260	79.0	20	µg/kg	83.3	ND	95	29-131			
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Surrogate: Decachlorobiphenyl 8.28 " 8.33 99 50-150

Matrix Spike Dup (CY06672-MSD1)

Source: CYI1033-01

Prepared & Analyzed: 09/28/15

Aroclor 1260	78.2	20	µg/kg	83.3	ND	94	29-131	1	30	
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Surrogate: Decachlorobiphenyl 7.78 " 8.33 93 50-150

CALIFORNIA LABORATORY SERVICES

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

Project: HDR15092425
Project Number: HDR15092425
Project Manager: Reyna Vallejo

CLS Work Order #: CYH1033
COC #:

Notes and Definitions

- QS-HI Surrogate recovery was greater than the upper control limit. A reanalysis was not performed since the analytes associated with the surrogate were not detected.
- QR-2 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- 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

CALIFORNIA LABORATORY SERVICES

3249 Fitzgerald Road Rancho Cordova, CA 95742

October 05, 2015

CLS Work Order #: CYI1162

COC #:

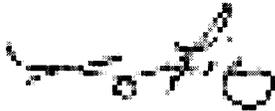
Reyna Vallejo
Alpha Analytical, Inc.-Sparks
255 Glendale Ave.; Suite 21
Sparks, NV 89431

Project Name: HDR15092425

Enclosed are the results of analyses for samples received by the laboratory on 09/28/15 11:04. 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,

A handwritten signature in black ink, appearing to read 'James Liang', with a stylized flourish at the end.

James Liang, Ph.D.
Laboratory Director

CA DOHS ELAP Accreditation/Registration number 1233

CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave., Suite 21 Sparks, NV 89431	Project: HDR15092425 Project Number: HDR15092425 Project Manager: Reyna Vallejo	CLS Work Order #: CY11162 COC #:
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SUB CHAIN-OF-CUSTODY RECORD

Work Order: HDR15092425

Request Date: 10/05/15
Client: [illegible]

Requester: [illegible]

Requester Title: [illegible]

Requester Address: [illegible]

Requester Phone: [illegible]

Requester Email: [illegible]

Requester Signature: [illegible]

Requester Date: [illegible]

Sample ID	Sample Description	Matrix	Lot	Prep	Analysis		Date	Signature
					Method	Result		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Sub Title: [illegible]

Prepared by: [illegible]

Reviewed by: [illegible]

Sub Title: [illegible]

Prepared by: [illegible]

Reviewed by: [illegible]

CALIFORNIA LABORATORY SERVICES

Page 2 of 8

10/05/15 13:15

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

Project: HDR15092425
Project Number: HDR15092425
Project Manager: Reyna Vallejo

CLS Work Order #: CYII162
COC #:

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HDR15092425-01A T-1@3ft (CYII162-01) Soil Sampled: 09/22/15 10:44 Received: 09/28/15 11:04									
4,4'-DDD	ND	3.3	µg/kg	1	CY06706	09/29/15	10/02/15	EPA 8081A	
4,4'-DDE	ND	3.3	"	"	"	"	"	"	
4,4'-DDT	ND	3.3	"	"	"	"	"	"	
Aldrin	ND	1.7	"	"	"	"	"	"	
alpha-BHC	ND	1.7	"	"	"	"	"	"	
beta-BHC	ND	1.7	"	"	"	"	"	"	
Chlordane-technical	ND	3.3	"	"	"	"	"	"	
delta-BHC	ND	1.7	"	"	"	"	"	"	
Dieldrin	ND	3.0	"	"	"	"	"	"	
Endosulfan I	ND	1.7	"	"	"	"	"	"	
Endosulfan II	ND	3.3	"	"	"	"	"	"	
Endosulfan sulfate	ND	3.3	"	"	"	"	"	"	
Endrin	ND	3.3	"	"	"	"	"	"	
Endrin aldehyde	ND	3.3	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	1.7	"	"	"	"	"	"	
Heptachlor	ND	1.7	"	"	"	"	"	"	
Heptachlor epoxide	ND	1.7	"	"	"	"	"	"	
Methoxychlor	ND	17	"	"	"	"	"	"	
Mirex	ND	3.3	"	"	"	"	"	"	
Toxaphene	ND	20	"	"	"	"	"	"	

Surrogate: Decachlorobiphenyl

93 %

52-141

"

"

"

"

Surrogate: Tetrachloro-meta-xylene

92 %

46-139

"

"

"

"

HDR15092425-03A T-3@1.5ft (CYII162-02) Soil Sampled: 09/22/15 12:59 Received: 09/28/15 11:04

4,4'-DDD	ND	3.3	µg/kg	1	CY06706	09/29/15	10/02/15	EPA 8081A	
4,4'-DDE	ND	3.3	"	"	"	"	"	"	
4,4'-DDT	ND	3.3	"	"	"	"	"	"	
Aldrin	ND	1.7	"	"	"	"	"	"	
alpha-BHC	ND	1.7	"	"	"	"	"	"	
beta-BHC	ND	1.7	"	"	"	"	"	"	

CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave.; Suite 21 Sparks, NV 89431	Project: HDR15092425 Project Number: HDR15092425 Project Manager: Reyna Vallejo	CLS Work Order #: CY11162 COC #:
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Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HDR15092425-03A T-3@1.5ft (CY11162-02) Soil Sampled: 09/22/15 12:59 Received: 09/28/15 11:04									
Chlordane-technical	ND	3.3	µg/kg	1	CY06706	"	10/02/15	EPA 8081A	
delta-BHC	ND	1.7	"	"	"	"	"	"	
Dieldrin	ND	3.0	"	"	"	"	"	"	
Endosulfan I	ND	1.7	"	"	"	"	"	"	
Endosulfan II	ND	3.3	"	"	"	"	"	"	
Endosulfan sulfate	ND	3.3	"	"	"	"	"	"	
Endrin	ND	3.3	"	"	"	"	"	"	
Endrin aldehyde	ND	3.3	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	1.7	"	"	"	"	"	"	
Heptachlor	ND	1.7	"	"	"	"	"	"	
Heptachlor epoxide	ND	1.7	"	"	"	"	"	"	
Methoxychlor	ND	17	"	"	"	"	"	"	
Mirex	ND	3.3	"	"	"	"	"	"	
Toxaphene	ND	20	"	"	"	"	"	"	

Surrogate: Decachlorobiphenyl	94 %	52-141	"	"	"	"
Surrogate: Tetrachloro-meta-xylene	84 %	46-139	"	"	"	"

CALIFORNIA LABORATORY SERVICES

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

Project: HDR15092425
Project Number: HDR15092425
Project Manager: Reyna Vallejo

CLS Work Order #: CY11162
COC #:

Polychlorinated Biphenyls by EPA Method 8082A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HDR15092425-01A T-1@3ft (CY11162-01) Soil Sampled: 09/22/15 10:44 Received: 09/28/15 11:04									
Aroclor 1016	ND	20	µg/kg	1	CY06707	09/29/15	10/01/15	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 " " " "

HDR15092425-03A T-3@1.5ft (CY11162-02) Soil Sampled: 09/22/15 12:59 Received: 09/28/15 11:04									
Aroclor 1016	ND	20	µg/kg	1	CY06707	09/29/15	10/01/15	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 48 % 50-150 " " " " QS-4

CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave.; Suite 21 Sparks, NV 89431	Project: HDR15092425 Project Number: HDR15092425 Project Manager: Reyna Vallejo	CLS Work Order #: CY11162 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 CY06706 - LUFT-DHS GCNV

Blank (CY06706-BLK1)

Prepared: 09/29/15 Analyzed: 10/02/15

Aldrin	ND	1.7	µg/kg							
alpha-BHC	ND	1.7	"							
beta-BHC	ND	1.7	"							
gamma-BHC (Lindane)	ND	1.7	"							
delta-BHC	ND	1.7	"							
Chlordane-technical	ND	3.3	"							
4,4'-DDD	ND	3.3	"							
4,4'-DDE	ND	3.3	"							
4,4'-DDT	ND	3.3	"							
Dieldrin	ND	3.0	"							
Endosulfan I	ND	1.7	"							
Endosulfan II	ND	3.3	"							
Endosulfan sulfate	ND	3.3	"							
Endrin	ND	3.3	"							
Endrin aldehyde	ND	3.3	"							
Heptachlor	ND	1.7	"							
Heptachlor epoxide	ND	1.7	"							
Methoxychlor	ND	17	"							
Mirex	ND	3.3	"							
Toxaphene	ND	20	"							
Surrogate: Tetrachloro-meta-xylene	7.23		"	8.33		87	46-139			
Surrogate: Decachlorobiphenyl	7.70		"	8.33		92	52-141			

LCS (CY06706-BS1)

Prepared: 09/29/15 Analyzed: 10/02/15

Aldrin	14.5	1.7	µg/kg	16.7		87	47-132			
gamma-BHC (Lindane)	14.2	1.7	"	16.7		85	56-133			
4,4'-DDT	14.4	3.3	"	16.7		86	46-137			
Dieldrin	16.2	3.0	"	16.7		97	44-143			
Endrin	16.6	3.3	"	16.7		100	30-147			
Heptachlor	13.8	1.7	"	16.7		83	33-148			
Surrogate: Tetrachloro-meta-xylene	7.37		"	8.33		88	46-139			

CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave.; Suite 21 Sparks, NV 89431	Project: HDR15092425 Project Number: HDR15092425 Project Manager: Reyna Vallejo	CLS Work Order #: CYII162 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
Batch CY06706 - LUFT-DHS GCNV										
LCS (CY06706-BS1) Prepared: 09/29/15 Analyzed: 10/02/15										
Surrogate: Decachlorobiphenyl	8.01		µg/kg	8.33		96	52-141			
LCS Dup (CY06706-BSD1) Prepared: 09/29/15 Analyzed: 10/02/15										
Aldrin	12.7	1.7	µg/kg	16.7		76	47-132	13	30	
gamma-BHC (Lindane)	13.4	1.7	"	16.7		80	56-133	6	30	
4,4'-DDT	14.2	3.3	"	16.7		85	46-137	1	30	
Dieldrin	15.3	3.0	"	16.7		92	44-143	6	30	
Endrin	16.9	3.3	"	16.7		101	30-147	2	30	
Heptachlor	13.0	1.7	"	16.7		78	33-148	6	30	
Surrogate: Tetrachloro-meta-xylene	6.74		"	8.33		81	46-139			
Surrogate: Decachlorobiphenyl	7.48		"	8.33		90	52-141			
Matrix Spike (CY06706-MS1) Source: CYII202-07 Prepared: 09/29/15 Analyzed: 10/02/15										
Aldrin	16.1	17	µg/kg	16.7	ND	97	47-138			
gamma-BHC (Lindane)	17.0	17	"	16.7	ND	102	38-144			
4,4'-DDT	19.7	33	"	16.7	8.04	70	41-157			
Dieldrin	24.0	30	"	16.7	ND	144	46-155			
Endrin	24.0	33	"	16.7	ND	144	34-149			
Heptachlor	14.4	17	"	16.7	ND	86	36-155			
Surrogate: Tetrachloro-meta-xylene	18.3		"	20.8		88	46-139			
Surrogate: Decachlorobiphenyl	18.6		"	20.8		89	52-141			
Matrix Spike Dup (CY06706-MSD1) Source: CYII202-07 Prepared: 09/29/15 Analyzed: 10/02/15										
Aldrin	17.0	17	µg/kg	16.7	ND	102	47-138	5	35	
gamma-BHC (Lindane)	17.3	17	"	16.7	ND	104	38-144	1	35	
4,4'-DDT	23.3	33	"	16.7	8.04	92	41-157	17	35	
Dieldrin	25.2	30	"	16.7	ND	151	46-155	5	35	
Endrin	25.8	33	"	16.7	ND	155	34-149	7	35	QM-7
Heptachlor	16.5	17	"	16.7	ND	99	36-155	14	35	
Surrogate: Tetrachloro-meta-xylene	18.4		"	20.8		88	46-139			
Surrogate: Decachlorobiphenyl	19.2		"	20.8		92	52-141			

CALIFORNIA LABORATORY SERVICES

Alpha Analytical, Inc.-Sparks 255 Glendale Ave., Suite 21 Sparks, NV 89431	Project: HDR15092425 Project Number: HDR15092425 Project Manager: Reyna Vallejo	CLS Work Order #: CY11162 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 CY06707 - LUFT-DHS GCNV

Blank (CY06707-BLK1)

Prepared: 09/29/15 Analyzed: 10/01/15

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 7.30 " 8.33 88 50-150

LCS (CY06707-BS1)

Prepared: 09/29/15 Analyzed: 10/01/15

Aroclor 1260	68.9	20	µg/kg	83.3		83	29-131			
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Surrogate: Decachlorobiphenyl 7.57 " 8.33 91 50-150

LCS Dup (CY06707-BSD1)

Prepared: 09/29/15 Analyzed: 10/01/15

Aroclor 1260	70.2	20	µg/kg	83.3		84	29-131	2	30	
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Surrogate: Decachlorobiphenyl 7.72 " 8.33 93 50-150

Matrix Spike (CY06707-MS1)

Source: CY11173-01

Prepared: 09/29/15 Analyzed: 10/01/15

Aroclor 1260	43.7	20	µg/kg	83.3	ND	52	29-131			
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Surrogate: Decachlorobiphenyl 9.35 " 8.33 112 50-150

Matrix Spike Dup (CY06707-MSD1)

Source: CY11173-01

Prepared: 09/29/15 Analyzed: 10/01/15

Aroclor 1260	44.6	20	µg/kg	83.3	ND	54	29-131	2	30	
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Surrogate: Decachlorobiphenyl 7.77 " 8.33 93 50-150

CALIFORNIA LABORATORY SERVICES

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

Project: HDR15092425
Project Number: HDR15092425
Project Manager: Reyna Vallejo

CLS Work Order #: CYI1162
COC #:

Notes and Definitions

- QS-4 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- QM-7 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- 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

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 : HDRC15092425
Report Due By : 5:00 PM On : 01-Oct-15
8081/8082 for O1A+03A due 10-5-15

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

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

EDD Required : No

Sampled by : Clayton Mokri

Cooler Temp

Samples Received

Date Printed

Client's COC # : 04520

Job : OWA

3 °C

24-Sep-15

25-Sep-15

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

Alpha Sample ID	Client Sample ID	Collection Matrix Date	No. of Bottles		TAT	Requested Tests						Sample Remarks
			Alpha	Sub		8081_S	8082_S	BNA_S	HOLD	METALS_S	TPHE_S	
HDR15092425-01A	T-1@3ft	09/22/15 10:44	1	1	4	8081 : SUB	8082 : SUB	8270		CAM_17_TT LC	TPHE_C	
HDR15092425-02A	T-2@3ft	09/22/15 11:53	1	1	4	8081 : SUB	8082 : SUB	8270		CAM_17_TT LC	TPHE_C	
HDR15092425-03A	T-3@1.5ft	09/22/15 12:59	1	1	4	8081 : SUB	8082 : SUB	8270		CAM_17_TT LC	TPHE_C	
HDR15092425-04A	T-4@3ft	09/22/15 13:20	1	1	4	8081 : SUB	8082 : SUB	8270		CAM_17_TT LC	TPHE_C	
HDR15092425-05A	T-5@2ft	09/22/15 13:37	1	1	4				Hold			
HDR15092425-06A	T-6@2ft	09/22/15 13:50	1	1	4				Hold			
HDR15092425-07A	T-7@2.5ft	09/22/15 14:10	1	1	4				Hold			

Comments:

Chain prelogged on 9/24/15 in order for Sac office to sub PCB and Pesticide to CLS. Remaining samples received on 9/25/15. Security seals intact. Frozen ice. Amended 9/25/15 15:50 to take O1A and O3S off hold and analyze for all requested analyses. and to place O5A, O6A and O7A on hold. per email from Clayton. 8081/8082 for O1A and O3A due 10/5/15 KM

Logged in by: K M Mavery K M Mavery Alpha Analytical, Inc. 9/25/15 1550

Signature: _____ Print Name: _____ Company: _____ Date/Time: _____

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 : HDRC15092425
Report Due By : 5:00 PM On : 01-Oct-15

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

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

EDD Required : No

Sampled by : Clayton Mokri

PO :

Job : OWA

Cooler Temp 3 °C Samples Received 24-Sep-15 Date Printed 25-Sep-15

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

Alpha Sample ID	Client Sample ID	Collection Matrix Date	No. of Bottles		TAT	Requested Tests						Sample Remarks		
			Alpha	Sub		8081_S	8082_S	BNA_S	HOLD	METALS_S	TPH/E_S			
HDR15092425-01A	T-1@3ft	SO 09/22/15 10:44	1	1	4					Hold				
HDR15092425-02A	T-2@3ft	SO 09/22/15 11:53	1	1	4	8081 : SUB	8082 : SUB	8270		CAM_17_TT IC	TPH/E_C			
HDR15092425-03A	T-3@1.5ft	SO 09/22/15 12:59	1	1	4					Hold				
HDR15092425-04A	T-4@3ft	SO 09/22/15 13:20	1	1	4	8081 : SUB	8082 : SUB	8270		CAM_17_TT IC	TPH/E_C			
HDR15092425-05A	T-5@2ft	SO 09/22/15 13:37	1	1	4	8081 : SUB	8082 : SUB	8270		CAM_17_TT IC	TPH/E_C			
HDR15092425-06A	T-6@2ft	SO 09/22/15 13:50	1	1	4	8081 : SUB	8082 : SUB	8270		CAM_17_TT IC	TPH/E_C			
HDR15092425-07A	T-7@2.5ft	SO 09/22/15 14:10	1	1	4	8081 : SUB	8082 : SUB	8270		CAM_17_TT IC	TPH/E_C			

Comments: Chain prerlogged on 9/24/15 in order for Sac office to sub PCB and Pesticide to C.I.S. Remaining samples received on 9/25/15. Security seals intact. Frozen ice.

Logged in by: K Murray Signature: K Murray Print Name: K Murray Company: Alpha Analytical, Inc. Date/Time: 9/25/15 10:15

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:

Company: HDR
 Attn: AP
 Address: _____
 City, State, Zip: _____
 Phone Number: _____
 Fax: _____



Alpha Analytical, Inc.
 Main Laboratory: 255 Glendale Ave, Suite 21 Sparks, NV 89431
 Satellite Service Centers:
 Northern CA: 9991 Horn Road, Suite C, Rancho Cordova, CA 95827
 Southern CA: 1007 E. Dominguez St., Suite O, Carson, CA 90746
 Northern NV: 1250 Lamolle Hwy., #310, Elko, NV 89801
 Southern NV: 6255 McLeod Ave, Suite 24, Las Vegas, NV 89120

Phone: 775-355-1044
 Fax: 775-355-0406
 Phone: 916-366-9089
 Phone: 714-366-2901
 Phone: 775-388-7043
 Phone: 702-281-4848

04520

Consultant/ Client Info:

Company: HDR
 Address: 2365 W. Pt Rd
 City, State, Zip: Folsom CA
 Job # OWA
 Job Name: _____
 P.O. #: _____

Job and Purchase Order Info:

OT - Other So-Soil WA - Waste ** B - Brass L - Litter O - Other OT - Other P - Plastic S - Soil Jar T - Tedlar V - VOA
 AR CA KS NV OR WA DOD Site Other

Report Attention/Project Manager:

Name: Clayton Mober
 Email Address: clayton.mober@HDRinc.com
 Phone #: _____
 Cell #: _____
 S30-0102-7106

QC Deliverable Info:

EDD Required? Yes / No
 EDF Required? Yes / No
 Global ID: _____
 Date Validation Packages: III or IV

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

Time Sampled (HHMM)	Date Sampled (MM/DD)	Matrix* (See Key Below)	Lab ID Number (For Lab Use Only)	Sample Description	TAT	# Containers** (See Key Below)		Field Filtered?		Analysis Requested				Remarks		
						Yes	No	Yes	No	PER: chl, pest	CAM17	SUCCS	Ext. H ₂ O			
1014	09/22	SO	HDR15092425-01	T-2 e3'	5	2,5									Field	
1153	09/22	SO		T-2 e3'	5	2,5										Field
1259	09/22	SO		T-3 e1.5'	5	2,5										
1320	09/22	SO		T-4 e3'	5	2,5										
1337	09/22	SO		T-5 e2'	5	2,5										
1350	09/22	SO		T-6 e2'	5	2,5										
1410	09/22	SO		T-7 e2.5'	5	2,5										

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: Alan W

Relinquished by: (Signature/Affiliation): Alan W Date: 9/24/15 Time: 0940

Relinquished by: (Signature/Affiliation): Alan W Date: 9/25/15 Time: 1015

Relinquished by: (Signature/Affiliation): _____ Date: _____ Time: _____

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

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.