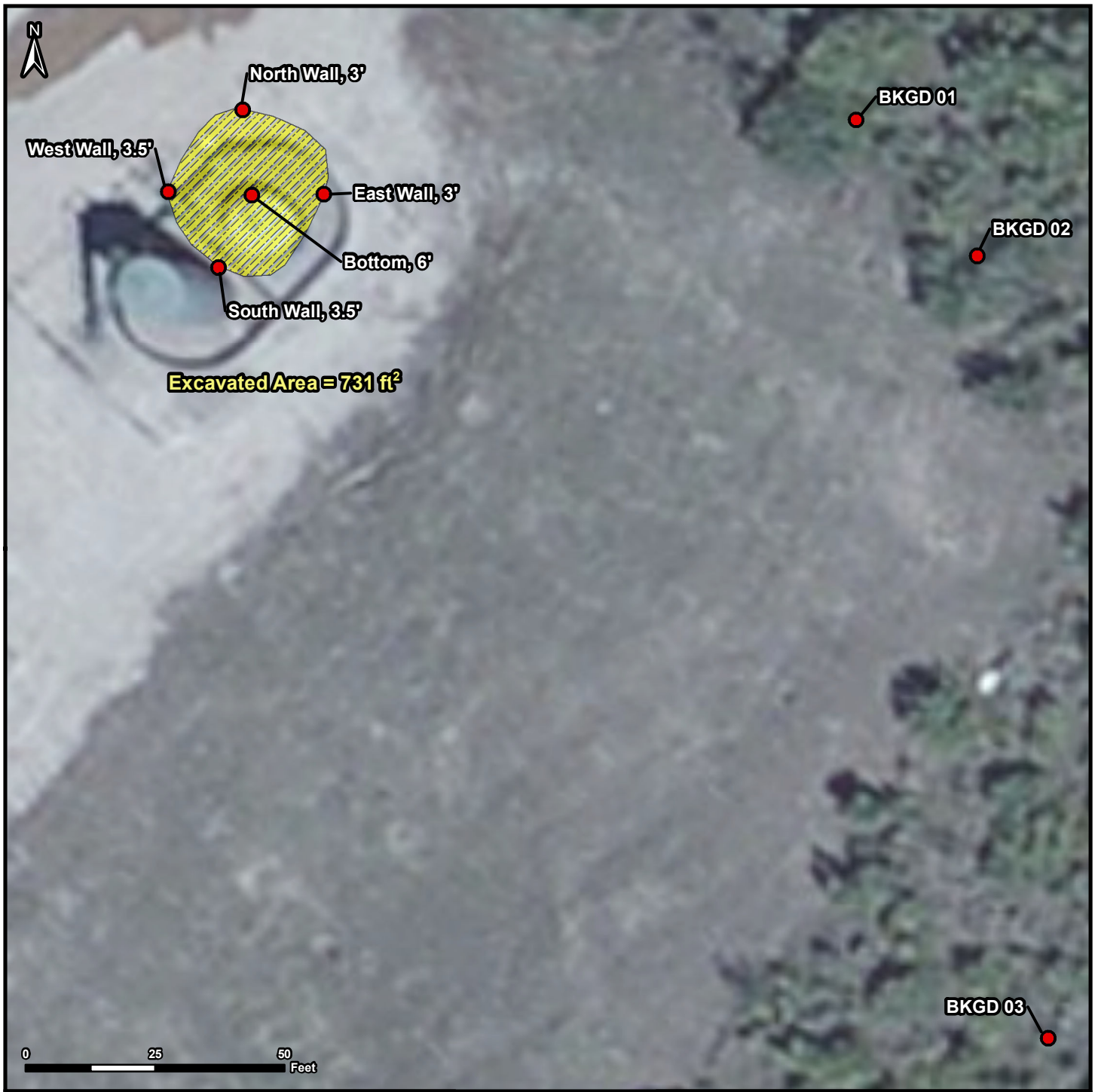
Mesa 23 (Puckett-67S96W) (Location ID 334728)
Partially Buried Vessel Removal
Form 4 (Notice of Completion)
Narrative Attachment

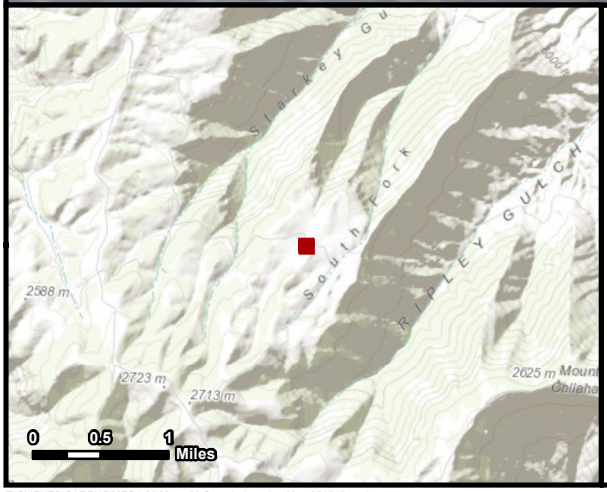
This Form 4 (Notice of Completion) was prepared for the purpose of describing completed work associated with the assessment of soil during the removal of a partially buried vessel (PBV) at the Mesa 23 (Puckett-67S96W) (Location ID 334728) pad location in the Caerus Piceance, LLC (Caerus) area of operations. This assessment was conducted using procedures approved under COGCC Remediation #8164. Based on field observations and laboratory analytical data during the assessment, a Form 19 was not submitted to the COGCC. A Sample Location Map is included as an attachment to this form.

Upon removing the PBV from the ground, visual observations and field screening of soil around and below the tank indicated that impacted soil was not present. Therefore, no soil was removed.

On July 14, 2015, confirmation soil samples were collected from the soil around and beneath the removed PBV (North Wall, 3', Bottom, 6', West Wall, 3.5', East Wall, 3', and South Wall, 3.5'). Soil samples were submitted for laboratory analysis of all COGCC Table 910-1 analytes. Analytical results indicate all soil samples were in compliance with COGCC Table 910-1 Concentration Levels for all analytes or were within background concentrations. Background samples from a nearby pad (Mesa 16, COGCC Facility Number 335519) were used for comparison. Sample locations are depicted on the attached Sample Location Map and laboratory analytical results are summarized in the attached analytical table. Laboratory analytical reports are included as an attachment.

Based on removal of the PBV and soil analytical results, Caerus requests an NFA designation for this project.





NOTES / COMMENTS:

DISCLAIMER: This representation and the Geographic Information System (GIS) used to create it are designed as a source of reference and not intended to replace official records and/or legal surveys. HCSI assumes no responsibility for any risks, dangers, or liabilities that may result from its use and makes no guarantees as to the quality or accuracy of the underlying data.

CAERUS OIL AND GAS LLC

Sample Location Map

Mesa 23, PBV Removal

39.454353 -108.151894

Sample Points

Excavated Area

HRL Compliance Solutions, Inc.
Environmental Consultants

Author:	*E. Fought*
Revision:	*0*
Date:	*7/15/2015*

T:\CLIENTS\CAERUS\MESA 23\Mesa 23 Sample Location Map 071515.mxd

Caerus Piceance, LLC
Mesa 23 Partially Buried Vault Removal
Confirmation Analytical Results

		Sample Location										
COGCC Table 910-1 Analyte Suite	**Table 910-1 Standard**	**North Wall, 3'**	**South Wall, 3.5'**	**East Wall, 3'**	**West Wall, 3.5'**	**Bottom, 6'**	**BKGD 01**	**BKGD 02**	**BKGD 03**	**AS 1***	**AS 2***	**AS 3***
Sample Date		**7/14/2015**	**7/14/2015**	**7/14/2015**	**7/14/2015**	**7/14/2015**	**7/14/2015**	**7/14/2015**	**7/14/2015**	**5/4/2011**	**5/4/2011**	**5/4/2011**
Organic Compounds in Soils												
TEPH (DRO)	500	30	57	39	57	63	NA	NA	NA	NA	NA	NA
TVPH (GRO)	500	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
TPH (DRO+GRO)	500	30	57	39	57	63	NA	NA	NA	NA	NA	NA
BENZENE	0.17	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
TOLUENE	85	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	100	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
m,p-XYLENE	175	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
o-XYLENE	175	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
XYLENE TOTAL	175	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	1,000	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
ANTHRACENE	1,000	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
BENZO(A)ANTRHACENE	0.22	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	0.022	ND	ND	ND	ND	0.011	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	0.22	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	2.2	ND	ND	ND	ND	0.012	NA	NA	NA	NA	NA	NA
CHRYSENE	22	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRANCENE	0.022	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
FLUORANTHENE	1,000	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
FLUORENE	1,000	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	0.22	ND	ND	ND	ND	0.015	NA	NA	NA	NA	NA	NA
NAPHTHALENE	23	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
PYRENE	1,000	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
Metals in Soils												
MERCURY	23	0.032	0.027	0.025	0.030	0.015	NA	NA	NA	NA	NA	NA
ARSENIC	0.39	13	27	16	14	6.6	8.7	8.4	7.1	23	28	44
BARIUM	15,000	310	280	300	360	150	NA	NA	NA	NA	NA	NA
CADMIUM	70	ND	0.69	ND	ND	ND	NA	NA	NA	NA	NA	NA
CHROMIUM (III)	120,000	30	24	22	30	12	NA	NA	NA	NA	NA	NA
CHROMIUM (IV)	23	ND	1.5	ND	ND	1.5	NA	NA	NA	NA	NA	NA
COPPER	3,100	26	24	23	25	12	NA	NA	NA	NA	NA	NA
LEAD	400	12	8.6	9.8	11	4.2	NA	NA	NA	NA	NA	NA
NICKEL	1,600	41	37	32	38	19	NA	NA	NA	NA	NA	NA
SELENIUM	390	0.82	0.68	ND	ND	ND	NA	NA	NA	NA	NA	NA
SILVER	390	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
ZINC	23,000	50	57	46	54	23	NA	NA	NA	NA	NA	NA
Inorganics in Soils												
Sodium Absorption Ratio (unitless)	<12[5]	0.79	0.58	0.76	1.1	2.9	NA	NA	0.18	NA	NA	0.18
Electric Conductivity (mmhos/cm)	<4mmhos/cm or 2x background	2.3	0.28	2.1	1.5	0.87	NA	NA	0.55	NA	NA	0.55
pH (unitless)	6 to 9	7.7	8.2	7.9	7.9	8.7	NA	NA	6.6	NA	NA	6.6

* These samples were collected from an undisturbed area near the Mesa 16 pad (COGCC Facility Number 335519)

all results in mg/kg unless noted

highlight indicates reading above COGCC Table 910-1 standards

NA=not analyzed

ND=non detect

27-Jul-2015

Casey Richardson
HRL Compliance Solutions, Inc
2385 F 1/2 Road
Grand Junction, CO 81505

Re: **Caerus Mesa 23 PBV Removal** Work Order: **1507786**

Dear Casey,

ALS Environmental received 5 samples on 15-Jul-2015 09:30 AM for the analyses presented in the following report.

This is a REVISED REPORT. The Case Narrative provides information discussing the reason for issuing a revised report. The total number of pages in this revision is 33.

If you have any questions regarding these test results, please feel free to contact me.

Sincerely,

Electronically approved by: Les Arnold

Les Arnold
Senior Project Manager

Certificate No: MN 532786

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 27-Jul-15

Client: HRL Compliance Solutions, Inc
Project: Caerus Mesa 23 PBV Removal
Work Order: **1507786**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1507786-01	North Wall, 3'	Soil		7/14/2015 11:34	7/15/2015 09:30	☐
1507786-02	South Wall, 3.5'	Soil		7/14/2015 11:32	7/15/2015 09:30	☐
1507786-03	East Wall, 3'	Soil		7/14/2015 11:36	7/15/2015 09:30	☐
1507786-04	West Wall, 3.5'	Soil		7/14/2015 11:28	7/15/2015 09:30	☐
1507786-05	Bottom, 6'	Soil		7/14/2015 11:25	7/15/2015 09:30	☐

Client: HRL Compliance Solutions, Inc
Project: Caerus Mesa 23 PBV Removal
WorkOrder: **1507786**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	
s.u.	Standard Units

ALS Group USA, Corp

Date: 27-Jul-15

Client: HRL Compliance Solutions, Inc
Project: Caerus Mesa 23 PBV Removal
Work Order: 1507786

Case Narrative

Samples for the above noted Work Order were received on 0/15/2015. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

This is a revised report to report the results of PAH re-analysis on sample 1507786-06. The sample extract was reanalyzed at the client's request and upon review of the original and the reanalysis, it was determined the original analysis quantitation was effected by poor chromatography which effected the baseline and therefore the quantitation.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting.

With the following exceptions, all sample analyses achieved analytical criteria.

Sample Receiving:
No deviations or anomalies were noted.

Volatile Organics:
No deviations or anomalies were noted.

Extractable Organics:
No deviations or anomalies were noted.

Metals:
No deviations or anomalies were noted.

Wet Chemistry:
No deviations or anomalies were noted.

ALS Group USA, Corp

Date: *27-Jul-15*

Client: HRL Compliance Solutions, Inc
Project: Caerus Mesa 23 PBV Removal
Work Order: 1507786
Sample ID: North Wall, 3'
Lab ID: 1507786-01
Collection Date: 7/14/2015 11:34 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep: SW3541 / 7/16/15	Analyst: **IT**
DRO (C10-C28)	**30**		**5.2**	**mg/Kg-dry**	1	7/17/2015 07:39 AM
Surr: 4-Terphenyl-d14	*68.2*		*39-133*	*%REC*	1	7/17/2015 07:39 AM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**		Prep: SW5035 / 7/15/15	Analyst: **IT**
GRO (C6-C10)	ND		3.2	mg/Kg-dry	1	7/17/2015 03:12 AM
Surr: Toluene-d8	*96.6*		*50-150*	*%REC*	1	7/17/2015 03:12 AM
MERCURY BY CVAA			**SW7471B**		Prep: SW7471 / 7/20/15	Analyst: **LR**
Mercury	**0.032**		**0.019**	**mg/Kg-dry**	1	7/21/2015 07:40 PM
METALS ANALYSIS BY ICP			**SW846 6010C**		Prep: SW3050B / 7/16/15	Analyst: **JEC**
Arsenic	**13**		**0.52**	**mg/Kg-dry**	1	7/17/2015 11:27 AM
Barium	**310**		**0.52**	**mg/Kg-dry**	1	7/17/2015 11:27 AM
Cadmium	ND		0.42	mg/Kg-dry	1	7/17/2015 11:27 AM
Chromium	**30**		**0.52**	**mg/Kg-dry**	1	7/17/2015 11:27 AM
Copper	**26**		**0.52**	**mg/Kg-dry**	1	7/17/2015 11:27 AM
Lead	**12**		**0.52**	**mg/Kg-dry**	1	7/17/2015 11:27 AM
Nickel	**41**		**0.52**	**mg/Kg-dry**	1	7/17/2015 11:27 AM
Selenium	**0.82**		**0.52**	**mg/Kg-dry**	1	7/17/2015 11:27 AM
Silver	ND		0.52	mg/Kg-dry	1	7/17/2015 11:27 AM
Zinc	**50**		**1.0**	**mg/Kg-dry**	1	7/17/2015 11:27 AM
SOLUBLE CATIONS FOR SAR			**SW846 6010C**		Prep: USDA Method 20B / 7/17/15	Analyst: **JEC**
Calcium	**270**		**5.0**	**mg/L**	10	7/17/2015 02:52 PM
Magnesium	**47**		**2.0**	**mg/L**	10	7/17/2015 02:52 PM
Sodium	**54**		**2.0**	**mg/L**	10	7/17/2015 02:52 PM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep: USDA Method 20B / 7/17/15	Analyst: **RH**
Sodium Adsorption Ratio	**0.79**		**0.010**	**none**	1	7/17/2015
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3541 / 7/16/15	Analyst: **RS**
Acenaphthene	ND		0.0084	mg/Kg-dry	1	7/16/2015 07:29 PM
Acenaphthylene	ND		0.0084	mg/Kg-dry	1	7/16/2015 07:29 PM
Anthracene	ND		0.0084	mg/Kg-dry	1	7/16/2015 07:29 PM
Benzo(a)anthracene	ND		0.0084	mg/Kg-dry	1	7/16/2015 07:29 PM
Benzo(a)pyrene	ND		0.0084	mg/Kg-dry	1	7/16/2015 07:29 PM
Benzo(b)fluoranthene	ND		0.0084	mg/Kg-dry	1	7/16/2015 07:29 PM
Benzo(g,h,i)perylene	ND		0.0084	mg/Kg-dry	1	7/16/2015 07:29 PM
Benzo(k)fluoranthene	ND		0.0084	mg/Kg-dry	1	7/16/2015 07:29 PM
Chrysene	ND		0.0084	mg/Kg-dry	1	7/16/2015 07:29 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: HRL Compliance Solutions, Inc
Project: Caerus Mesa 23 PBV Removal
Work Order: 1507786
Sample ID: North Wall, 3'
Lab ID: 1507786-01
Collection Date: 7/14/2015 11:34 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Dibenzo(a,h)anthracene	ND		0.0084	mg/Kg-dry	1	7/16/2015 07:29 PM
Fluoranthene	ND		0.0084	mg/Kg-dry	1	7/16/2015 07:29 PM
Fluorene	ND		0.0084	mg/Kg-dry	1	7/16/2015 07:29 PM
Indeno(1,2,3-cd)pyrene	ND		0.0084	mg/Kg-dry	1	7/16/2015 07:29 PM
Naphthalene	ND		0.0084	mg/Kg-dry	1	7/16/2015 07:29 PM
Pyrene	ND		0.0084	mg/Kg-dry	1	7/16/2015 07:29 PM
Surr: 2-Fluorobiphenyl	*62.7*		*12-100*	*%REC*	1	7/16/2015 07:29 PM
Surr: 4-Terphenyl-d14	*78.6*		*25-137*	*%REC*	1	7/16/2015 07:29 PM
Surr: Nitrobenzene-d5	*59.2*		*37-107*	*%REC*	1	7/16/2015 07:29 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**		Prep: SW5035 / 7/15/15	Analyst: **LSY**
Benzene	ND		0.039	mg/Kg-dry	1	7/20/2015 03:06 AM
Ethylbenzene	ND		0.039	mg/Kg-dry	1	7/20/2015 03:06 AM
m,p-Xylene	ND		0.078	mg/Kg-dry	1	7/20/2015 03:06 AM
o-Xylene	ND		0.039	mg/Kg-dry	1	7/20/2015 03:06 AM
Toluene	ND		0.039	mg/Kg-dry	1	7/20/2015 03:06 AM
Xylenes, Total	ND		0.12	mg/Kg-dry	1	7/20/2015 03:06 AM
Surr: 1,2-Dichloroethane-d4	*103*		*70-130*	*%REC*	1	7/20/2015 03:06 AM
Surr: 4-Bromofluorobenzene	*88.2*		*70-130*	*%REC*	1	7/20/2015 03:06 AM
Surr: Dibromofluoromethane	*108*		*70-130*	*%REC*	1	7/20/2015 03:06 AM
Surr: Toluene-d8	*96.4*		*70-130*	*%REC*	1	7/20/2015 03:06 AM
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**		Prep: USDA Method 20B / 7/17/15	Analyst: **JB**
Electrical Conductivity @ Saturation	**2.3**		**0.050**	**mmhos/cm @25**	10	7/20/2015 10:45 AM
CHROMIUM, TRIVALENT			**CALCULATION**			Analyst: **JJG**
Chromium, Trivalent	**30**		**0.65**	**mg/Kg-dry**	1	7/22/2015 09:24 AM
CHROMIUM, HEXAVALENT			**SW7196A**		Prep: SW3060A / 7/15/15	Analyst: **EE**
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	7/16/2015 02:00 PM
MOISTURE			**E160.3M**			Analyst: **PT**
Moisture	**23**		**0.050**	**% of sample**	1	7/16/2015 03:25 PM
PH			**SW9045D**		Prep: EXTRACT / 7/16/15	Analyst: **STP**
pH	**7.7**			**s.u.**	1	7/16/2015 01:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *27-Jul-15*

Client: HRL Compliance Solutions, Inc
Project: Caerus Mesa 23 PBV Removal
Work Order: 1507786
Sample ID: South Wall, 3.5'
Lab ID: 1507786-02
Collection Date: 7/14/2015 11:32 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep: SW3541 / 7/16/15	Analyst: **IT**
DRO (C10-C28)	**57**		**4.9**	**mg/Kg-dry**	1	7/17/2015 08:10 AM
Surr: 4-Terphenyl-d14	*73.5*		*39-133*	*%REC*	1	7/17/2015 08:10 AM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**		Prep: SW5035 / 7/15/15	Analyst: **IT**
GRO (C6-C10)	ND		3.0	mg/Kg-dry	1	7/17/2015 03:36 AM
Surr: Toluene-d8	*100*		*50-150*	*%REC*	1	7/17/2015 03:36 AM
MERCURY BY CVAA			**SW7471B**		Prep: SW7471 / 7/20/15	Analyst: **LR**
Mercury	**0.027**		**0.016**	**mg/Kg-dry**	1	7/21/2015 07:43 PM
METALS ANALYSIS BY ICP			**SW846 6010C**		Prep: SW3050B / 7/16/15	Analyst: **JEC**
Arsenic	**27**		**0.43**	**mg/Kg-dry**	1	7/17/2015 11:32 AM
Barium	**280**		**0.43**	**mg/Kg-dry**	1	7/17/2015 11:32 AM
Cadmium	**0.69**		**0.35**	**mg/Kg-dry**	1	7/17/2015 11:32 AM
Chromium	**25**		**0.43**	**mg/Kg-dry**	1	7/17/2015 11:32 AM
Copper	**24**		**0.43**	**mg/Kg-dry**	1	7/17/2015 11:32 AM
Lead	**8.6**		**0.43**	**mg/Kg-dry**	1	7/17/2015 11:32 AM
Nickel	**37**		**0.43**	**mg/Kg-dry**	1	7/17/2015 11:32 AM
Selenium	**0.68**		**0.43**	**mg/Kg-dry**	1	7/17/2015 11:32 AM
Silver	ND		0.43	mg/Kg-dry	1	7/17/2015 11:32 AM
Zinc	**57**		**0.86**	**mg/Kg-dry**	1	7/17/2015 11:32 AM
SOLUBLE CATIONS FOR SAR			**SW846 6010C**		Prep: USDA Method 20B / 7/17/15	Analyst: **JEC**
Calcium	**28**		**5.0**	**mg/L**	10	7/17/2015 02:57 PM
Magnesium	**6.7**		**2.0**	**mg/L**	10	7/17/2015 02:57 PM
Sodium	**13**		**2.0**	**mg/L**	10	7/17/2015 02:57 PM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep: USDA Method 20B / 7/17/15	Analyst: **RH**
Sodium Adsorption Ratio	**0.58**		**0.010**	**none**	1	7/17/2015
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3541 / 7/16/15	Analyst: **RS**
Acenaphthene	ND		0.0079	mg/Kg-dry	1	7/16/2015 07:51 PM
Acenaphthylene	ND		0.0079	mg/Kg-dry	1	7/16/2015 07:51 PM
Anthracene	ND		0.0079	mg/Kg-dry	1	7/16/2015 07:51 PM
Benzo(a)anthracene	ND		0.0079	mg/Kg-dry	1	7/16/2015 07:51 PM
Benzo(a)pyrene	ND		0.0079	mg/Kg-dry	1	7/16/2015 07:51 PM
Benzo(b)fluoranthene	ND		0.0079	mg/Kg-dry	1	7/16/2015 07:51 PM
Benzo(g,h,i)perylene	ND		0.0079	mg/Kg-dry	1	7/16/2015 07:51 PM
Benzo(k)fluoranthene	ND		0.0079	mg/Kg-dry	1	7/16/2015 07:51 PM
Chrysene	ND		0.0079	mg/Kg-dry	1	7/16/2015 07:51 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: HRL Compliance Solutions, Inc
Project: Caerus Mesa 23 PBV Removal
Work Order: 1507786
Sample ID: South Wall, 3.5'
Lab ID: 1507786-02
Collection Date: 7/14/2015 11:32 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Dibenzo(a,h)anthracene	ND		0.0079	mg/Kg-dry	1	7/16/2015 07:51 PM
Fluoranthene	ND		0.0079	mg/Kg-dry	1	7/16/2015 07:51 PM
Fluorene	ND		0.0079	mg/Kg-dry	1	7/16/2015 07:51 PM
Indeno(1,2,3-cd)pyrene	ND		0.0079	mg/Kg-dry	1	7/16/2015 07:51 PM
Naphthalene	ND		0.0079	mg/Kg-dry	1	7/16/2015 07:51 PM
Pyrene	ND		0.0079	mg/Kg-dry	1	7/16/2015 07:51 PM
Surr: 2-Fluorobiphenyl	*64.9*		*12-100*	*%REC*	1	7/16/2015 07:51 PM
Surr: 4-Terphenyl-d14	*75.7*		*25-137*	*%REC*	1	7/16/2015 07:51 PM
Surr: Nitrobenzene-d5	*59.2*		*37-107*	*%REC*	1	7/16/2015 07:51 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**		Prep: SW5035 / 7/15/15	Analyst: **LSY**
Benzene	ND		0.036	mg/Kg-dry	1	7/20/2015 03:32 AM
Ethylbenzene	ND		0.036	mg/Kg-dry	1	7/20/2015 03:32 AM
m,p-Xylene	ND		0.072	mg/Kg-dry	1	7/20/2015 03:32 AM
o-Xylene	ND		0.036	mg/Kg-dry	1	7/20/2015 03:32 AM
Toluene	ND		0.036	mg/Kg-dry	1	7/20/2015 03:32 AM
Xylenes, Total	ND		0.11	mg/Kg-dry	1	7/20/2015 03:32 AM
Surr: 1,2-Dichloroethane-d4	*108*		*70-130*	*%REC*	1	7/20/2015 03:32 AM
Surr: 4-Bromofluorobenzene	*87.5*		*70-130*	*%REC*	1	7/20/2015 03:32 AM
Surr: Dibromofluoromethane	*109*		*70-130*	*%REC*	1	7/20/2015 03:32 AM
Surr: Toluene-d8	*94.8*		*70-130*	*%REC*	1	7/20/2015 03:32 AM
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**		Prep: USDA Method 20B / 7/17/15	Analyst: **JB**
Electrical Conductivity @ Saturation	**0.28**		**0.050**	**mmhos/cm @25**	10	7/20/2015 10:45 AM
CHROMIUM, TRIVALENT			**CALCULATION**			Analyst: **JJG**
Chromium, Trivalent	**24**		**0.60**	**mg/Kg-dry**	1	7/22/2015 09:24 AM
CHROMIUM, HEXAVALENT			**SW7196A**		Prep: SW3060A / 7/15/15	Analyst: **EE**
Chromium, Hexavalent	**1.5**		**1.1**	**mg/Kg-dry**	1	7/16/2015 02:00 PM
MOISTURE			**E160.3M**			Analyst: **PT**
Moisture	**17**		**0.050**	**% of sample**	1	7/16/2015 03:25 PM
PH			**SW9045D**		Prep: EXTRACT / 7/16/15	Analyst: **STP**
pH	**8.2**			**s.u.**	1	7/16/2015 01:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *27-Jul-15*

Client: HRL Compliance Solutions, Inc
Project: Caerus Mesa 23 PBV Removal
Work Order: 1507786
Sample ID: East Wall, 3'
Lab ID: 1507786-03
Collection Date: 7/14/2015 11:36 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep: SW3541 / 7/16/15	Analyst: **IT**
DRO (C10-C28)	**39**		**5.0**	**mg/Kg-dry**	1	7/17/2015 07:24 PM
Surr: 4-Terphenyl-d14	*71.3*		*39-133*	*%REC*	1	7/17/2015 07:24 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**		Prep: SW5035 / 7/15/15	Analyst: **IT**
GRO (C6-C10)	ND		3.0	mg/Kg-dry	1	7/17/2015 04:01 AM
Surr: Toluene-d8	*99.7*		*50-150*	*%REC*	1	7/17/2015 04:01 AM
MERCURY BY CVAA			**SW7471B**		Prep: SW7471 / 7/20/15	Analyst: **LR**
Mercury	**0.025**		**0.017**	**mg/Kg-dry**	1	7/21/2015 07:45 PM
METALS ANALYSIS BY ICP			**SW846 6010C**		Prep: SW3050B / 7/16/15	Analyst: **JEC**
Arsenic	**16**		**0.41**	**mg/Kg-dry**	1	7/17/2015 12:39 PM
Barium	**300**		**0.41**	**mg/Kg-dry**	1	7/17/2015 12:39 PM
Cadmium	ND		0.33	mg/Kg-dry	1	7/17/2015 12:39 PM
Chromium	**22**		**0.41**	**mg/Kg-dry**	1	7/17/2015 12:39 PM
Copper	**23**		**0.41**	**mg/Kg-dry**	1	7/17/2015 12:39 PM
Lead	**9.8**		**0.41**	**mg/Kg-dry**	1	7/17/2015 12:39 PM
Nickel	**32**		**0.41**	**mg/Kg-dry**	1	7/17/2015 12:39 PM
Selenium	ND		2.0	mg/Kg-dry	5	7/21/2015 11:53 AM
Silver	ND		0.41	mg/Kg-dry	1	7/17/2015 12:39 PM
Zinc	**46**		**0.82**	**mg/Kg-dry**	1	7/17/2015 12:39 PM
SOLUBLE CATIONS FOR SAR			**SW846 6010C**		Prep: USDA Method 20B / 7/17/15	Analyst: **JEC**
Calcium	**170**		**5.0**	**mg/L**	10	7/17/2015 03:03 PM
Magnesium	**35**		**2.0**	**mg/L**	10	7/17/2015 03:03 PM
Sodium	**42**		**2.0**	**mg/L**	10	7/17/2015 03:03 PM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep: USDA Method 20B / 7/17/15	Analyst: **RH**
Sodium Adsorption Ratio	**0.76**		**0.010**	**none**	1	7/17/2015
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3541 / 7/16/15	Analyst: **RS**
Acenaphthene	ND		0.0080	mg/Kg-dry	1	7/16/2015 08:13 PM
Acenaphthylene	ND		0.0080	mg/Kg-dry	1	7/16/2015 08:13 PM
Anthracene	ND		0.0080	mg/Kg-dry	1	7/16/2015 08:13 PM
Benzo(a)anthracene	ND		0.0080	mg/Kg-dry	1	7/16/2015 08:13 PM
Benzo(a)pyrene	ND		0.0080	mg/Kg-dry	1	7/16/2015 08:13 PM
Benzo(b)fluoranthene	ND		0.0080	mg/Kg-dry	1	7/16/2015 08:13 PM
Benzo(g,h,i)perylene	ND		0.0080	mg/Kg-dry	1	7/16/2015 08:13 PM
Benzo(k)fluoranthene	ND		0.0080	mg/Kg-dry	1	7/16/2015 08:13 PM
Chrysene	ND		0.0080	mg/Kg-dry	1	7/16/2015 08:13 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: HRL Compliance Solutions, Inc
Project: Caerus Mesa 23 PBV Removal
Work Order: 1507786
Sample ID: East Wall, 3'
Lab ID: 1507786-03
Collection Date: 7/14/2015 11:36 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Dibenzo(a,h)anthracene	ND		0.0080	mg/Kg-dry	1	7/16/2015 08:13 PM
Fluoranthene	ND		0.0080	mg/Kg-dry	1	7/16/2015 08:13 PM
Fluorene	ND		0.0080	mg/Kg-dry	1	7/16/2015 08:13 PM
Indeno(1,2,3-cd)pyrene	ND		0.0080	mg/Kg-dry	1	7/16/2015 08:13 PM
Naphthalene	ND		0.0080	mg/Kg-dry	1	7/16/2015 08:13 PM
Pyrene	ND		0.0080	mg/Kg-dry	1	7/16/2015 08:13 PM
Surr: 2-Fluorobiphenyl	*60.4*		*12-100*	*%REC*	1	7/16/2015 08:13 PM
Surr: 4-Terphenyl-d14	*73.8*		*25-137*	*%REC*	1	7/16/2015 08:13 PM
Surr: Nitrobenzene-d5	*52.0*		*37-107*	*%REC*	1	7/16/2015 08:13 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**		Prep: SW5035 / 7/15/15	Analyst: **LSY**
Benzene	ND		0.036	mg/Kg-dry	1	7/20/2015 03:57 AM
Ethylbenzene	ND		0.036	mg/Kg-dry	1	7/20/2015 03:57 AM
m,p-Xylene	ND		0.073	mg/Kg-dry	1	7/20/2015 03:57 AM
o-Xylene	ND		0.036	mg/Kg-dry	1	7/20/2015 03:57 AM
Toluene	ND		0.036	mg/Kg-dry	1	7/20/2015 03:57 AM
Xylenes, Total	ND		0.11	mg/Kg-dry	1	7/20/2015 03:57 AM
Surr: 1,2-Dichloroethane-d4	*104*		*70-130*	*%REC*	1	7/20/2015 03:57 AM
Surr: 4-Bromofluorobenzene	*92.0*		*70-130*	*%REC*	1	7/20/2015 03:57 AM
Surr: Dibromofluoromethane	*106*		*70-130*	*%REC*	1	7/20/2015 03:57 AM
Surr: Toluene-d8	*95.5*		*70-130*	*%REC*	1	7/20/2015 03:57 AM
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**		Prep: USDA Method 20B / 7/17/15	Analyst: **JB**
Electrical Conductivity @ Saturation	**2.1**		**0.12**	**mmhos/cm @25**	25	7/20/2015 10:45 AM
CHROMIUM, TRIVALENT			**CALCULATION**			Analyst: **JJG**
Chromium, Trivalent	**22**		**0.61**	**mg/Kg-dry**	1	7/22/2015 09:24 AM
CHROMIUM, HEXAVALENT			**SW7196A**		Prep: SW3060A / 7/15/15	Analyst: **EE**
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	7/16/2015 02:00 PM
MOISTURE			**E160.3M**			Analyst: **PT**
Moisture	**18**		**0.050**	**% of sample**	1	7/16/2015 03:25 PM
PH			**SW9045D**		Prep: EXTRACT / 7/16/15	Analyst: **STP**
pH	**7.9**			**s.u.**	1	7/16/2015 01:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *27-Jul-15*

Client: HRL Compliance Solutions, Inc
Project: Caerus Mesa 23 PBV Removal
Work Order: 1507786
Sample ID: West Wall, 3.5'
Lab ID: 1507786-04
Collection Date: 7/14/2015 11:28 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep: SW3541 / 7/16/15	Analyst: **IT**
DRO (C10-C28)	**57**		**5.2**	**mg/Kg-dry**	1	7/17/2015 07:54 PM
Surr: 4-Terphenyl-d14	*67.4*		*39-133*	*%REC*	1	7/17/2015 07:54 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**		Prep: SW5035 / 7/15/15	Analyst: **IT**
GRO (C6-C10)	ND		3.2	mg/Kg-dry	1	7/17/2015 04:25 AM
Surr: Toluene-d8	*97.1*		*50-150*	*%REC*	1	7/17/2015 04:25 AM
MERCURY BY CVAA			**SW7471B**		Prep: SW7471 / 7/20/15	Analyst: **LR**
Mercury	**0.030**		**0.018**	**mg/Kg-dry**	1	7/21/2015 07:47 PM
METALS ANALYSIS BY ICP			**SW846 6010C**		Prep: SW3050B / 7/16/15	Analyst: **JEC**
Arsenic	**14**		**0.49**	**mg/Kg-dry**	1	7/17/2015 12:45 PM
Barium	**360**		**0.49**	**mg/Kg-dry**	1	7/17/2015 12:45 PM
Cadmium	ND		0.39	mg/Kg-dry	1	7/17/2015 12:45 PM
Chromium	**30**		**0.49**	**mg/Kg-dry**	1	7/17/2015 12:45 PM
Copper	**25**		**0.49**	**mg/Kg-dry**	1	7/17/2015 12:45 PM
Lead	**11**		**0.49**	**mg/Kg-dry**	1	7/17/2015 12:45 PM
Nickel	**38**		**0.49**	**mg/Kg-dry**	1	7/17/2015 12:45 PM
Selenium	ND		2.4	mg/Kg-dry	5	7/21/2015 11:58 AM
Silver	ND		0.49	mg/Kg-dry	1	7/17/2015 12:45 PM
Zinc	**54**		**0.98**	**mg/Kg-dry**	1	7/17/2015 12:45 PM
SOLUBLE CATIONS FOR SAR			**SW846 6010C**		Prep: USDA Method 20B / 7/17/15	Analyst: **JEC**
Calcium	**110**		**5.0**	**mg/L**	10	7/17/2015 03:09 PM
Magnesium	**32**		**2.0**	**mg/L**	10	7/17/2015 03:09 PM
Sodium	**53**		**2.0**	**mg/L**	10	7/17/2015 03:09 PM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep: USDA Method 20B / 7/17/15	Analyst: **RH**
Sodium Adsorption Ratio	**1.1**		**0.010**	**none**	1	7/17/2015
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3541 / 7/16/15	Analyst: **RS**
Acenaphthene	ND		0.0084	mg/Kg-dry	1	7/16/2015 08:36 PM
Acenaphthylene	ND		0.0084	mg/Kg-dry	1	7/16/2015 08:36 PM
Anthracene	ND		0.0084	mg/Kg-dry	1	7/16/2015 08:36 PM
Benzo(a)anthracene	ND		0.0084	mg/Kg-dry	1	7/16/2015 08:36 PM
Benzo(a)pyrene	ND		0.0084	mg/Kg-dry	1	7/16/2015 08:36 PM
Benzo(b)fluoranthene	ND		0.0084	mg/Kg-dry	1	7/16/2015 08:36 PM
Benzo(g,h,i)perylene	ND		0.0084	mg/Kg-dry	1	7/16/2015 08:36 PM
Benzo(k)fluoranthene	ND		0.0084	mg/Kg-dry	1	7/16/2015 08:36 PM
Chrysene	ND		0.0084	mg/Kg-dry	1	7/16/2015 08:36 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: HRL Compliance Solutions, Inc
Project: Caerus Mesa 23 PBV Removal
Work Order: 1507786
Sample ID: West Wall, 3.5'
Lab ID: 1507786-04
Collection Date: 7/14/2015 11:28 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Dibenzo(a,h)anthracene	ND		0.0084	mg/Kg-dry	1	7/16/2015 08:36 PM
Fluoranthene	ND		0.0084	mg/Kg-dry	1	7/16/2015 08:36 PM
Fluorene	ND		0.0084	mg/Kg-dry	1	7/16/2015 08:36 PM
Indeno(1,2,3-cd)pyrene	ND		0.0084	mg/Kg-dry	1	7/16/2015 08:36 PM
Naphthalene	ND		0.0084	mg/Kg-dry	1	7/16/2015 08:36 PM
Pyrene	ND		0.0084	mg/Kg-dry	1	7/16/2015 08:36 PM
Surr: 2-Fluorobiphenyl	*66.2*		*12-100*	*%REC*	1	7/16/2015 08:36 PM
Surr: 4-Terphenyl-d14	*81.0*		*25-137*	*%REC*	1	7/16/2015 08:36 PM
Surr: Nitrobenzene-d5	*49.4*		*37-107*	*%REC*	1	7/16/2015 08:36 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**		Prep: SW5035 / 7/15/15	Analyst: **LSY**
Benzene	ND		0.038	mg/Kg-dry	1	7/20/2015 04:23 AM
Ethylbenzene	ND		0.038	mg/Kg-dry	1	7/20/2015 04:23 AM
m,p-Xylene	ND		0.077	mg/Kg-dry	1	7/20/2015 04:23 AM
o-Xylene	ND		0.038	mg/Kg-dry	1	7/20/2015 04:23 AM
Toluene	ND		0.038	mg/Kg-dry	1	7/20/2015 04:23 AM
Xylenes, Total	ND		0.12	mg/Kg-dry	1	7/20/2015 04:23 AM
Surr: 1,2-Dichloroethane-d4	*106*		*70-130*	*%REC*	1	7/20/2015 04:23 AM
Surr: 4-Bromofluorobenzene	*90.8*		*70-130*	*%REC*	1	7/20/2015 04:23 AM
Surr: Dibromofluoromethane	*110*		*70-130*	*%REC*	1	7/20/2015 04:23 AM
Surr: Toluene-d8	*95.8*		*70-130*	*%REC*	1	7/20/2015 04:23 AM
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**		Prep: USDA Method 20B / 7/17/15	Analyst: **JB**
Electrical Conductivity @ Saturation	**1.5**		**0.12**	**mmhos/cm @25**	25	7/20/2015 10:45 AM
CHROMIUM, TRIVALENT			**CALCULATION**			Analyst: **JJG**
Chromium, Trivalent	**30**		**0.64**	**mg/Kg-dry**	1	7/22/2015 09:24 AM
CHROMIUM, HEXAVALENT			**SW7196A**		Prep: SW3060A / 7/15/15	Analyst: **EE**
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	7/16/2015 02:00 PM
MOISTURE			**E160.3M**			Analyst: **PT**
Moisture	**22**		**0.050**	**% of sample**	1	7/16/2015 03:25 PM
PH			**SW9045D**		Prep: EXTRACT / 7/16/15	Analyst: **STP**
pH	**7.9**			**s.u.**	1	7/16/2015 01:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *27-Jul-15*

Client: HRL Compliance Solutions, Inc
Project: Caerus Mesa 23 PBV Removal
Work Order: 1507786
Sample ID: Bottom, 6'
Lab ID: 1507786-05
Collection Date: 7/14/2015 11:25 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep: SW3541 / 7/16/15	Analyst: **IT**
DRO (C10-C28)	**63**		**4.3**	**mg/Kg-dry**	1	7/17/2015 08:24 PM
Surr: 4-Terphenyl-d14	*78.2*		*39-133*	*%REC*	1	7/17/2015 08:24 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**		Prep: SW5035 / 7/15/15	Analyst: **IT**
GRO (C6-C10)	ND		2.7	mg/Kg-dry	1	7/17/2015 04:49 AM
Surr: Toluene-d8	*96.2*		*50-150*	*%REC*	1	7/17/2015 04:49 AM
MERCURY BY CVAA			**SW7471B**		Prep: SW7471 / 7/20/15	Analyst: **LR**
Mercury	**0.015**		**0.014**	**mg/Kg-dry**	1	7/21/2015 07:57 PM
METALS ANALYSIS BY ICP			**SW846 6010C**		Prep: SW3050B / 7/16/15	Analyst: **JEC**
Arsenic	**6.6**		**0.38**	**mg/Kg-dry**	1	7/17/2015 12:50 PM
Barium	**150**		**0.38**	**mg/Kg-dry**	1	7/17/2015 12:50 PM
Cadmium	ND		0.31	mg/Kg-dry	1	7/17/2015 12:50 PM
Chromium	**13**		**0.38**	**mg/Kg-dry**	1	7/17/2015 12:50 PM
Copper	**12**		**0.38**	**mg/Kg-dry**	1	7/17/2015 12:50 PM
Lead	**4.2**		**0.38**	**mg/Kg-dry**	1	7/17/2015 12:50 PM
Nickel	**19**		**0.38**	**mg/Kg-dry**	1	7/17/2015 12:50 PM
Selenium	ND		1.9	mg/Kg-dry	5	7/21/2015 12:04 PM
Silver	ND		0.38	mg/Kg-dry	1	7/17/2015 12:50 PM
Zinc	**23**		**0.77**	**mg/Kg-dry**	1	7/17/2015 12:50 PM
SOLUBLE CATIONS FOR SAR			**SW846 6010C**		Prep: USDA Method 20B / 7/17/15	Analyst: **JEC**
Calcium	**100**		**5.0**	**mg/L**	10	7/17/2015 03:14 PM
Magnesium	**21**		**2.0**	**mg/L**	10	7/17/2015 03:14 PM
Sodium	**120**		**2.0**	**mg/L**	10	7/17/2015 03:14 PM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep: USDA Method 20B / 7/17/15	Analyst: **RH**
Sodium Adsorption Ratio	**2.9**		**0.010**	**none**	1	7/17/2015
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3541 / 7/16/15	Analyst: **RS**
Acenaphthene	ND		0.0069	mg/Kg-dry	1	7/26/2015 10:00 PM
Acenaphthylene	ND		0.0069	mg/Kg-dry	1	7/26/2015 10:00 PM
Anthracene	ND		0.0069	mg/Kg-dry	1	7/26/2015 10:00 PM
Benzo(a)anthracene	ND		0.0069	mg/Kg-dry	1	7/26/2015 10:00 PM
Benzo(a)pyrene	**0.011**		**0.0069**	**mg/Kg-dry**	1	7/26/2015 10:00 PM
Benzo(b)fluoranthene	ND		0.0069	mg/Kg-dry	1	7/26/2015 10:00 PM
Benzo(g,h,i)perylene	**0.010**		**0.0069**	**mg/Kg-dry**	1	7/26/2015 10:00 PM
Benzo(k)fluoranthene	**0.012**		**0.0069**	**mg/Kg-dry**	1	7/26/2015 10:00 PM
Chrysene	ND		0.0069	mg/Kg-dry	1	7/26/2015 10:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *27-Jul-15*

Client: HRL Compliance Solutions, Inc
Project: Caerus Mesa 23 PBV Removal
Work Order: 1507786
Sample ID: Bottom, 6'
Lab ID: 1507786-05
Collection Date: 7/14/2015 11:25 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Dibenzo(a,h)anthracene	ND		0.0069	mg/Kg-dry	1	7/26/2015 10:00 PM
Fluoranthene	ND		0.0069	mg/Kg-dry	1	7/26/2015 10:00 PM
Fluorene	ND		0.0069	mg/Kg-dry	1	7/26/2015 10:00 PM
Indeno(1,2,3-cd)pyrene	**0.015**		**0.0069**	**mg/Kg-dry**	1	7/26/2015 10:00 PM
Naphthalene	ND		0.0069	mg/Kg-dry	1	7/26/2015 10:00 PM
Pyrene	ND		0.0069	mg/Kg-dry	1	7/26/2015 10:00 PM
Surr: 2-Fluorobiphenyl	*63.6*		*12-100*	*%REC*	1	7/26/2015 10:00 PM
Surr: 4-Terphenyl-d14	*71.2*		*25-137*	*%REC*	1	7/26/2015 10:00 PM
Surr: Nitrobenzene-d5	*49.8*		*37-107*	*%REC*	1	7/26/2015 10:00 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**		Prep: SW5035 / 7/15/15	Analyst: **LSY**
Benzene	ND		0.032	mg/Kg-dry	1	7/20/2015 04:49 AM
Ethylbenzene	ND		0.032	mg/Kg-dry	1	7/20/2015 04:49 AM
m,p-Xylene	ND		0.064	mg/Kg-dry	1	7/20/2015 04:49 AM
o-Xylene	ND		0.032	mg/Kg-dry	1	7/20/2015 04:49 AM
Toluene	ND		0.032	mg/Kg-dry	1	7/20/2015 04:49 AM
Xylenes, Total	ND		0.095	mg/Kg-dry	1	7/20/2015 04:49 AM
Surr: 1,2-Dichloroethane-d4	*105*		*70-130*	*%REC*	1	7/20/2015 04:49 AM
Surr: 4-Bromofluorobenzene	*87.6*		*70-130*	*%REC*	1	7/20/2015 04:49 AM
Surr: Dibromofluoromethane	*106*		*70-130*	*%REC*	1	7/20/2015 04:49 AM
Surr: Toluene-d8	*96.4*		*70-130*	*%REC*	1	7/20/2015 04:49 AM
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**		Prep: USDA Method 20B / 7/17/15	Analyst: **JB**
Electrical Conductivity @ Saturation	**0.87**		**0.050**	**mmhos/cm @25**	10	7/20/2015 10:45 AM
CHROMIUM, TRIVALENT			**CALCULATION**			Analyst: **JJG**
Chromium, Trivalent	**12**		**0.53**	**mg/Kg-dry**	1	7/22/2015 09:24 AM
CHROMIUM, HEXAVALENT			**SW7196A**		Prep: SW3060A / 7/15/15	Analyst: **EE**
Chromium, Hexavalent	**1.5**		**0.99**	**mg/Kg-dry**	1	7/16/2015 02:00 PM
MOISTURE			**E160.3M**			Analyst: **PT**
Moisture	**5.7**		**0.050**	**% of sample**	1	7/16/2015 03:25 PM
PH			**SW9045D**		Prep: EXTRACT / 7/16/15	Analyst: **STP**
pH	**8.7**			**s.u.**	1	7/16/2015 01:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

QC BATCH REPORT

Batch ID: **73587** Instrument ID **GC8** Method: **SW8015M**

MBLK Sample ID: **DBLKS1-73587-73587** Units: **mg/Kg** Analysis Date: **7/17/2015 03:39 AM**

Client ID: Run ID: **GC8_150716A** SeqNo: **3374591** Prep Date: **7/16/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	5.0								
Surr: 4-Terphenyl-d14	*1.518*	0	*2*	0	*75.9*	*39-133*	0			

LCS Sample ID: **DLCSS1-73587-73587** Units: **mg/Kg** Analysis Date: **7/17/2015 04:09 AM**

Client ID: Run ID: **GC8_150716A** SeqNo: **3374593** Prep Date: **7/16/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	159.4	5.0	200	0	79.7	61-109	0			
Surr: 4-Terphenyl-d14	*1.474*	0	*2*	0	*73.7*	*39-133*	0			

MS Sample ID: **1507832-05B MS** Units: **mg/Kg** Analysis Date: **7/17/2015 04:39 AM**

Client ID: Run ID: **GC8_150716A** SeqNo: **3374595** Prep Date: **7/16/2015** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	808.1	78	313.3	705.8	32.6	48-110	0			S
Surr: 4-Terphenyl-d14	*2.394*	0	*3.133*	0	*76.4*	*39-133*	0			

MSD Sample ID: **1507832-05B MSD** Units: **mg/Kg** Analysis Date: **7/17/2015 05:09 AM**

Client ID: Run ID: **GC8_150716A** SeqNo: **3374597** Prep Date: **7/16/2015** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	831.8	82	328.9	705.8	38.3	48-110	808.1	2.89	30	S
Surr: 4-Terphenyl-d14	*2.322*	0	*3.289*	0	*70.6*	*39-133*	2.394	*3.03*	*30*	

The following samples were analyzed in this batch: 1507786-01B, 1507786-02B, 1507786-03B, 1507786-04B, 1507786-05B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1507786
Project: Caerus Mesa 23 PBV Removal

QC BATCH REPORT

Batch ID: **73568** Instrument ID **GC10** Method: **SW8015D**

MBLK Sample ID: **MBLK-73568-73568** Units: **µg/Kg** Analysis Date: **7/16/2015 06:17 PM**
Client ID: Run ID: **GC10_150716A** SeqNo: **3374365** Prep Date: **7/15/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
Surr: Toluene-d8	*4707*	0	*5000*	0	*94.1*	*50-150*	0			

LCS Sample ID: **LCS-73568-73568** Units: **µg/Kg** Analysis Date: **7/16/2015 05:52 PM**
Client ID: Run ID: **GC10_150716A** SeqNo: **3374364** Prep Date: **7/15/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	563700	2,500	500000	0	113	70-130	0			
Surr: Toluene-d8	*4670*	0	*5000*	0	*93.4*	*50-150*	0			

MS Sample ID: **1507832-05A MS** Units: **µg/Kg** Analysis Date: **7/16/2015 09:09 PM**
Client ID: Run ID: **GC10_150716A** SeqNo: **3374375** Prep Date: **7/15/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	651500	2,500	500000	0	130	70-130	0			S
Surr: Toluene-d8	*4921*	0	*5000*	0	*98.4*	*50-150*	0			

MSD Sample ID: **1507832-05A MSD** Units: **µg/Kg** Analysis Date: **7/16/2015 09:33 PM**
Client ID: Run ID: **GC10_150716A** SeqNo: **3374376** Prep Date: **7/15/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	599600	2,500	500000	0	120	70-130	651500	8.29	30	
Surr: Toluene-d8	*4812*	0	*5000*	0	*96.2*	*50-150*	4921	*2.23*	*30*	

The following samples were analyzed in this batch:

1507786-01A	1507786-02A	1507786-03A
1507786-04A	1507786-05A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1507786
Project: Caerus Mesa 23 PBV Removal

QC BATCH REPORT

Batch ID: **73705** Instrument ID **HG1** Method: **SW7471B**

MBLK Sample ID: **MBLK-73705-73705** Units: **mg/Kg** Analysis Date: **7/20/2015 04:26 PM**
Client ID: Run ID: **HG1_150720A** SeqNo: **3377639** Prep Date: **7/20/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.020								

LCS Sample ID: **LCS-73705-73705** Units: **mg/Kg** Analysis Date: **7/20/2015 04:29 PM**
Client ID: Run ID: **HG1_150720A** SeqNo: **3377640** Prep Date: **7/20/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1802	0.020	0.1665	0	108	80-120	0			

MS Sample ID: **1507829-07BMS** Units: **mg/Kg** Analysis Date: **7/20/2015 04:38 PM**
Client ID: Run ID: **HG1_150720A** SeqNo: **3377644** Prep Date: **7/20/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1386	0.013	0.1105	0.01752	110	75-125	0			

MSD Sample ID: **1507829-07BMSD** Units: **mg/Kg** Analysis Date: **7/20/2015 04:40 PM**
Client ID: Run ID: **HG1_150720A** SeqNo: **3377645** Prep Date: **7/20/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1368	0.013	0.1087	0.01752	110	75-125	0.1386	1.29	35	

The following samples were analyzed in this batch:

1507786-01B	1507786-02B	1507786-03B
1507786-04B	1507786-05B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1507786
Project: Caerus Mesa 23 PBV Removal

QC BATCH REPORT

Batch ID: **73603** Instrument ID **SAR** Method: **USDA H60 Method**

DUP	Sample ID: **1507789-03BDUP**				Units: **none**		Analysis Date: **7/17/2015**			
Client ID:		Run ID: **SAR_150717A**			SeqNo: **3379441**		Prep Date: **7/17/2015**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	0.1449	0.010	0	0	0		0			

The following samples were analyzed in this batch:

1507786-01C	1507786-02C	1507786-03C
1507786-04C	1507786-05C	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1507786
Project: Caerus Mesa 23 PBV Removal

QC BATCH REPORT

Batch ID: **73613** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK Sample ID: **MBLK-73613-73613** Units: **mg/Kg** Analysis Date: **7/17/2015 10:39 AM**
Client ID: Run ID: **ICP2_150717A** SeqNo: **3377041** Prep Date: **7/16/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	ND	0.50								
Chromium	0.01275	0.25								J
Copper	0.04738	0.50								J
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.50								
Silver	ND	0.25								

MBLK Sample ID: **MBLK-73613-73613** Units: **mg/Kg** Analysis Date: **7/20/2015 05:21 PM**
Client ID: Run ID: **ICP2_150720A** SeqNo: **3378053** Prep Date: **7/16/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Zinc	ND	0.50								

LCS Sample ID: **LCS-73613-73613** Units: **mg/Kg** Analysis Date: **7/17/2015 10:45 AM**
Client ID: Run ID: **ICP2_150717A** SeqNo: **3377042** Prep Date: **7/16/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.985	0.25	5	0	99.7	80-120	0			
Barium	5.061	0.25	5	0	101	80-120	0			
Cadmium	4.609	0.50	5	0	92.2	80-120	0			
Chromium	5.189	0.25	5	0	104	80-120	0			
Copper	5.157	0.50	5	0	103	80-120	0			
Lead	4.962	0.25	5	0	99.2	80-120	0			
Nickel	5.245	0.25	5	0	105	80-120	0			
Selenium	5.116	0.50	5	0	102	80-120	0			
Silver	4.852	0.25	5	0	97	80-120	0			
Zinc	4.823	0.50	5	0	96.5	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1507786
Project: Caerus Mesa 23 PBV Removal

QC BATCH REPORT

Batch ID: **73613** Instrument ID **ICP2** Method: **SW846 6010C**

MS Sample ID: **1507708-02AMS** Units: **mg/Kg** Analysis Date: **7/17/2015 11:02 AM**
Client ID: Run ID: **ICP2_150717A** SeqNo: **3377045** Prep Date: **7/16/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	167.9	0.33	6.684	159	134	75-125	0			SO
Cadmium	18.21	0.67	6.684	10.9	109	75-125	0			
Chromium	44.83	0.33	6.684	39.04	86.7	75-125	0			O
Copper	124.3	0.67	6.684	116.7	113	75-125	0			O
Nickel	43.98	0.33	6.684	38.28	85.2	75-125	0			O
Silver	14.71	0.33	6.684	6.754	119	75-125	0			E

MS Sample ID: **1507708-02AMS** Units: **mg/Kg** Analysis Date: **7/20/2015 05:38 PM**
Client ID: Run ID: **ICP2_150720A** SeqNo: **3378056** Prep Date: **7/16/2015** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	79.44	3.3	6.684	78.45	14.8	75-125	0			SO
Lead	205.2	3.3	6.684	211	-85.7	75-125	0			SO
Selenium	8.066	6.7	6.684	1.12	104	75-125	0			
Zinc	1276	6.7	6.684	1348	-1080	75-125	0			SO

MSD Sample ID: **1507708-02AMSD** Units: **mg/Kg** Analysis Date: **7/17/2015 11:08 AM**
Client ID: Run ID: **ICP2_150717A** SeqNo: **3377046** Prep Date: **7/16/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	171.7	0.33	6.684	159	190	75-125	167.9	2.22	20	SO
Cadmium	18.79	0.67	6.684	10.9	118	75-125	18.21	3.16	20	
Chromium	45.76	0.33	6.684	39.04	101	75-125	44.83	2.03	20	O
Copper	127.3	0.67	6.684	116.7	158	75-125	124.3	2.36	20	SO
Nickel	44.9	0.33	6.684	38.28	99.1	75-125	43.98	2.09	20	O
Silver	15.23	0.33	6.684	6.754	127	75-125	14.71	3.53	20	SE

MSD Sample ID: **1507708-02AMSD** Units: **mg/Kg** Analysis Date: **7/20/2015 05:44 PM**
Client ID: Run ID: **ICP2_150720A** SeqNo: **3378057** Prep Date: **7/16/2015** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	83.91	3.3	6.684	78.45	81.6	75-125	79.44	5.47	20	O
Lead	213.1	3.3	6.684	211	31.4	75-125	205.2	3.74	20	SO
Selenium	8.087	6.7	6.684	1.12	104	75-125	8.066	0.257	20	
Zinc	1344	6.7	6.684	1348	-53.4	75-125	1276	5.23	20	SO

The following samples were analyzed in this batch:

1507786-01B	1507786-02B	1507786-03B
1507786-04B	1507786-05B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1507786
Project: Caerus Mesa 23 PBV Removal

QC BATCH REPORT

Batch ID: **73586** Instrument ID **SVMS8** Method: **SW846 8270D**

MBLK Sample ID: **SBLKS1-73586-73586** Units: **µg/Kg** Analysis Date: **7/16/2015 05:00 PM**
Client ID: Run ID: **SVMS8_150716A** SeqNo: **3374794** Prep Date: **7/16/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	ND	6.7								
Acenaphthylene	ND	6.7								
Anthracene	ND	6.7								
Benzo(a)anthracene	ND	6.7								
Benzo(a)pyrene	ND	6.7								
Benzo(b)fluoranthene	ND	6.7								
Benzo(g,h,i)perylene	ND	6.7								
Benzo(k)fluoranthene	ND	6.7								
Chrysene	ND	6.7								
Dibenzo(a,h)anthracene	ND	6.7								
Fluoranthene	ND	6.7								
Fluorene	ND	6.7								
Indeno(1,2,3-cd)pyrene	ND	6.7								
Naphthalene	ND	6.7								
Pyrene	ND	6.7								
Surr: 2-Fluorobiphenyl	*1094*	0	*1667*	0	*65.6*	*12-100*	0			
Surr: 4-Terphenyl-d14	*1212*	0	*1667*	0	*72.7*	*25-137*	0			
Surr: Nitrobenzene-d5	*1012*	0	*1667*	0	*60.7*	*37-107*	0			

LCS Sample ID: **SLCSS1-73586-73586** Units: **µg/Kg** Analysis Date: **7/16/2015 05:20 PM**
Client ID: Run ID: **SVMS8_150716A** SeqNo: **3374795** Prep Date: **7/16/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	527.3	6.7	666.7	0	79.1	45-110	0			
Acenaphthylene	530.3	6.7	666.7	0	79.5	45-105	0			
Anthracene	586.7	6.7	666.7	0	88	55-105	0			
Benzo(a)anthracene	576	6.7	666.7	0	86.4	50-110	0			
Benzo(a)pyrene	576	6.7	666.7	0	86.4	50-110	0			
Benzo(b)fluoranthene	547.7	6.7	666.7	0	82.1	45-115	0			
Benzo(g,h,i)perylene	636	6.7	666.7	0	95.4	40-125	0			
Benzo(k)fluoranthene	551.7	6.7	666.7	0	82.7	45-115	0			
Chrysene	547.7	6.7	666.7	0	82.1	55-110	0			
Dibenzo(a,h)anthracene	619.3	6.7	666.7	0	92.9	40-125	0			
Fluoranthene	632	6.7	666.7	0	94.8	55-115	0			
Fluorene	547.3	6.7	666.7	0	82.1	50-110	0			
Indeno(1,2,3-cd)pyrene	644	6.7	666.7	0	96.6	40-120	0			
Naphthalene	374.3	6.7	666.7	0	56.1	40-105	0			
Pyrene	563	6.7	666.7	0	84.4	45-125	0			
Surr: 2-Fluorobiphenyl	*1185*	0	*1667*	0	*71.1*	*12-100*	0			
Surr: 4-Terphenyl-d14	*1247*	0	*1667*	0	*74.8*	*25-137*	0			
Surr: Nitrobenzene-d5	*1104*	0	*1667*	0	*66.3*	*37-107*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1507786
Project: Caerus Mesa 23 PBV Removal

QC BATCH REPORT

Batch ID: **73586** Instrument ID **SVMS8** Method: **SW846 8270D**

MS Sample ID: **1507829-02B MS** Units: **µg/Kg** Analysis Date: **7/16/2015 06:40 PM**
Client ID: Run ID: **SVMS8_150716A** SeqNo: **3374796** Prep Date: **7/16/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1040	13	1277	0	81.4	45-110	0			
Acenaphthylene	1050	13	1277	0	82.2	45-105	0			
Anthracene	1160	13	1277	0	90.8	55-105	0			
Benzo(a)anthracene	1128	13	1277	6.135	87.8	50-110	0			
Benzo(a)pyrene	1125	13	1277	7.104	87.5	50-110	0			
Benzo(b)fluoranthene	1100	13	1277	4.844	85.7	45-115	0			
Benzo(g,h,i)perylene	1271	13	1277	6.135	99	40-125	0			
Benzo(k)fluoranthene	1057	13	1277	3.552	82.5	45-115	0			
Chrysene	1070	13	1277	3.552	83.5	55-110	0			
Dibenzo(a,h)anthracene	1166	13	1277	0	91.3	40-125	0			
Fluoranthene	1167	13	1277	5.167	91	55-115	0			
Fluorene	1054	13	1277	4.844	82.1	50-110	0			
Indeno(1,2,3-cd)pyrene	1271	13	1277	6.135	99	40-120	0			
Naphthalene	715.2	13	1277	10.98	55.1	40-105	0			
Pyrene	1189	13	1277	7.75	92.5	45-125	0			
Surr: 2-Fluorobiphenyl	*2247*	0	*3193*	0	*70.4*	*12-100*	0			
Surr: 4-Terphenyl-d14	*2556*	0	*3193*	0	*80.1*	*25-137*	0			
Surr: Nitrobenzene-d5	*2110*	0	*3193*	0	*66.1*	*37-107*	0			

MSD Sample ID: **1507829-02B MSD** Units: **µg/Kg** Analysis Date: **7/16/2015 07:00 PM**
Client ID: Run ID: **SVMS8_150716A** SeqNo: **3374797** Prep Date: **7/16/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1031	13	1277	0	80.7	45-110	1040	0.789	30	
Acenaphthylene	1026	13	1277	0	80.3	45-105	1050	2.33	30	
Anthracene	1163	13	1277	0	91	55-105	1160	0.288	30	
Benzo(a)anthracene	1119	13	1277	6.135	87.1	50-110	1128	0.783	30	
Benzo(a)pyrene	1117	13	1277	7.104	86.9	50-110	1125	0.728	30	
Benzo(b)fluoranthene	1040	13	1277	4.844	81.1	45-115	1100	5.54	30	
Benzo(g,h,i)perylene	1280	13	1277	6.135	99.8	40-125	1271	0.764	30	
Benzo(k)fluoranthene	1033	13	1277	3.552	80.6	45-115	1057	2.25	30	
Chrysene	1047	13	1277	3.552	81.7	55-110	1070	2.1	30	
Dibenzo(a,h)anthracene	1206	13	1277	0	94.4	40-125	1166	3.4	30	
Fluoranthene	1174	13	1277	5.167	91.5	55-115	1167	0.613	30	
Fluorene	1039	13	1277	4.844	81	50-110	1054	1.39	30	
Indeno(1,2,3-cd)pyrene	1297	13	1277	6.135	101	40-120	1271	2.05	30	
Naphthalene	705	13	1277	10.98	54.3	40-105	715.2	1.43	30	
Pyrene	1161	13	1277	7.75	90.3	45-125	1189	2.38	30	
Surr: 2-Fluorobiphenyl	*2170*	0	*3193*	0	*68*	*12-100*	2247	*3.49*	*40*	
Surr: 4-Terphenyl-d14	*2527*	0	*3193*	0	*79.1*	*25-137*	2556	*1.14*	*40*	
Surr: Nitrobenzene-d5	*2037*	0	*3193*	0	*63.8*	*37-107*	2110	*3.53*	*40*	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1507786
Project: Caerus Mesa 23 PBV Removal

QC BATCH REPORT

Batch ID: **73586** Instrument ID **SVMS8** Method: **SW846 8270D**

The following samples were analyzed in this batch:

1507786-01B	1507786-02B	1507786-03B
1507786-04B	1507786-05B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1507786
Project: Caerus Mesa 23 PBV Removal

QC BATCH REPORT

Batch ID: **73573** Instrument ID **VMS9** Method: **SW8260B**

MBLK Sample ID: **MBLK-73573-73573** Units: **µg/Kg** Analysis Date: **7/16/2015 09:34 PM**
Client ID: Run ID: **VMS9_150716B** SeqNo: **3374515** Prep Date: **7/15/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30								
Ethylbenzene	ND	30								
m,p-Xylene	ND	60								
o-Xylene	ND	30								
Toluene	ND	30								
Xylenes, Total	ND	90								
Surr: 1,2-Dichloroethane-d4	*1056*	0	*1000*	0	*106*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*946.5*	0	*1000*	0	*94.6*	*70-130*	0			
Surr: Dibromofluoromethane	*1022*	0	*1000*	0	*102*	*70-130*	0			
Surr: Toluene-d8	*966.5*	0	*1000*	0	*96.6*	*70-130*	0			

LCS Sample ID: **LCS-73573-73573** Units: **µg/Kg** Analysis Date: **7/16/2015 07:52 PM**
Client ID: Run ID: **VMS9_150716B** SeqNo: **3374514** Prep Date: **7/15/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	851	30	1000	0	85.1	75-125	0			
Ethylbenzene	846	30	1000	0	84.6	75-125	0			
m,p-Xylene	1715	60	2000	0	85.8	80-125	0			
o-Xylene	843	30	1000	0	84.3	75-125	0			
Toluene	816	30	1000	0	81.6	70-125	0			
Xylenes, Total	2558	90	3000	0	85.3	75-125	0			
Surr: 1,2-Dichloroethane-d4	*980.5*	0	*1000*	0	*98*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1003*	0	*1000*	0	*100*	*70-130*	0			
Surr: Dibromofluoromethane	*996.5*	0	*1000*	0	*99.6*	*70-130*	0			
Surr: Toluene-d8	*1004*	0	*1000*	0	*100*	*70-130*	0			

MS Sample ID: **1507829-03A MS** Units: **µg/Kg** Analysis Date: **7/20/2015 03:19 AM**
Client ID: Run ID: **VMS6_150718B** SeqNo: **3377249** Prep Date: **7/15/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1182	30	1000	0	118	75-125	0			
Ethylbenzene	1100	30	1000	0	110	75-125	0			
m,p-Xylene	2210	60	2000	0	110	80-125	0			
o-Xylene	1094	30	1000	0	109	75-125	0			
Toluene	1136	30	1000	0	114	70-125	0			
Xylenes, Total	3304	90	3000	0	110	75-125	0			
Surr: 1,2-Dichloroethane-d4	*1044*	0	*1000*	0	*104*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1011*	0	*1000*	0	*101*	*70-130*	0			
Surr: Dibromofluoromethane	*987.5*	0	*1000*	0	*98.8*	*70-130*	0			
Surr: Toluene-d8	*1002*	0	*1000*	0	*100*	*70-130*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1507786
Project: Caerus Mesa 23 PBV Removal

QC BATCH REPORT

Batch ID: **73573** Instrument ID **VMS9** Method: **SW8260B**

MSD Sample ID: **1507829-03A MSD** Units: **µg/Kg** Analysis Date: **7/20/2015 03:44 AM**
Client ID: Run ID: **VMS6_150718B** SeqNo: **3377250** Prep Date: **7/15/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1125	30	1000	0	112	75-125	1182	4.9	30	
Ethylbenzene	1086	30	1000	0	109	75-125	1100	1.28	30	
m,p-Xylene	2210	60	2000	0	110	80-125	2210	0.0226	30	
o-Xylene	1088	30	1000	0	109	75-125	1094	0.458	30	
Toluene	1120	30	1000	0	112	70-125	1136	1.42	30	
Xylenes, Total	3298	90	3000	0	110	75-125	3304	0.167	30	
Surr: 1,2-Dichloroethane-d4	*1025*	0	*1000*	0	*102*	*70-130*	1044	*1.79*	*30*	
Surr: 4-Bromofluorobenzene	*1022*	0	*1000*	0	*102*	*70-130*	1011	*1.03*	*30*	
Surr: Dibromofluoromethane	*974*	0	*1000*	0	*97.4*	*70-130*	987.5	*1.38*	*30*	
Surr: Toluene-d8	*1028*	0	*1000*	0	*103*	*70-130*	1002	*2.46*	*30*	

The following samples were analyzed in this batch: 1507786-01A 1507786-02A 1507786-03A 1507786-04A 1507786-05A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1507786
Project: Caerus Mesa 23 PBV Removal

QC BATCH REPORT

Batch ID: **73603** Instrument ID **WETCHEM** Method: **USDA H60 Method**

DUP Sample ID: **1507789-03B DUP** Units: **mmhos/cm @25°C** Analysis Date: **7/20/2015 10:45 AM**

Client ID: Run ID: **WETCHEM_150720B** SeqNo: **3376305** Prep Date: **7/17/2015** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	0.473	0.050	0	0	0		0.553	15.6	50	

The following samples were analyzed in this batch:

1507786-01C 1507786-02C 1507786-03C
1507786-04C 1507786-05C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1507786
Project: Caerus Mesa 23 PBV Removal

QC BATCH REPORT

Batch ID: **73614** Instrument ID **WETCHEM** Method: **SW9045D**

LCS Sample ID: **LCS-73614-73614** Units: **s.u.** Analysis Date: **7/16/2015 01:00 PM**
Client ID: Run ID: **WETCHEM_150716F** SeqNo: **3373262** Prep Date: **7/16/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	3.89	0	4	0	97.2	90-110	0			

DUP Sample ID: **1507786-05B DUP** Units: **s.u.** Analysis Date: **7/16/2015 01:00 PM**
Client ID: **Bottom, 6'** Run ID: **WETCHEM_150716F** SeqNo: **3373272** Prep Date: **7/16/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.66	0	0	0	0	0-0	8.68	0.231	20	

DUP Sample ID: **1507829-01B DUP** Units: **s.u.** Analysis Date: **7/16/2015 01:00 PM**
Client ID: Run ID: **WETCHEM_150716F** SeqNo: **3373275** Prep Date: **7/16/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.24	0	0	0	0	0-0	8.17	0.853	20	

The following samples were analyzed in this batch:

1507786-01B	1507786-02B	1507786-03B
1507786-04B	1507786-05B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1507786
Project: Caerus Mesa 23 PBV Removal

QC BATCH REPORT

Batch ID: **73631** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK Sample ID: **MBLK-73631-73631** Units: **mg/Kg** Analysis Date: **7/16/2015 02:00 PM**
Client ID: Run ID: **WETCHEM_150716I** SeqNo: **3373623** Prep Date: **7/15/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.46	1.0								J

LCS Sample ID: **LCS-73631-73631** Units: **mg/Kg** Analysis Date: **7/16/2015 02:00 PM**
Client ID: Run ID: **WETCHEM_150716I** SeqNo: **3373624** Prep Date: **7/15/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	4.82	1.0	5	0	96.4	80-120	0			

MS Sample ID: **1507749-05A MSI** Units: **mg/Kg** Analysis Date: **7/16/2015 02:00 PM**
Client ID: Run ID: **WETCHEM_150716I** SeqNo: **3373629** Prep Date: **7/15/2015** DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	2438	95	2375	2.485	103	75-125	0			

MS Sample ID: **1507749-05AMS** Units: **mg/Kg** Analysis Date: **7/16/2015 02:00 PM**
Client ID: Run ID: **WETCHEM_150716I** SeqNo: **3373631** Prep Date: **7/15/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	4.51	0.96	4.808	2.485	42.1	75-125	0			S

MSD Sample ID: **1507749-05AMSD** Units: **mg/Kg** Analysis Date: **7/16/2015 02:00 PM**
Client ID: Run ID: **WETCHEM_150716I** SeqNo: **3373632** Prep Date: **7/15/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	5.324	0.95	4.762	2.485	59.6	75-125	4.51	16.6	20	S

The following samples were analyzed in this batch:

1507786-01B	1507786-02B	1507786-03B
1507786-04B	1507786-05B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1507786
Project: Caerus Mesa 23 PBV Removal

QC BATCH REPORT

Batch ID: **R167810** Instrument ID **MOIST** Method: **E160.3M**

MBLK Sample ID: **WBLKS-R167810** Units: **% of sample** Analysis Date: **7/16/2015 03:25 PM**
Client ID: Run ID: **MOIST_150716C** SeqNo: **3374683** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R167810** Units: **% of sample** Analysis Date: **7/16/2015 03:25 PM**
Client ID: Run ID: **MOIST_150716C** SeqNo: **3374682** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **1507682-01B DUP** Units: **% of sample** Analysis Date: **7/16/2015 03:25 PM**
Client ID: Run ID: **MOIST_150716C** SeqNo: **3374657** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	20.46	0.050	0	0	0		21.63	5.56	20	

DUP Sample ID: **1507869-01A DUP** Units: **% of sample** Analysis Date: **7/16/2015 03:25 PM**
Client ID: Run ID: **MOIST_150716C** SeqNo: **3374680** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	7.57	0.050	0	0	0		7.82	3.25	20	

The following samples were analyzed in this batch:

1507786-01B	1507786-02B	1507786-03B
1507786-04B	1507786-05B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Laboratory Group

3352 128th Ave. Holland, MI 49424
TF: (800) 443-1511 PH: (616) 399-6070 FX: (616) 399-6185

Chain-of-Custody

Form 202r8

WORKORDER # 1507796

PAGE 1 of 1

DISPOSAL: (By Lab) or Return to Client

PROJECT NAME	Caerus Mesa 23 PBV Removal	SAMPLER	Casey Richardson
PROJECT No.		SITE ID	~~CONFIRM~~ CONFIRMATION SAMPLES
		EDD FORMAT	
		PURCHASE ORDER	
COMPANY NAME	HRL Compliance Solutions, Inc.	BILL TO COMPANY	Caerus Piceance LLC
SEND REPORT TO	Casey Richardson	INVOICE ATTN TO	Jake Janicek
ADDRESS	2385 F 1/2 Road	ADDRESS	120 Railroad Ave. Suite D
CITY / STATE / ZIP	Grand Junction, CO. 81505	CITY / STATE / ZIP	Parachute, CO 81635
PHONE	970-243-3271	PHONE	970-285-9606
FAX	970-243-3280	FAX	
E-MAIL	crichardson@hrlcomp.com	E-MAIL	jjanicek@caerusoilandgas.com

DATE: 7-14-15

TURNAROUND: STANDARD

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	DRO	GRO	Total Metals (Table 910-1)	Semi Vols - PAH	BTEX	BAR	EC	pH
1	NORTH WALL, 3'	SOIL	7-14-15	1134	3	8		X	X	X	X	X	X	X	X
2	SOUTH WALL, 3.5'			1132				X	X	X	X	X	X	X	X
3	EAST WALL, 3'			1136				X	X	X	X	X	X	X	X
4	WEST WALL, 3.5'			1128				X	X	X	X	X	X	X	X
5	~~TEST~~ BOTTOM, 6'			1125				X	X	X	X	X	X	X	X

*Time Zone (Circle): EST CST (MST) PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments: 3.0' ↓

COGCC Table 910-1 Analytical Suite

QC PACKAGE (check below)	
x	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		CASEY RICHARDSON	7-14-15	1410
RECEIVED BY		WILLIAM.	7-14-15	14 40
RELINQUISHED BY		M	7-14-15	1520
RECEIVED BY		Kevin Weeks	7/15/15	0930
RELINQUISHED BY				
RECEIVED BY				

ORIGIN ID:RILA (616) 298-1033
NICK MARTINEZ
ALS ENVIRONMENTAL PARACHUTE
PARACHUTE SERVICE CENTER
127 EAST 1ST. ST
PARACHUTE, CO 81635
UNITED STATES US

SHIP DATE: 14JUL15
ACTWGT: 50.00 LB
CAD: 2284840/INET3670
DIMS: 26x16x16 IN

BILL SENDER

TO **SAMPLE RECEIVING**
ALS ENVIRONMENTAL HOLLAND LAB
3352 128TH AVE

HOLLAND MI 49424
(616) 399-6070 REF: 071415-1
INV:
PO: PARACHUTE DEPT:

539J3/1A15/31D0

FedEx. Express

E

REL#
3785346

WED - 15 JUL 10:30A
PRIORITY OVERNIGHT

2 of 4
MPS# 0263 **7740 5310 0247**
Mstr# 7740 5310 0453 0201

XX HLMA

49424
MI-US GRR

FedEx Ship Manager - Print Your Label(s)

7/14/2015

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income intere[illegible] of damage whether direct, incidental,consequential, or special is limited to th[illegible] e. Recovery cannot exceed actual documented loss.Maximum for items of extraordi[illegible] s, negotiable instruments and other items listed in our ServiceGuide. Written claims m[illegible] dEx Service Guide.

ALS Parachute Custody Seal
Name [handwritten initials]
Time 1730
Date 7-14

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **HRL** Date/Time Received: **15-Jul-15 09:30**

Work Order: **1507786** Received by: **KRW**

Checklist completed by Keith Wierenga (eSignature) 15-Jul-15 (Date) Reviewed by: Chad Whelan (eSignature) 15-Jul-15 (Date)

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.0 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	7/15/2015 11:00:55 AM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	_		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

22-Jul-2015

Casey Richardson
HRL Compliance Solutions, Inc
2385 F 1/2 Road
Grand Junction, CO 81505

Re: **Caerus Mesa 23 PBV Removal** Work Order: **1507789**

Dear Casey,

ALS Environmental received 3 samples on 15-Jul-2015 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 16.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Electronically approved by: Les Arnold

Les Arnold
Senior Project Manager

Certificate No: MN 532786

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 22-Jul-15

Client: HRL Compliance Solutions, Inc
Project: Caerus Mesa 23 PBV Removal
Work Order: **1507789**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1507789-01	BKGD 01	Soil		7/14/2015 09:02	7/15/2015 09:30	☐
1507789-02	BKGD 02	Soil		7/14/2015 09:05	7/15/2015 09:30	☐
1507789-03	BKGD 03	Soil		7/14/2015 09:09	7/15/2015 09:30	☐

Client: HRL Compliance Solutions, Inc
Project: Caerus Mesa 23 PBV Removal
WorkOrder: **1507789**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	
s.u.	Standard Units

ALS Group USA, Corp

Date: 22-Jul-15

Client: HRL Compliance Solutions, Inc
Project: Caerus Mesa 23 PBV Removal
Work Order: 1507789

Case Narrative

Samples for the above noted Work Order were received on 07/15/2015. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting.

With the following exceptions, all sample analyses achieved analytical criteria.

Sample Receiving:
No deviations or anomalies were noted.

Volatile Organics:
No deviations or anomalies were noted.

Extractable Organics:
No deviations or anomalies were noted.

Metals:
No deviations or anomalies were noted.

Wet Chemistry:
No deviations or anomalies were noted.

ALS Group USA, Corp

Date: *22-Jul-15*

Client: HRL Compliance Solutions, Inc
Project: Caerus Mesa 23 PBV Removal
Work Order: 1507789
Sample ID: BKGD 01
Lab ID: 1507789-01
Collection Date: 7/14/2015 09:02 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP			**SW846 6010C**		Prep: SW3050B / 7/16/15	Analyst: **JEC**
Arsenic	**8.7**		**0.92**	**mg/Kg-dry**	2	7/17/2015 12:55 PM
MOISTURE			**E160.3M**			Analyst: **PT**
Moisture	**20**		**0.050**	**% of sample**	1	7/16/2015 03:25 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *22-Jul-15*

Client: HRL Compliance Solutions, Inc
Project: Caerus Mesa 23 PBV Removal
Work Order: 1507789
Sample ID: BKGD 02
Lab ID: 1507789-02
Collection Date: 7/14/2015 09:05 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP			**SW846 6010C**		Prep: SW3050B / 7/16/15	Analyst: **JEC**
Arsenic	**8.4**		**0.93**	**mg/Kg-dry**	2	7/17/2015 01:01 PM
MOISTURE			**E160.3M**			Analyst: **PT**
Moisture	**21**		**0.050**	**% of sample**	1	7/16/2015 03:25 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *22-Jul-15*

Client: HRL Compliance Solutions, Inc
Project: Caerus Mesa 23 PBV Removal
Work Order: 1507789
Sample ID: BKGD 03
Lab ID: 1507789-03
Collection Date: 7/14/2015 09:09 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP			**SW846 6010C**		Prep: SW3050B / 7/16/15	Analyst: **JEC**
Arsenic	**7.1**		**0.96**	**mg/Kg-dry**	2	7/17/2015 01:06 PM
SOLUBLE CATIONS FOR SAR			**SW846 6010C**		Prep: USDA Method 20B / 7/17/15	Analyst: **JEC**
Calcium	**81**		**5.0**	**mg/L**	10	7/17/2015 03:20 PM
Magnesium	**17**		**2.0**	**mg/L**	10	7/17/2015 03:20 PM
Sodium	**6.9**		**2.0**	**mg/L**	10	7/17/2015 03:20 PM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep: USDA Method 20B / 7/17/15	Analyst: **RH**
Sodium Adsorption Ratio	**0.18**		**0.010**	**none**	1	7/17/2015
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**		Prep: USDA Method 20B / 7/17/15	Analyst: **JB**
Electrical Conductivity @ Saturation	**0.55**		**0.050**	**mmhos/cm @2**	10	7/20/2015 10:45 AM
MOISTURE			**E160.3M**			Analyst: **PT**
Moisture	**18**		**0.050**	**% of sample**	1	7/16/2015 03:25 PM
PH			**SW9045D**		Prep: EXTRACT / 7/16/15	Analyst: **STP**
pH	**6.6**			**s.u.**	1	7/16/2015 01:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 22-Jul-15

Client: HRL Compliance Solutions, Inc

Work Order: 1507789

Project: Caerus Mesa 23 PBV Removal

QC BATCH REPORT

Batch ID: **73603** Instrument ID **SAR** Method: **USDA H60 Metho**

DUP	Sample ID: **1507789-03BDUP**			Units: **none**		Analysis Date: **7/17/2015**			
Client ID: **BKGD 03**	Run ID: **SAR_150717A**			SeqNo: **3379441**		Prep Date: **7/17/2015**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	0.1449	0.010	0	0	0		0			

The following samples were analyzed in this batch: 1507789-03B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1507789
Project: Caerus Mesa 23 PBV Removal

QC BATCH REPORT

Batch ID: **73613** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK Sample ID: **MBLK-73613-73613** Units: **mg/Kg** Analysis Date: **7/17/2015 10:39 AM**
Client ID: Run ID: **ICP2_150717A** SeqNo: **3377041** Prep Date: **7/16/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								

LCS Sample ID: **LCS-73613-73613** Units: **mg/Kg** Analysis Date: **7/17/2015 10:45 AM**
Client ID: Run ID: **ICP2_150717A** SeqNo: **3377042** Prep Date: **7/16/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.985	0.25	5	0	99.7	80-120	0			

MS Sample ID: **1507708-02AMS** Units: **mg/Kg** Analysis Date: **7/20/2015 05:38 PM**
Client ID: Run ID: **ICP2_150720A** SeqNo: **3378056** Prep Date: **7/16/2015** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	79.44	3.3	6.684	78.45	14.8	75-125	0			SO

MSD Sample ID: **1507708-02AMSD** Units: **mg/Kg** Analysis Date: **7/20/2015 05:44 PM**
Client ID: Run ID: **ICP2_150720A** SeqNo: **3378057** Prep Date: **7/16/2015** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	83.91	3.3	6.684	78.45	81.6	75-125	79.44	5.47	20	O

The following samples were analyzed in this batch: 1507789-01A 1507789-02A 1507789-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1507789
Project: Caerus Mesa 23 PBV Removal

QC BATCH REPORT

Batch ID: **73603** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP Sample ID: **1507789-03B DUP** Units: **mmhos/cm @25°** Analysis Date: **7/20/2015 10:45 AM**
Client ID: **BKGD 03** Run ID: **WETCHEM_150720B** SeqNo: **3376305** Prep Date: **7/17/2015** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	0.473	0.050	0	0	0		0.553	15.6	50	

The following samples were analyzed in this batch: 1507789-03B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1507789
Project: Caerus Mesa 23 PBV Removal

QC BATCH REPORT

Batch ID: **73614** Instrument ID **WETCHEM** Method: **SW9045D**

LCS Sample ID: **LCS-73614-73614** Units: **s.u.** Analysis Date: **7/16/2015 01:00 PM**
Client ID: Run ID: **WETCHEM_150716F** SeqNo: **3373262** Prep Date: **7/16/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	3.89	0	4	0	97.2	90-110	0			

DUP Sample ID: **1507786-05B DUP** Units: **s.u.** Analysis Date: **7/16/2015 01:00 PM**
Client ID: Run ID: **WETCHEM_150716F** SeqNo: **3373272** Prep Date: **7/16/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.66	0	0	0	0	0-0	8.68	0.231	20	

DUP Sample ID: **1507829-01B DUP** Units: **s.u.** Analysis Date: **7/16/2015 01:00 PM**
Client ID: Run ID: **WETCHEM_150716F** SeqNo: **3373275** Prep Date: **7/16/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.24	0	0	0	0	0-0	8.17	0.853	20	

The following samples were analyzed in this batch: 1507789-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1507789
Project: Caerus Mesa 23 PBV Removal

QC BATCH REPORT

Batch ID: **R167810** Instrument ID **MOIST** Method: **E160.3M**

MBLK	Sample ID: **WBLKS-R167810**				Units: **% of sample**		Analysis Date: **7/16/2015 03:25 PM**			
Client ID:		Run ID: **MOIST_150716C**			SeqNo: **3374683**		Prep Date:		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS	Sample ID: **LCS-R167810**				Units: **% of sample**		Analysis Date: **7/16/2015 03:25 PM**			
Client ID:		Run ID: **MOIST_150716C**			SeqNo: **3374682**		Prep Date:		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP	Sample ID: **1507682-01B DUP**				Units: **% of sample**		Analysis Date: **7/16/2015 03:25 PM**			
Client ID:		Run ID: **MOIST_150716C**			SeqNo: **3374657**		Prep Date:		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	20.46	0.050	0	0	0		21.63	5.56	20	

DUP	Sample ID: **1507869-01A DUP**				Units: **% of sample**		Analysis Date: **7/16/2015 03:25 PM**			
Client ID:		Run ID: **MOIST_150716C**			SeqNo: **3374680**		Prep Date:		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	7.57	0.050	0	0	0		7.82	3.25	20	

The following samples were analyzed in this batch: 1507789-01A 1507789-02A 1507789-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Laboratory Group

3352 128th Ave. Holland, MI 49424
TF: (800) 443-1511 PH: (616) 399-6070 FX: (616) 399-6185

Chain-of-Custody

Form 202r8

WORKORDER # 1507789

PAGE 1 of 1

DISPOSAL By Lab or Return to Client

PROJECT NAME	Caerus Mesa 23 PBV Removal	SAMPLER	Casey Richardson
PROJECT No.		SITE ID	BACKGROUND
		EDD FORMAT	
		PURCHASE ORDER	
COMPANY NAME	HRL Compliance Solutions, Inc.	BILL TO COMPANY	Caerus Piceance LLC
END REPORT TO	Casey Richardson	INVOICE ATTN TO	Jake Janicek
ADDRESS	2385 F 1/2 Road	ADDRESS	120 Railroad Ave. Suite D
CITY / STATE / ZIP	Grand Junction, CO. 81505	CITY / STATE / ZIP	Parachute, CO 81635
PHONE	970-243-3271	PHONE	970-285-9606
FAX	970-243-3280	FAX	
E-MAIL	crichardson@hrlcomp.com	E-MAIL	jjanicek@caerusoilandgas.com

DATE 7-14-15

TURNAROUND STANDARD

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	DRO	GRO	Total Metals (Table 910-1)	Semi Vols - PAH	BTEX	SAR	EC	pH	ARSENIC
1	BKGD 01	SOIL	7-14-15	902	1	8										X
2	BKGD 02	"	"	905	1	"										X
3	BKGD 03	"	"	909	2	"							X	X	X	X

Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments: 3.0°C @

OGCG Table 910-1 Analytical Suite

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

QC PACKAGE (check below)	
x	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		CASEY RICHARDSON	7-14-15	1410
RECEIVED BY			7-14-15	1440
RELINQUISHED BY			7-14-15	1520
RECEIVED BY		KEITH WIERENGA	7/15/15	0930
RELINQUISHED BY				
RECEIVED BY				

ORIGIN ID:RILA (616) 298-1033
NICK MARTINEZ
ALS ENVIRONMENTAL PARACHUTE
PARACHUTE SERVICE CENTER
127 EAST 1ST ST
PARACHUTE, CO 81635
UNITED STATES US

SHIP DATE: 14JUL15
ACTWGT: 50.00 LB
CAD: 2264640/INET3870
DIMS: 26x16x16 IN

BILL SENDER

TO **SAMPLE RECEIVING**
ALS ENVIRONMENTAL HOLLAND LAB
3352 128TH AVE
HOLLAND MI 49424
(616) 399-6070
INV:
PO: PARACHUTE
REF: 071415-1
DEPT:

539J3/1A15/3100

FedEx Express

REL# 3785346

MPS# 0263 **7740 5310 0247**
Mstr# **7740 5310 0453** 0201

2 of 4

WED - 15 JUL 10:30A
PRIORITY OVERNIGHT

XX HLMA

49424
MI-US **GRR**

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income intere[illegible] of damage whether direct, incidental, consequential, or special is limited to th[illegible]e. Recovery cannot exceed actual documented loss. Maximum for items of extraordi[illegible]s, negotiable instruments and other items listed in our ServiceGuide. Written claims m[illegible]dEx Service Guide.

Name
Time 1200 Date 7/14/15
ALS Parachute Custody Seal

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **HRL** Date/Time Received: **15-Jul-15 09:30**

Work Order: **1507789** Received by: **KRW**

Checklist completed by Keith Wierenga (eSignature) 15-Jul-15 (Date) Reviewed by: Chad Whelton (eSignature) 15-Jul-15 (Date)

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.0 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	7/15/2015 11:03:58 AM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

ALS Environmental

01-Feb-2012

Herman Lucero
HRL Compliance Solutions
744 Horizon Ct. Suite 140
Grand Junction, CO 81506

Re: **PDC Mesa 16 Background 5/4/11** Work Order: **1105150**

Dear Herman,

ALS Environmental received 5 samples on 06-May-2011 10:00 AM for the analyses presented in the following report.

This is a REVISED REPORT. The Case Narrative provides information discussing the reason for issuing a revised report. The total number of pages in this revision is 34.

If you have any questions regarding these test results, please feel free to contact me.

Sincerely,

Ann Preston

Electronically approved by: Alex Csaszar

Ann Preston
Project Manager

ACCREDITED IN ACCORDANCE WITH nelac
Certificate No: MN331938

ALS Group USA, Corp

Date: 01-Feb-12

Client: HRL Compliance Solutions
Project: PDC Mesa 16 Background 5/4/11
Work Order: 1105150

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1105150-01	Drill Cuttings	Soil		5/4/2011 10:30	5/6/2011 10:00	☑
1105150-02	AS 1	Soil		5/4/2011 10:45	5/6/2011 10:00	☐
1105150-03	AS 2	Soil		5/4/2011 10:50	5/6/2011 10:00	☐
1105150-04	AS 3	Soil		5/6/2011 11:00	5/6/2011 10:00	☐
1105150-05	Background	Soil		5/4/2011 11:05	5/6/2011 10:00	☐

Client: HRL Compliance Solutions
Project: PDC Mesa 16 Background 5/4/11
Work Order: 1105150

Case Narrative

The Drill Cuttings data are not included in this revised report, per the client's request 1/11/12.

Batch 33205, Diesel Range Organics by GC-FID, Sample 1105150-01A:Surrogate recovery was above control limits due to matrix interference.

Batch 33203 MS/MSD data for Metals is not related to this project's samples.

Batch 33204 LCS/LCSD recoveries for a few Semi-volatile compounds were above control limits. All samples in this quality control batch were ND for these compounds. The MS/MSD data for Semi-Volatiles is not related to this project's samples.

Batch 33240 MS/MSD data for Hexavalent Chromium is not related to this project's samples.

A revised report was issued per client request to remove Drill Cuttings data.

ALS Group USA, Corp

Date: 01-Feb-12

Client: HRL Compliance Solutions
Project: PDC Mesa 16 Background 5/4/11
WorkOrder: 1105150

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
SD	Serial Dilution
TDL	Target Detection Limit

Units Reported	Description
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight
s.u.	Standard Units

ALS Group USA, Corp

Date: *01-Feb-12*

Client: HRL Compliance Solutions
Project: PDC Mesa 16 Background 5/4/11
Work Order: 1105150
Sample ID: AS 1
Lab ID: 1105150-02
Collection Date: 5/4/2011 10:45 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **5/7/2011**	Analyst: **CES**
Arsenic	**23**		**0.94**	**mg/Kg-dry**	2	5/10/2011 06:40 AM
MOISTURE			**A2540 G**			Analyst: **JJG**
Moisture	**26**		**0.050**	**% of sample**	1	5/6/2011 12:01 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *01-Feb-12*

Client: HRL Compliance Solutions
Project: PDC Mesa 16 Background 5/4/11
Work Order: 1105150
Sample ID: AS 2
Lab ID: 1105150-03
Collection Date: 5/4/2011 10:50 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **5/7/2011**	Analyst: **CES**
Arsenic	**28**		**1.1**	**mg/Kg-dry**	2	5/10/2011 06:46 AM
MOISTURE			**A2540 G**			Analyst: **JJG**
Moisture	**29**		**0.050**	**% of sample**	1	5/6/2011 12:01 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *01-Feb-12*

Client: HRL Compliance Solutions
Project: PDC Mesa 16 Background 5/4/11 **Work Order:** 1105150
Sample ID: AS 3 **Lab ID:** 1105150-04
Collection Date: 5/6/2011 11:00 AM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **5/7/2011**	Analyst: **CES**
Arsenic	**44**		**1.0**	**mg/Kg-dry**	2	5/10/2011 06:52 AM
MOISTURE			**A2540 G**			Analyst: **JJG**
Moisture	**25**		**0.050**	**% of sample**	1	5/6/2011 12:01 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *01-Feb-12*

Client: HRL Compliance Solutions
Project: PDC Mesa 16 Background 5/4/11
Work Order: 1105150
Sample ID: Background
Lab ID: 1105150-05
Collection Date: 5/4/2011 11:05 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SUBCONTRACTED ANALYSES			SUBCONTRACT			Analyst: **A&LGL**
Subcontracted Analyses	Rcvd 5/11/11			attached	1	5/11/2011
MOISTURE			A2540 G			Analyst: **JJG**
Moisture	26		0.050	% of sample	1	5/6/2011 12:01 PM
PH			SW9045D			Analyst: **JJG**
pH	7.44			s.u.	1	5/6/2011 11:00 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Report Number: F11129-0258
Acount Number: 91000

A & L GREAT LAKES LABORATORIES, INC.

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QUALITY ANALYSES FOR INFORMED DECISIONS

REPORT PRINTED 2/1/2012

TO: ALS LABORATORY GROUP
3352 128TH AVE
HOLLAND, MI 49424-9263

RE: 1105150

DATE RECEIVED: 05/09/2011
DATE REPORTED: 02/01/2012
PAGE: 1
P.O. NUMBER: 20-122010075

ATTN: ANN PRESTON

REPORT OF ANALYSIS

LAB NO.	SAMPLE ID	ANALYSIS	RESULT	UNIT	METHOD
30107	05B	Sat'd Paste Extraction with DIW	1		USDA Handbook 60
		Conductivity (ECe)	0.21	mmho/cm	USDA Handbook 60
		Calcium (Sat'd Paste)	23	ppm	USDA Handbook 60
		Magnesium (Sat'd Paste)	8	ppm	USDA Handbook 60
		Sodium (Sat'd Paste)	16	ppm	USDA Handbook 60
		Sodium Adsorption Ratio (SAR)	0.7	-	USDA Handbook 60

SOILMISC

ALS Group USA, Corp

Date: 01-Feb-12

Client: HRL Compliance Solutions

Work Order: 1105150

Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **33205** Instrument ID **GC8** Method: **SW8015M**

MBLK Sample ID: **DBLKS1-33205-33205** Units: **mg/Kg** Analysis Date: **5/10/2011 09:15 PM**

Client ID: Run ID: **GC8_110510A** SeqNo: **1623019** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	4.2								
Surr: 4-Terphenyl-d14	*1.602*	0	*1.667*	0	*96.1*	*39-115*	0			

LCS Sample ID: **DLCSS1-33205-33205** Units: **mg/Kg** Analysis Date: **5/10/2011 07:37 PM**

Client ID: Run ID: **GC8_110510A** SeqNo: **1623016** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	180.9	5.0	200	0	90.4	60-130	0			
Surr: 4-Terphenyl-d14	*1.756*	0	*2*	0	*87.8*	*39-115*	0			

LCSD Sample ID: **DLCSDS1-33205-33205** Units: **mg/Kg** Analysis Date: **5/10/2011 08:02 PM**

Client ID: Run ID: **GC8_110510A** SeqNo: **1623047** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
RO (C10-C28)	175.7	5.0	200	0	87.8	60-130	180.9	2.92	30	
Surr: 4-Terphenyl-d14	*1.672*	0	*2*	0	*83.6*	*39-115*	1.756	*4.85*	*30*	

MS Sample ID: **1105174-04A MS** Units: **mg/Kg** Analysis Date: **5/10/2011 03:57 PM**

Client ID: Run ID: **GC8_110510A** SeqNo: **1623008** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	299.6	8.2	328	8.159	88.9	60-130	0			
Surr: 4-Terphenyl-d14	*2.175*	0	*3.28*	0	*66.3*	*39-115*	0			

MSD Sample ID: **1105174-04A MSD** Units: **mg/Kg** Analysis Date: **5/10/2011 04:21 PM**

Client ID: Run ID: **GC8_110510A** SeqNo: **1623039** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	313.1	7.9	317.1	8.159	96.1	60-130	299.6	4.39	30	
Surr: 4-Terphenyl-d14	*1.937*	0	*3.171*	0	*61.1*	*39-115*	2.175	*11.6*	*30*	

The following samples were analyzed in this batch: 1105150-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **R89951** Instrument ID **GC9** Method: **SW8015**

MBLK Sample ID: **MBLK-R89951-R89951** Units: **µg/L** Analysis Date: **5/10/2011 12:38 PM**
Client ID: Run ID: **GC9_110510B** SeqNo: **1622997** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	200								
Surr: Toluene-d8	*94.8*	0	*100*	0	*94.8*	*70-130*	0			

LCS Sample ID: **LCS-R89951-R89951** Units: **µg/L** Analysis Date: **5/10/2011 11:15 AM**
Client ID: Run ID: **GC9_110510B** SeqNo: **1622995** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	27010	200	25000	0	108	70-130	0			
Surr: Toluene-d8	*104.5*	0	*100*	0	*105*	*70-130*	0			

LCSD Sample ID: **LCSD-R89951-R89951** Units: **µg/L** Analysis Date: **5/10/2011 11:41 AM**
Client ID: Run ID: **GC9_110510B** SeqNo: **1622996** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	28380	200	25000	0	114	70-130	27010	4.93	30	
Surr: Toluene-d8	*103.7*	0	*100*	0	*104*	*70-130*	104.5	*0.816*	*30*	

MS Sample ID: **1105136-03A MS** Units: **µg/Kg** Analysis Date: **5/10/2011 09:44 PM**
Client ID: Run ID: **GC9_110510B** SeqNo: **1622987** Prep Date: DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	2573000	5,000	2500000	0	103	70-130	0			
Surr: Toluene-d8	*9665*	0	*10000*	0	*96.6*	*50-150*	0			

MS Sample ID: **1105174-04B MS** Units: **µg/Kg** Analysis Date: **5/10/2011 10:10 PM**
Client ID: Run ID: **GC9_110510B** SeqNo: **1622988** Prep Date: DF: **118**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	2956000	5,900	2950000	0	100	70-130	0			
Surr: Toluene-d8	*11290*	0	*11800*	0	*95.7*	*50-150*	0			

MSD Sample ID: **1105136-03A MSD** Units: **µg/Kg** Analysis Date: **5/10/2011 10:36 PM**
Client ID: Run ID: **GC9_110510B** SeqNo: **1622989** Prep Date: DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	2406000	5,000	2500000	0	96.3	70-130	2573000	6.68	30	
Surr: Toluene-d8	*9269*	0	*10000*	0	*92.7*	*50-150*	9665	*4.18*	*30*	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **R89951** Instrument ID **GC9** Method: **SW8015**

MSD Sample ID: **1105174-04B MSD** Units: **µg/Kg** Analysis Date: **5/10/2011 11:01 PM**
Client ID: Run ID: **GC9_110510B** SeqNo: **1622990** Prep Date: DF: **118**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	2744000	5,900	2950000	0	93	70-130	2956000	7.46	30	
Surr: Toluene-d8	*11240*	0	*11800*	0	*95.2*	*50-150*	11290	*0.45*	*30*	

The following samples were analyzed in this batch: 1105150-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **33259** Instrument ID **HG1** Method: **SW7471**

MBLK Sample ID: **MBLK-33259-33259** Units: **mg/Kg** Analysis Date: **5/12/2011 12:36 PM**
Client ID: Run ID: **HG1_110512A** SeqNo: **1623668** Prep Date: **5/12/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.020								

LCS Sample ID: **LCS-33259-33259** Units: **mg/Kg** Analysis Date: **5/12/2011 12:38 PM**
Client ID: Run ID: **HG1_110512A** SeqNo: **1623669** Prep Date: **5/12/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1652	0.020	0.1665	0	99.2	80-120	0			

LCSD Sample ID: **LCSD-33259-33259** Units: **mg/Kg** Analysis Date: **5/12/2011 12:40 PM**
Client ID: Run ID: **HG1_110512A** SeqNo: **1623670** Prep Date: **5/12/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1705	0.020	0.1665	0	102	80-120	0.1652	3.13	20	

MS Sample ID: **1105208-03BMS** Units: **mg/Kg** Analysis Date: **5/12/2011 01:14 PM**
Client ID: Run ID: **HG1_110512A** SeqNo: **1623685** Prep Date: **5/12/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1671	0.018	0.1516	0.006278	106	75-125	0			

MSD Sample ID: **1105208-03BMSD** Units: **mg/Kg** Analysis Date: **5/12/2011 01:16 PM**
Client ID: Run ID: **HG1_110512A** SeqNo: **1623686** Prep Date: **5/12/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1695	0.019	0.1611	0.006278	101	75-125	0.1671	1.41	35	

The following samples were analyzed in this batch: 1105150-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **33203** Instrument ID **ICPMS1** Method: **SW6020A**

MBLK Sample ID: **MBLK-33203-33203** Units: **mg/Kg** Analysis Date: **5/10/2011 04:12 AM**
Client ID: Run ID: **ICPMS1_110509A** SeqNo: **1621165** Prep Date: **5/7/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	ND	0.10								
Chromium	ND	0.25								
Copper	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.25								
Silver	ND	0.25								
Zinc	ND	0.50								

MBLK Sample ID: **MBLK-33203-33203** Units: **mg/Kg** Analysis Date: **5/10/2011 01:17 PM**
Client ID: Run ID: **ICPMS1_110509A** SeqNo: **1621829** Prep Date: **5/7/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	ND	0.25								

LCS Sample ID: **LCS-33203-33203** Units: **mg/Kg** Analysis Date: **5/10/2011 04:18 AM**
Client ID: Run ID: **ICPMS1_110509A** SeqNo: **1621167** Prep Date: **5/7/2011** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	5.132	0.50	5	0	103	80-120	0			
Barium	4.909	0.50	5	0	98.2	80-120	0			
Cadmium	4.589	0.20	5	0	91.8	80-120	0			
Chromium	5.625	0.50	5	0	112	80-120	0			
Copper	5.414	0.50	5	0	108	80-120	0			
Nickel	5.598	0.50	5	0	112	80-120	0			
Selenium	4.753	0.50	5	0	95.1	80-120	0			
Silver	4.485	0.50	5	0	89.7	80-120	0			
Zinc	5.422	1.0	5	0	108	80-120	0			

LCS Sample ID: **LCS-33203-33203** Units: **mg/Kg** Analysis Date: **5/10/2011 01:47 PM**
Client ID: Run ID: **ICPMS1_110509A** SeqNo: **1621832** Prep Date: **5/7/2011** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	4.871	0.50	5	0	97.4	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **33203** Instrument ID **ICPMS1** Method: **SW6020A**

LCSD Sample ID: **LCSD-33203-33203** Units: **mg/Kg** Analysis Date: **5/10/2011 04:24 AM**
Client ID: Run ID: **ICPMS1_110509A** SeqNo: **1621169** Prep Date: **5/7/2011** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.943	0.50	5	0	98.9	80-120	5.132	3.75	20	
Barium	4.747	0.50	5	0	94.9	80-120	4.909	3.36	20	
Cadmium	4.422	0.20	5	0	88.4	80-120	4.589	3.71	20	
Chromium	5.33	0.50	5	0	107	80-120	5.625	5.39	20	
Copper	5.166	0.50	5	0	103	80-120	5.414	4.69	20	
Nickel	5.33	0.50	5	0	107	80-120	5.598	4.9	20	
Selenium	4.559	0.50	5	0	91.2	80-120	4.753	4.17	20	
Silver	4.271	0.50	5	0	85.4	80-120	4.485	4.89	20	
Zinc	5.176	1.0	5	0	104	80-120	5.422	4.64	20	

LCSD Sample ID: **LCSD-33203-33203** Units: **mg/Kg** Analysis Date: **5/10/2011 01:53 PM**
Client ID: Run ID: **ICPMS1_110509A** SeqNo: **1621833** Prep Date: **5/7/2011** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	4.738	0.50	5	0	94.8	80-120	4.871	2.77	20	

MS Sample ID: **1105171-04BMS** Units: **mg/Kg** Analysis Date: **5/10/2011 10:13 AM**
Client ID: Run ID: **ICPMS1_110509A** SeqNo: **1621291** Prep Date: **5/7/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	8.409	0.41	8.157	1.531	84.3	80-120	0			
Barium	51.66	0.41	8.157	40.99	131	80-120	0			SO
Cadmium	7.184	0.16	8.157	0.03361	87.7	80-120	0			
Lead	13.59	0.41	8.157	4.057	117	80-120	0			
Selenium	6.488	0.41	8.157	0.2389	76.6	80-120	0			S
Silver	7.121	0.41	8.157	0.002449	87.3	80-120	0			
Zinc	18.16	0.82	8.157	11.3	84.1	80-120	0			

MS Sample ID: **1105171-04BMS** Units: **mg/Kg** Analysis Date: **5/10/2011 06:20 PM**
Client ID: Run ID: **ICPMS1_110509A** SeqNo: **1622158** Prep Date: **5/7/2011** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Copper	9.561	0.82	8.157	1.912	93.8	80-120	0			

MS Sample ID: **1105171-04BMS** Units: **mg/Kg** Analysis Date: **5/11/2011 11:00 AM**
Client ID: Run ID: **ICPMS2_110511A** SeqNo: **1622606** Prep Date: **5/7/2011** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium	12.8	0.82	8.157	4.15	106	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **33203** Instrument ID **ICPMS1** Method: **SW6020A**

MSD Sample ID: **1105171-04BMSD** Units: **mg/Kg** Analysis Date: **5/10/2011 10:19 AM**
Client ID: Run ID: **ICPMS1_110509A** SeqNo: **1621292** Prep Date: **5/7/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	8.626	0.41	8.278	1.531	85.7	80-120	8.409	2.54	25	
Barium	49.83	0.41	8.278	40.99	107	80-120	51.66	3.61	25	O
Cadmium	7.455	0.17	8.278	0.03361	89.7	80-120	7.184	3.7	25	
Lead	13.82	0.41	8.278	4.057	118	80-120	13.59	1.72	25	
Selenium	6.759	0.41	8.278	0.2389	78.8	80-120	6.488	4.1	25	S
Silver	7.342	0.41	8.278	0.002449	88.7	80-120	7.121	3.06	25	
Zinc	20.02	0.83	8.278	11.3	105	80-120	18.16	9.74	25	

MSD Sample ID: **1105171-04BMSD** Units: **mg/Kg** Analysis Date: **5/10/2011 06:26 PM**
Client ID: Run ID: **ICPMS1_110509A** SeqNo: **1622159** Prep Date: **5/7/2011** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Copper	9.882	0.83	8.278	1.912	96.3	80-120	9.561	3.3	25	

MSD Sample ID: **1105171-04BMSD** Units: **mg/Kg** Analysis Date: **5/11/2011 11:05 AM**
Client ID: Run ID: **ICPMS2_110511A** SeqNo: **1622607** Prep Date: **5/7/2011** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium	13.09	0.83	8.278	4.15	108	80-120	12.8	2.29	25	

The following samples were analyzed in this batch: 1105150-01A 1105150-02A 1105150-03A 1105150-04A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **33204** Instrument ID **SVMS5** Method: **SW8270**

MBLK Sample ID: **SBLKS1-33204-33204** Units: **µg/Kg** Analysis Date: **5/11/2011 09:02 AM**
Client ID: Run ID: **SVMS5_110510A** SeqNo: **1622740** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	ND	160								
1,2-Dichlorobenzene	ND	160								
1,3-Dichlorobenzene	ND	160								
1,4-Dichlorobenzene	ND	160								
2,4,5-Trichlorophenol	ND	160								
2,4,6-Trichlorophenol	ND	160								
2,4-Dichlorophenol	ND	160								
2,4-Dimethylphenol	ND	330								
2,4-Dinitrophenol	ND	660								
2,4-Dinitrotoluene	ND	160								
2,6-Dinitrotoluene	ND	160								
2-Chloronaphthalene	ND	80								
2-Chlorophenol	ND	160								
2-Methylnaphthalene	ND	80								
2-Methylphenol	ND	160								
2-Nitroaniline	ND	660								
2-Nitrophenol	ND	160								
3,3'-Dichlorobenzidine	ND	660								
3-Nitroaniline	ND	660								
4,6-Dinitro-2-methylphenol	ND	330								
4-Bromophenyl phenyl ether	ND	160								
4-Chloro-3-methylphenol	ND	160								
4-Chloroaniline	ND	660								
4-Chlorophenyl phenyl ether	ND	160								
4-Methylphenol	ND	160								
4-Nitroaniline	ND	660								
4-Nitrophenol	ND	660								
Acenaphthene	ND	30								
Acenaphthylene	ND	30								
Anthracene	ND	30								
Benzo(a)anthracene	ND	30								
Benzo(a)pyrene	ND	30								
Benzo(b)fluoranthene	ND	30								
Benzo(g,h,i)perylene	ND	30								
Benzo(k)fluoranthene	ND	30								
Bis(2-chloroethoxy)methane	ND	160								
Bis(2-chloroethyl)ether	ND	160								
Bis(2-chloroisopropyl)ether	ND	160								
Bis(2-ethylhexyl)phthalate	ND	330								
Butyl benzyl phthalate	ND	160								
Carbazole	ND	160								
Chrysene	ND	30								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **33204** Instrument ID **SVMS5** Method: **SW8270**

Dibenzo(a,h)anthracene	ND	30						
Dibenzofuran	ND	160						
Diethyl phthalate	ND	330						
Dimethyl phthalate	ND	330						
Di-n-butyl phthalate	76.67	330						J
Di-n-octyl phthalate	ND	160						
Famphur	ND	0						
Fluoranthene	ND	30						
Fluorene	ND	30						
Hexachlorobenzene	ND	160						
Hexachlorobutadiene	ND	160						
Hexachlorocyclopentadiene	ND	330						
Hexachloroethane	ND	160						
Indeno(1,2,3-cd)pyrene	ND	30						
Isophorone	ND	160						
Naphthalene	ND	30						
Nitrobenzene	ND	160						
N-Nitrosodi-n-propylamine	ND	160						
N-Nitrosodiphenylamine	ND	160						
Pentachlorophenol	ND	330						
Phenanthrene	ND	30						
Phenol	ND	160						
Pyrene	ND	30						
Pyridine	ND	160						
Surr: 2,4,6-Tribromophenol	*1198*	0	*1667*	0	*71.9*	*34-140*	0	
Surr: 2-Fluorobiphenyl	*953*	0	*1667*	0	*57.2*	*12-100*	0	
Surr: 2-Fluorophenol	*1080*	0	*1667*	0	*64.8*	*33-117*	0	
Surr: 4-Terphenyl-d14	*1615*	0	*1667*	0	*96.9*	*25-137*	0	
Surr: Nitrobenzene-d5	*1009*	0	*1667*	0	*60.6*	*37-107*	0	
Surr: Phenol-d6	*1033*	0	*1667*	0	*62*	*40-106*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **33204** Instrument ID **SVMS5** Method: **SW8270**

LCS Sample ID: **SLCSS1-33204-33204** Units: **µg/Kg** Analysis Date: **5/11/2011 09:36 AM**
Client ID: Run ID: **SVMS5_110510A** SeqNo: **1622741** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	1021	160	1333	0	76.6	45-110	0			
1,2-Dichlorobenzene	993	160	1333	0	74.5	45-95	0			
1,3-Dichlorobenzene	960.7	160	1333	0	72.1	40-100	0			
1,4-Dichlorobenzene	978	160	1333	0	73.4	35-105	0			
2,4,5-Trichlorophenol	1066	160	1333	0	80	50-110	0			
2,4,6-Trichlorophenol	1022	160	1333	0	76.7	45-110	0			
2,4-Dichlorophenol	1030	160	1333	0	77.3	45-110	0			
2,4-Dimethylphenol	1065	330	1333	0	79.9	30-105	0			
2,4-Dinitrophenol	745	660	1333	0	55.9	15-130	0			
2,4-Dinitrotoluene	1073	160	1333	0	80.5	50-115	0			
2,6-Dinitrotoluene	1135	160	1333	0	85.1	50-110	0			
2-Chloronaphthalene	1045	80	1333	0	78.4	45-105	0			
2-Chlorophenol	976.7	160	1333	0	73.3	45-105	0			
2-Methylnaphthalene	1102	80	1333	0	82.7	45-105	0			
2-Methylphenol	1018	160	1333	0	76.3	40-105	0			
2-Nitroaniline	1348	660	1333	0	101	45-120	0			
2-Nitrophenol	1008	160	1333	0	75.6	40-110	0			
3-Nitroaniline	1197	660	1333	0	89.8	25-150	0			
4-Bromophenyl phenyl ether	1161	160	1333	0	87.1	45-115	0			
4-Chloro-3-methylphenol	1155	160	1333	0	86.6	45-115	0			
4-Chloroaniline	4827	660	1333	0	362	15-110	0			SE
4-Chlorophenyl phenyl ether	1031	160	1333	0	77.3	45-110	0			
4-Methylphenol	1058	160	1333	0	79.3	40-105	0			
4-Nitroaniline	952	660	1333	0	71.4	35-150	0			
4-Nitrophenol	1033	660	1333	0	77.5	15-140	0			
Acenaphthene	1040	30	1333	0	78	45-110	0			
Acenaphthylene	1110	30	1333	0	83.3	45-105	0			
Anthracene	1225	30	1333	0	91.9	55-105	0			
Benzo(a)anthracene	1094	30	1333	0	82.1	50-110	0			
Benzo(a)pyrene	1171	30	1333	0	87.9	50-110	0			
Benzo(b)fluoranthene	1115	30	1333	0	83.6	45-115	0			
Benzo(g,h,i)perylene	1082	30	1333	0	81.2	40-125	0			
Benzo(k)fluoranthene	1194	30	1333	0	89.6	45-115	0			
Bis(2-chloroethoxy)methane	1081	160	1333	0	81.1	45-110	0			
Bis(2-chloroethyl)ether	1010	160	1333	0	75.8	40-105	0			
Bis(2-chloroisopropyl)ether	1009	160	1333	0	75.7	20-115	0			
Bis(2-ethylhexyl)phthalate	1183	330	1333	0	88.7	45-125	0			
Butyl benzyl phthalate	1117	160	1333	0	83.8	50-125	0			
Carbazole	1909	160	1333	0	143	50-150	0			
Chrysene	1158	30	1333	0	86.9	55-110	0			
Dibenzo(a,h)anthracene	1152	30	1333	0	86.4	40-125	0			
Dibenzofuran	1128	160	1333	0	84.6	50-105	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **33204** Instrument ID **SVMS5** Method: **SW8270**

Diethyl phthalate	1194	330	1333	0	89.5	50-115	0	
Dimethyl phthalate	1143	330	1333	0	85.8	50-110	0	
Di-n-butyl phthalate	1105	330	1333	0	82.9	55-110	0	
Di-n-octyl phthalate	1169	160	1333	0	87.7	40-130	0	
Fluoranthene	1342	30	1333	0	101	55-115	0	
Fluorene	1127	30	1333	0	84.6	50-110	0	
Hexachlorobenzene	1162	160	1333	0	87.2	45-120	0	
Hexachlorobutadiene	1034	160	1333	0	77.5	40-115	0	
Hexachlorocyclopentadiene	812	330	1333	0	60.9	40-115	0	
Hexachloroethane	983	160	1333	0	73.7	35-110	0	
Indeno(1,2,3-cd)pyrene	1120	30	1333	0	84	40-120	0	
Isophorone	1096	160	1333	0	82.2	45-110	0	
Naphthalene	1035	30	1333	0	77.7	40-105	0	
Nitrobenzene	1063	160	1333	0	79.7	40-115	0	
N-Nitrosodi-n-propylamine	1079	160	1333	0	80.9	40-115	0	
N-Nitrosodiphenylamine	1665	160	1333	0	125	50-115	0	S
Pentachlorophenol	933.7	330	1333	0	70	25-120	0	
Phenanthrene	1199	30	1333	0	90	50-110	0	
Phenol	1040	160	1333	0	78	40-100	0	
Pyrene	1123	30	1333	0	84.2	45-125	0	
Surr: 2,4,6-Tribromophenol	*1488*	0	*1667*	0	*89.3*	*34-140*	0	
Surr: 2-Fluorobiphenyl	*1260*	0	*1667*	0	*75.6*	*12-100*	0	
Surr: 2-Fluorophenol	*1255*	0	*1667*	0	*75.3*	*33-117*	0	
Surr: 4-Terphenyl-d14	*1649*	0	*1667*	0	*99*	*25-137*	0	
Surr: Nitrobenzene-d5	*1315*	0	*1667*	0	*78.9*	*37-107*	0	
Surr: Phenol-d6	*1284*	0	*1667*	0	*77*	*40-106*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **33204** Instrument ID **SVMS5** Method: **SW8270**

LCSD Sample ID: **SLCSDS1-33204-33204** Units: **µg/Kg** Analysis Date: **5/11/2011 10:10 AM**
Client ID: Run ID: **SVMS5_110510A** SeqNo: **1622742** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	1090	160	1333	0	81.7	45-110	1021	6.54	25	
1,2-Dichlorobenzene	1061	160	1333	0	79.6	45-95	993	6.65	25	
1,3-Dichlorobenzene	1039	160	1333	0	78	40-100	960.7	7.87	25	
1,4-Dichlorobenzene	1059	160	1333	0	79.4	35-105	978	7.95	25	
2,4,5-Trichlorophenol	1180	160	1333	0	88.5	50-110	1066	10.1	25	
2,4,6-Trichlorophenol	1108	160	1333	0	83.1	45-110	1022	8.04	25	
2,4-Dichlorophenol	1110	160	1333	0	83.2	45-110	1030	7.45	25	
2,4-Dimethylphenol	1026	330	1333	0	77	30-105	1065	3.67	25	
2,4-Dinitrophenol	1090	660	1333	0	81.7	15-130	745	37.6	25	R
2,4-Dinitrotoluene	1111	160	1333	0	83.4	50-115	1073	3.48	25	
2,6-Dinitrotoluene	1175	160	1333	0	88.2	50-110	1135	3.52	25	
2-Chloronaphthalene	1115	80	1333	0	83.6	45-105	1045	6.42	25	
2-Chlorophenol	1050	160	1333	0	78.8	45-105	976.7	7.24	25	
2-Methylnaphthalene	1168	80	1333	0	87.6	45-105	1102	5.79	25	
2-Methylphenol	1092	160	1333	0	81.9	40-105	1018	7.08	25	
2-Nitroaniline	1293	660	1333	0	97	45-120	1348	4.11	25	
2-Nitrophenol	1119	160	1333	0	83.9	40-110	1008	10.4	25	
3-Nitroaniline	1233	660	1333	0	92.5	25-110	1197	2.94	25	
4-Bromophenyl phenyl ether	1158	160	1333	0	86.9	45-115	1161	0.23	25	
4-Chloro-3-methylphenol	1209	160	1333	0	90.7	45-115	1155	4.57	25	
4-Chloroaniline	5039	660	1333	0	378	15-110	4827	4.3	25	SE
4-Chlorophenyl phenyl ether	1058	160	1333	0	79.4	45-110	1031	2.65	25	
4-Methylphenol	1127	160	1333	0	84.6	40-105	1058	6.38	25	
4-Nitroaniline	1004	660	1333	0	75.3	35-150	952	5.35	25	
4-Nitrophenol	1144	660	1333	0	85.8	15-140	1033	10.3	25	
Acenaphthene	1106	30	1333	0	83	45-110	1040	6.18	25	
Acenaphthylene	1171	30	1333	0	87.9	45-105	1110	5.35	25	
Anthracene	1243	30	1333	0	93.2	55-105	1225	1.46	25	
Benzo(a)anthracene	1135	30	1333	0	85.2	50-110	1094	3.68	25	
Benzo(a)pyrene	1206	30	1333	0	90.4	50-110	1171	2.89	25	
Benzo(b)fluoranthene	1158	30	1333	0	86.9	45-115	1115	3.81	25	
Benzo(g,h,i)perylene	1134	30	1333	0	85.1	40-125	1082	4.69	25	
Benzo(k)fluoranthene	1390	30	1333	0	104	45-115	1194	15.2	25	
Bis(2-chloroethoxy)methane	1169	160	1333	0	87.7	45-110	1081	7.88	25	
Bis(2-chloroethyl)ether	1102	160	1333	0	82.6	40-105	1010	8.65	25	
Bis(2-chloroisopropyl)ether	1068	160	1333	0	80.1	20-115	1009	5.68	25	
Bis(2-ethylhexyl)phthalate	1213	330	1333	0	91	45-125	1183	2.53	25	
Butyl benzyl phthalate	1162	160	1333	0	87.2	50-125	1117	3.95	25	
Carbazole	1921	160	1333	0	144	50-150	1909	0.609	25	
Chrysene	1182	30	1333	0	88.7	55-110	1158	2.08	25	
Dibenzo(a,h)anthracene	1212	30	1333	0	90.9	40-125	1152	5.08	25	
Dibenzofuran	1168	160	1333	0	87.6	50-105	1128	3.48	25	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **33204** Instrument ID **SVMS5** Method: **SW8270**

Diethyl phthalate	1224	330	1333	0	91.8	50-115	1194	2.54	25	
Dimethyl phthalate	1172	330	1333	0	87.9	50-110	1143	2.45	25	
Di-n-butyl phthalate	1125	330	1333	0	84.4	55-110	1105	1.76	25	
Di-n-octyl phthalate	1195	160	1333	0	89.6	40-130	1169	2.23	25	
Fluoranthene	1400	30	1333	0	105	55-115	1342	4.26	25	
Fluorene	1160	30	1333	0	87	50-110	1127	2.86	25	
Hexachlorobenzene	1186	160	1333	0	89	45-120	1162	2.04	25	
Hexachlorobutadiene	1095	160	1333	0	82.1	40-115	1034	5.73	25	
Hexachlorocyclopentadiene	932.3	330	1333	0	69.9	40-115	812	13.8	25	
Hexachloroethane	1062	160	1333	0	79.6	35-110	983	7.69	25	
Indeno(1,2,3-cd)pyrene	1175	30	1333	0	88.1	40-120	1120	4.79	25	
Isophorone	1169	160	1333	0	87.7	45-110	1096	6.45	25	
Naphthalene	1114	30	1333	0	83.6	40-105	1035	7.35	25	
Nitrobenzene	1128	160	1333	0	84.6	40-115	1063	5.96	25	
N-Nitrosodi-n-propylamine	1149	160	1333	0	86.2	40-115	1079	6.31	25	
N-Nitrosodiphenylamine	1697	160	1333	0	127	50-115	1665	1.94	25	S
Pentachlorophenol	1092	330	1333	0	81.9	25-120	933.7	15.6	25	
Phenanthrene	1220	30	1333	0	91.5	50-110	1199	1.71	25	
Phenol	1132	160	1333	0	84.9	40-100	1040	8.44	25	
Pyrene	1179	30	1333	0	88.5	45-125	1123	4.92	25	
Surr: 2,4,6-Tribromophenol	*1509*	0	*1667*	0	*90.6*	*34-140*	1488	*1.42*	*40*	
Surr: 2-Fluorobiphenyl	*1376*	0	*1667*	0	*82.6*	*12-100*	1260	*8.83*	*40*	
Surr: 2-Fluorophenol	*1331*	0	*1667*	0	*79.8*	*33-117*	1255	*5.85*	*40*	
Surr: 4-Terphenyl-d14	*1723*	0	*1667*	0	*103*	*25-137*	1649	*4.35*	*40*	
Surr: Nitrobenzene-d5	*1442*	0	*1667*	0	*86.5*	*37-107*	1315	*9.21*	*40*	
Surr: Phenol-d6	*1361*	0	*1667*	0	*81.7*	*40-106*	1284	*5.82*	*40*	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **33204** Instrument ID **SVMS5** Method: **SW8270**

MS Sample ID: **1105174-04A MS** Units: **µg/Kg** Analysis Date: **5/11/2011 10:45 AM**
Client ID: Run ID: **SVMS5_110510A** SeqNo: **1622743** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	1534	320	2632	0	58.3	45-110	0			
1,2-Dichlorobenzene	1422	320	2632	0	54	45-95	0			
1,3-Dichlorobenzene	1321	320	2632	0	50.2	40-100	0			
1,4-Dichlorobenzene	1329	320	2632	0	50.5	35-105	0			
2,4,5-Trichlorophenol	2204	320	2632	0	83.7	50-110	0			
2,4,6-Trichlorophenol	2183	320	2632	0	82.9	45-110	0			
2,4-Dichlorophenol	2010	320	2632	0	76.4	45-110	0			
2,4-Dimethylphenol	1683	650	2632	0	64	30-105	0			
2,4-Dinitrophenol	625.9	1,300	2632	0	23.8	15-130	0			J
2,4-Dinitrotoluene	2061	320	2632	0	78.3	50-115	0			
2,6-Dinitrotoluene	2154	320	2632	0	81.8	50-110	0			
2-Chloronaphthalene	1817	160	2632	0	69	45-105	0			
2-Chlorophenol	1637	320	2632	0	62.2	45-105	0			
2-Methylnaphthalene	1809	160	2632	9.926	68.3	45-105	0			
2-Methylphenol	1777	320	2632	0	67.5	40-105	0			
2-Nitroaniline	2436	1,300	2632	0	92.5	45-120	0			
2-Nitrophenol	1768	320	2632	0	67.2	40-110	0			
3-Nitroaniline	2351	1,300	2632	0	89.3	25-110	0			
4-Bromophenyl phenyl ether	1906	320	2632	0	72.4	45-115	0			
4-Chloro-3-methylphenol	2288	320	2632	0	86.9	45-115	0			
4-Chloroaniline	6998	1,300	2632	0	266	15-110	0			SE
4-Chlorophenyl phenyl ether	1770	320	2632	0	67.2	45-110	0			
4-Methylphenol	1901	320	2632	0	72.2	40-105	0			
4-Nitroaniline	1619	1,300	2632	0	61.5	35-150	0			
4-Nitrophenol	2178	1,300	2632	0	82.7	15-140	0			
Acenaphthene	1949	59	2632	31.43	72.9	45-110	0			
Acenaphthylene	2013	59	2632	16.54	75.8	45-105	0			
Anthracene	2359	59	2632	100.3	85.8	55-105	0			
Benzo(a)anthracene	3552	59	2632	666.4	110	50-110	0			
Benzo(a)pyrene	3721	59	2632	654.5	116	50-110	0			S
Benzo(b)fluoranthene	3741	59	2632	759.4	113	45-115	0			
Benzo(g,h,i)perylene	2599	59	2632	307.7	87	40-125	0			
Benzo(k)fluoranthene	5017	59	2632	882.1	157	45-115	0			SE
Bis(2-chloroethoxy)methane	1906	320	2632	0	72.4	45-110	0			
Bis(2-chloroethyl)ether	1587	320	2632	0	60.3	40-105	0			
Bis(2-chloroisopropyl)ether	1568	320	2632	0	59.6	20-115	0			
Bis(2-ethylhexyl)phthalate	1915	650	2632	35.4	71.4	45-125	0			
Butyl benzyl phthalate	1747	320	2632	0	66.4	50-125	0			
Carbazole	4235	320	2632	0	161	50-150	0			SE
Chrysene	3682	59	2632	770.9	111	55-110	0			S
Dibenzo(a,h)anthracene	2195	59	2632	116.1	79	40-125	0			
Dibenzofuran	2051	320	2632	14.89	77.3	50-105	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **33204** Instrument ID **SVMS5** Method: **SW8270**

Diethyl phthalate	2124	650	2632	0	80.7	50-115	0	
Dimethyl phthalate	2268	650	2632	212.4	78.1	50-110	0	
Di-n-butyl phthalate	1830	650	2632	75.77	66.6	55-110	0	
Di-n-octyl phthalate	2114	320	2632	63.2	77.9	40-130	0	
Fluoranthene	8671	59	2632	2204	246	55-115	0	SE
Fluorene	2105	59	2632	45.66	78.2	50-110	0	
Hexachlorobenzene	1997	320	2632	0	75.9	45-120	0	
Hexachlorobutadiene	1443	320	2632	0	54.8	40-115	0	
Hexachlorocyclopentadiene	485	650	2632	0	18.4	40-115	0	JS
Hexachloroethane	1213	320	2632	0	46.1	35-110	0	
Indeno(1,2,3-cd)pyrene	2644	59	2632	274.6	90	40-120	0	
Isophorone	1953	320	2632	0	74.2	45-110	0	
Naphthalene	1629	59	2632	8.603	61.6	40-105	0	
Nitrobenzene	1744	320	2632	0	66.3	40-115	0	
N-Nitrosodi-n-propylamine	1874	320	2632	0	71.2	40-115	0	
N-Nitrosodiphenylamine	2458	320	2632	0	93.4	50-115	0	
Pentachlorophenol	1934	650	2632	0	73.5	25-120	0	
Phenanthrene	4681	59	2632	837.4	146	50-110	0	SE
Phenol	1797	320	2632	0	68.3	40-100	0	
Pyrene	5847	59	2632	1471	166	45-125	0	SE
Surr: 2,4,6-Tribromophenol	*2791*	0	*3291*	0	*84.8*	*34-140*	0	
Surr: 2-Fluorobiphenyl	*1997*	0	*3291*	0	*60.7*	*12-100*	0	
Surr: 2-Fluorophenol	*2156*	0	*3291*	0	*65.5*	*33-117*	0	
Surr: 4-Terphenyl-d14	*2081*	0	*3291*	0	*63.2*	*25-137*	0	
Surr: Nitrobenzene-d5	*2319*	0	*3291*	0	*70.5*	*37-107*	0	
Surr: Phenol-d6	*2328*	0	*3291*	0	*70.7*	*40-106*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **33204** Instrument ID **SVMS5** Method: **SW8270**

MSD Sample ID: **1105174-04A MSD** Units: **µg/Kg** Analysis Date: **5/11/2011 11:19 AM**
Client ID: Run ID: **SVMS5_110510A** SeqNo: **1622744** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	1663	310	2567	0	64.8	45-110	1534	8.07	30	
1,2-Dichlorobenzene	1516	310	2567	0	59	45-95	1422	6.35	30	
1,3-Dichlorobenzene	1376	310	2567	0	53.6	40-100	1321	4.06	30	
1,4-Dichlorobenzene	1443	310	2567	0	56.2	35-105	1329	8.19	30	
2,4,5-Trichlorophenol	2258	310	2567	0	88	50-110	2204	2.43	30	
2,4,6-Trichlorophenol	2214	310	2567	0	86.2	45-110	2183	1.41	30	
2,4-Dichlorophenol	2090	310	2567	0	81.4	45-110	2010	3.91	30	
2,4-Dimethylphenol	1814	640	2567	0	70.7	30-105	1683	7.46	30	
2,4-Dinitrophenol	415.9	1,300	2567	0	16.2	15-130	625.9	0	30	J
2,4-Dinitrotoluene	2067	310	2567	0	80.5	50-115	2061	0.275	30	
2,6-Dinitrotoluene	2180	310	2567	0	84.9	50-110	2154	1.22	30	
2-Chloronaphthalene	1955	150	2567	0	76.1	45-105	1817	7.29	30	
2-Chlorophenol	1684	310	2567	0	65.6	45-105	1637	2.83	30	
2-Methylnaphthalene	1988	150	2567	9.926	77	45-105	1809	9.42	30	
2-Methylphenol	1903	310	2567	0	74.1	40-105	1777	6.83	30	
2-Nitroaniline	2476	1,300	2567	0	96.5	45-120	2436	1.66	30	
2-Nitrophenol	1801	310	2567	0	70.2	40-110	1768	1.84	30	
3-Nitroaniline	2447	1,300	2567	0	95.3	25-110	2351	3.98	30	
4-Bromophenyl phenyl ether	2128	310	2567	0	82.9	45-115	1906	11	30	
4-Chloro-3-methylphenol	2366	310	2567	0	92.2	45-115	2288	3.34	30	
4-Chloroaniline	7413	1,300	2567	0	289	15-110	6998	5.76	30	SE
4-Chlorophenyl phenyl ether	1930	310	2567	0	75.2	45-110	1770	8.64	30	
4-Methylphenol	2048	310	2567	0	79.8	40-105	1901	7.45	30	
4-Nitroaniline	1667	1,300	2567	0	64.9	35-150	1619	2.92	30	
4-Nitrophenol	2259	1,300	2567	0	88	15-140	2178	3.69	30	
Acenaphthene	2073	58	2567	31.43	79.5	45-110	1949	6.16	30	
Acenaphthylene	2190	58	2567	16.54	84.7	45-105	2013	8.45	30	
Anthracene	2399	58	2567	100.3	89.5	55-105	2359	1.71	30	
Benzo(a)anthracene	3363	58	2567	666.4	105	50-110	3552	5.48	30	
Benzo(a)pyrene	3566	58	2567	654.5	113	50-110	3721	4.26	30	S
Benzo(b)fluoranthene	3690	58	2567	759.4	114	45-115	3741	1.36	30	
Benzo(g,h,i)perylene	2051	58	2567	307.7	67.9	40-125	2599	23.5	30	
Benzo(k)fluoranthene	4774	58	2567	882.1	152	45-115	5017	4.95	30	SE
Bis(2-chloroethoxy)methane	1976	310	2567	0	77	45-110	1906	3.63	30	
Bis(2-chloroethyl)ether	1575	310	2567	0	61.4	40-105	1587	0.769	30	
Bis(2-chloroisopropyl)ether	1668	310	2567	0	65	20-115	1568	6.14	30	
Bis(2-ethylhexyl)phthalate	2036	640	2567	35.4	77.9	45-125	1915	6.12	30	
Butyl benzyl phthalate	1873	310	2567	0	73	50-125	1747	6.98	30	
Carbazole	4375	310	2567	0	170	50-150	4235	3.26	30	SE
Chrysene	3614	58	2567	770.9	111	55-110	3682	1.85	30	S
Dibenzo(a,h)anthracene	1939	58	2567	116.1	71	40-125	2195	12.4	30	
Dibenzofuran	2172	310	2567	14.89	84	50-105	2051	5.72	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **33204** Instrument ID **SVMS5** Method: **SW8270**

Diethyl phthalate	2237	640	2567	0	87.1	50-115	2124	5.16	30	
Dimethyl phthalate	2212	640	2567	212.4	77.9	50-110	2268	2.5	30	
Di-n-butyl phthalate	1935	640	2567	75.77	72.4	55-110	1830	5.62	30	
Di-n-octyl phthalate	2388	310	2567	63.2	90.5	40-130	2114	12.2	30	
Fluoranthene	7003	58	2567	2204	187	55-115	8671	21.3	30	SE
Fluorene	2203	58	2567	45.66	84	50-110	2105	4.53	30	
Hexachlorobenzene	2159	310	2567	0	84.1	45-120	1997	7.8	30	
Hexachlorobutadiene	1578	310	2567	0	61.5	40-115	1443	8.95	30	
Hexachlorocyclopentadiene	341.5	640	2567	0	13.3	40-115	485	0	30	JS
Hexachloroethane	1145	310	2567	0	44.6	35-110	1213	5.75	30	
Indeno(1,2,3-cd)pyrene	2213	58	2567	274.6	75.5	40-120	2644	17.7	30	
Isophorone	2061	310	2567	0	80.3	45-110	1953	5.37	30	
Naphthalene	1794	58	2567	8.603	69.5	40-105	1629	9.62	30	
Nitrobenzene	1842	310	2567	0	71.7	40-115	1744	5.44	30	
N-Nitrosodi-n-propylamine	1974	310	2567	0	76.9	40-115	1874	5.2	30	
N-Nitrosodiphenylamine	2284	310	2567	0	89	50-115	2458	7.35	30	
Pentachlorophenol	2038	640	2567	0	79.4	25-120	1934	5.26	30	
Phenanthrene	4218	58	2567	837.4	132	50-110	4681	10.4	30	SE
Phenol	1841	310	2567	0	71.7	40-100	1797	2.44	30	
Pyrene	5017	58	2567	1471	138	45-125	5847	15.3	30	SE
Surr: 2,4,6-Tribromophenol	*2815*	0	*3210*	0	*87.7*	*34-140*	2791	*0.866*	*40*	
Surr: 2-Fluorobiphenyl	*2286*	0	*3210*	0	*71.2*	*12-100*	1997	*13.5*	*40*	
Surr: 2-Fluorophenol	*2143*	0	*3210*	0	*66.8*	*33-117*	2156	*0.621*	*40*	
Surr: 4-Terphenyl-d14	*2491*	0	*3210*	0	*77.6*	*25-137*	2081	*17.9*	*40*	
Surr: Nitrobenzene-d5	*2337*	0	*3210*	0	*72.8*	*37-107*	2319	*0.77*	*40*	
Surr: Phenol-d6	*2353*	0	*3210*	0	*73.3*	*40-106*	2328	*1.09*	*40*	

The following samples were analyzed in this batch: 1105150-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **R89919** Instrument ID **VMS5** Method: **SW8260**

MBLK Sample ID: **VBLKW2-110510-R89919** Units: **µg/L** Analysis Date: **5/11/2011 12:16 PM**
Client ID: Run ID: **VMS5_110510B** SeqNo: **1622018** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	1.0								
Ethylbenzene	ND	1.0								
m,p-Xylene	ND	2.0								
o-Xylene	ND	1.0								
Toluene	ND	1.0								
Xylenes, Total	ND	2.0								

LCS Sample ID: **VLCSW2-110510-R89919** Units: **µg/L** Analysis Date: **5/10/2011 10:59 PM**
Client ID: Run ID: **VMS5_110510B** SeqNo: **1622016** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	22.67	1.0	20	0	113	80-120	0			
Ethylbenzene	22.42	1.0	20	0	112	75-125	0			
m,p-Xylene	42.21	2.0	40	0	106	75-130	0			
o-Xylene	21.2	1.0	20	0	106	80-120	0			
Toluene	21.6	1.0	20	0	108	75-120	0			
Xylenes, Total	63.41	2.0	60	0	106	75-130	0			

LCSD Sample ID: **VLCSDW2-110510-R89919** Units: **µg/L** Analysis Date: **5/10/2011 11:25 PM**
Client ID: Run ID: **VMS5_110510B** SeqNo: **1622017** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.8	1.0	20	0	109	80-120	22.67	3.91	30	
Ethylbenzene	21.34	1.0	20	0	107	75-125	22.42	4.94	30	
m,p-Xylene	40.57	2.0	40	0	101	75-130	42.21	3.96	30	
o-Xylene	20.4	1.0	20	0	102	80-120	21.2	3.85	30	
Toluene	20.82	1.0	20	0	104	75-120	21.6	3.68	30	
Xylenes, Total	60.97	2.0	60	0	102	75-130	63.41	3.92	30	

MS Sample ID: **1105174-04B MS** Units: **µg/Kg** Analysis Date: **5/11/2011 08:21 AM**
Client ID: Run ID: **VMS5_110510B** SeqNo: **1622623** Prep Date: DF: **118**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	2674	120	2360	0	113	75-125	0			
Ethylbenzene	2434	240	2360	0	103	75-125	0			
m,p-Xylene	4506	240	4720	0	95.5	80-125	0			
o-Xylene	2283	120	2360	0	96.8	75-125	0			
Toluene	2491	180	2360	0	106	70-125	0			
Xylenes, Total	6790	350	7080	0	95.9	75-125	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **R89919** Instrument ID **VMS5** Method: **SW8260**

MSD Sample ID: **1105174-04B MSD** Units: **µg/Kg** Analysis Date: **5/11/2011 08:47 AM**
Client ID: Run ID: **VMS5_110510B** SeqNo: **1622624** Prep Date: DF: **118**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	2657	120	2360	0	113	75-125	2674	0.62	30	
Ethylbenzene	2447	240	2360	0	104	75-125	2434	0.532	30	
m,p-Xylene	4515	240	4720	0	95.6	80-125	4506	0.183	30	
o-Xylene	2259	120	2360	0	95.7	75-125	2283	1.09	30	
Toluene	2493	180	2360	0	106	70-125	2491	0.0947	30	
Xylenes, Total	6773	350	7080	0	95.7	75-125	6790	0.244	30	

The following samples were analyzed in this batch: 1105150-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **33240** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK Sample ID: **MBLK-33240-33240** Units: **mg/Kg** Analysis Date: **5/10/2011 04:00 PM**
Client ID: Run ID: **WETCHEM_110510H** SeqNo: **1621803** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	ND	0.49								

LCS Sample ID: **LCS-33240-33240** Units: **mg/Kg** Analysis Date: **5/10/2011 04:00 PM**
Client ID: Run ID: **WETCHEM_110510H** SeqNo: **1621804** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.667	0.48	1.938	0	86	75-110	0			

LCSD Sample ID: **LCSD-33240-33240** Units: **mg/Kg** Analysis Date: **5/10/2011 04:00 PM**
Client ID: Run ID: **WETCHEM_110510H** SeqNo: **1621812** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.623	0.49	1.946	0	83.4	75-110	1.667	2.68	20	

MS Sample ID: **1105084-01B MS** Units: **mg/Kg** Analysis Date: **5/10/2011 04:00 PM**
Client ID: Run ID: **WETCHEM_110510H** SeqNo: **1621807** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.1	0.50	1.992	0	55.2	60-130	0			S

MSD Sample ID: **1105084-01B MSD** Units: **mg/Kg** Analysis Date: **5/10/2011 04:00 PM**
Client ID: Run ID: **WETCHEM_110510H** SeqNo: **1621808** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.138	0.49	1.969	0	57.8	60-130	1.1	3.41	30	S

The following samples were analyzed in this batch: 1105150-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **R89791** Instrument ID **WETCHEM** Method: **SW9040**

DUP Sample ID: **1105145-01A DUP** Units: **s.u.** Analysis Date: **5/6/2011 11:00 AM**
Client ID: Run ID: **WETCHEM_110506E** SeqNo: **1618948** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	6.85	0	0	0	0	0-0	6.85	0	20	

DUP Sample ID: **1105149-05A DUP** Units: **s.u.** Analysis Date: **5/6/2011 11:00 AM**
Client ID: Run ID: **WETCHEM_110506E** SeqNo: **1618954** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	6.45	0	0	0	0	0-0	6.45	0	20	

The following samples were analyzed in this batch: 1105150-01A 1105150-05A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **R89852** Instrument ID **MOIST** Method: **A2540 G**

MBLK Sample ID: **WBLKS1-R89852** Units: **% of sample** Analysis Date: **5/6/2011 12:01 PM**
Client ID: Run ID: **MOIST_110506D** SeqNo: **1620089** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R89852** Units: **% of sample** Analysis Date: **5/6/2011 12:01 PM**
Client ID: Run ID: **MOIST_110506D** SeqNo: **1620085** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	99.99	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **1105138-21A DUP** Units: **% of sample** Analysis Date: **5/6/2011 12:01 PM**
Client ID: Run ID: **MOIST_110506D** SeqNo: **1620065** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	18.18	0.050	0	0	0	0-0	18.06	0.662	20	

DUP Sample ID: **1105150-01A DUP** Units: **% of sample** Analysis Date: **5/6/2011 12:01 PM**
Client ID: **Drill Cuttings** Run ID: **MOIST_110506D** SeqNo: **1620079** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	36.15	0.050	0	0	0	0-0	35.4	2.1	20	

The following samples were analyzed in this batch:

1105150-01A	1105150-02A	1105150-03A
1105150-04A	1105150-05A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

WORKORDER # 1105150

PAGE 1 of 1

DISPOSAL By Lab or Return to Client

PROJECT NAME	PDC Mesa 16 Drill Cuttings	SAMPLER	Casey Richardson
PROJECT No.		SITE ID	
		EDD FORMAT	
		PURCHASE ORDER	
COMPANY NAME	HRL Compliance Solutions, Inc.	BILL TO COMPANY	PDC
SEND REPORT TO	Herman Lucero	INVOICE ATTN TO	Adell Heneghan
ADDRESS	744 Horizon Ct. Suite 140	ADDRESS	1775 Sherman Street #3000
CITY / STATE / ZIP	Grand Junction, CO. 81506	CITY / STATE / ZIP	Denver, CO 80203
PHONE	970-243-3271	PHONE	303-860-5800
FAX	970-243-3280	FAX	
E-MAIL	hlucero@hrlcomp.com	E-MAIL	ahenehghan@petd.com

DATE 5/4/2011

TURNAROUND Standard

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	BTEX	TVPH	TEPH	TOTAL METALS - TABLE 910.1	SEMI VOLS	SAR	EC	pH	ARSENIC
1	Drill Cuttings	soil	5/4/2011	1030	3	4°C		x	x	x	x	x	x	x	x	
2	AS 1	soil	5/4/2011	1045	1	4°C										x
3	AS 2	soil	5/4/2011	1050	1	4°C										x
4	AS 3	soil	5/4/2011	1100	1	4°C										x
5	BACKGROUND	soil	5/4/2011	1105	1	4°C							x	x	x	

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments: 2.8 °C

QC PACKAGE (check below)	
x	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Casey Richardson	5/4/2011	1730
RECEIVED BY		KEITH WIERENGA	5/6/11	1000
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Environmental

Subcontractor:
A & L Great Lakes Agricultural La
3505 Conestoga Dr
Ft. Wayne, IN 46808

TEL: (260) 483-4759
FAX:
Acct #: 91000

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Date: 06-May-11
COC ID: 2910
Due Date 12-May-11

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	1105150	A	Subcontracted Analyses (SUBCONTRACT)
Work Order		Project Number		B	
Company Name	ALS Group USA, Corp	Bill To Company	ALS Group USA, Corp	C	
Send Report To	Ann Preston	Inv Attn	Accounts Payable	D	
Address	3352 128th Avenue	Address	3352 128th Avenue	E	
				F	
City/State/Zip	Holland, Michigan 49424-9263	City/State/Zip	Holland, Michigan 49424-9263	G	
Phone	(616) 399-6070	Phone	(616) 399-6070	H	
Fax	(616) 399-6185	Fax	(616) 399-6185	I	
eMail Address	ann.preston@alsglobal.com	eMail CC		J	

Sample ID	Matrix	Collection Date 24hr	Bottle	A	B	C	D	E	F	G	H	I	J
1105150-01C (Drill Cuttings)	Soil	4/May/2011 10:30	(1) MISC	X									
1105150-05B (Background)	Soil	4/May/2011 11:05	(1) 8OZGNEAT	X									

Comments:

Please run for SAR-EC

Relinquished by:	Date/Time	Received by:	Date/Time	Cooler IDs	Report/QC Level
	5/6/11				Std
Relinquished by:	Date/Time	Received by:	Date/Time		

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **HRL** Date/Time Received: **06-May-11 10:00**

Work Order: **1105150** Received by: **KRW**

Checklist completed by *Keith Werenga* (eSignature) 06-May-11 (Date) Reviewed by: *Ann Preston* (eSignature) 13-May-11 (Date)

Matrices: Soil
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.8 C		
Cooler(s)/Kit(s):			
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction: