



30-Jul-2013

Herman Lucero
HRL Compliance Solutions
2385 F 1/2 Road
Grand Junction, CO 81505

Re: **Caerus Chevron 41-8D 13-199 7/22/13**

Work Order: **1307799**

Dear Herman,

ALS Environmental received 3 samples on 23-Jul-2013 10:00 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 14.

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

Sincerely,

A handwritten signature in cursive script that reads "Ann Preston".

Electronically approved by: Ann Preston

Ann Preston
Project Manager



Certificate No: MN 532786

Report of Laboratory Analysis

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

Environmental ALS

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: HRL Compliance Solutions
Project: Caerus Chevron 41-8D 13-199 7/22/13
Work Order: 1307799

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1307799-01	BKGD 1	Soil		7/22/2013 13:45	7/23/2013 10:00	<input type="checkbox"/>
1307799-02	BKGD 2	Soil		7/22/2013 13:35	7/23/2013 10:00	<input type="checkbox"/>
1307799-03	BKGD 3	Soil		7/22/2013 13:30	7/23/2013 10:00	<input type="checkbox"/>

Client: HRL Compliance Solutions
Project: Caerus Chevron 41-8D 13-199 7/22/13
WorkOrder: 1307799

**QUALIFIERS,
ACRONYMS, UNITS**

<u>Qualifier</u>	<u>Description</u>
*	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

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCS D	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
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
% 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: 30-Jul-13

Client: HRL Compliance Solutions
 Project: Caerus Chevron 41-8D 13-199 7/22/13
 Sample ID: BKGD 1
 Collection Date: 7/22/2013 01:45 PM

Work Order: 1307799
 Lab ID: 1307799-01
 Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A		Prep Date: 7/25/2013	Analyst: ML
Arsenic	39		9.2	mg/Kg-dry	5	7/27/2013 02:20 AM
SOLUBLE CATIONS FOR SAR			SW6020A		Prep Date: 7/25/2013	Analyst: RH
Calcium	81		10	mg/L	20	7/26/2013 03:49 PM
Magnesium	28		4.0	mg/L	20	7/26/2013 03:49 PM
Sodium	120		4.0	mg/L	20	7/26/2013 03:49 PM
SODIUM ADSORPTION RATIO			USDA H60 METHO		Prep Date: 7/25/2013	Analyst: RH
Sodium Adsorption Ratio	2.8		0.010	none	1	7/26/2013
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO		Prep Date: 7/25/2013	Analyst: JB
Electrical Conductivity @ Saturation	1.2		0.050	mmhos/cm @25	10	7/25/2013 03:10 PM
MOISTURE			A2540 G			Analyst: BD
Moisture	82		0.050	% of sample	1	7/23/2013 12:40 PM
PH			SW9045D		Prep Date: 7/23/2013	Analyst: JB
pH	9.1			s.u.	1	7/23/2013 11:00 AM

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

ALS Group USA, Corp

Date: 30-Jul-13

Client: HRL Compliance Solutions**Project:** Caerus Chevron 41-8D 13-199 7/22/13**Work Order:** 1307799**Sample ID:** BKGD 2**Lab ID:** 1307799-02**Collection Date:** 7/22/2013 01:35 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A		Prep Date: 7/25/2013	Analyst: ML
Arsenic	8.3		2.0	mg/Kg-dry	5	7/27/2013 02:44 AM
MOISTURE			A2540 G			Analyst: BD
Moisture	7.3		0.050	% of sample	1	7/23/2013

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

ALS Group USA, Corp

Date: 30-Jul-13

Client: HRL Compliance Solutions**Project:** Caerus Chevron 41-8D 13-199 7/22/13**Work Order:** 1307799**Sample ID:** BKGD 3**Lab ID:** 1307799-03**Collection Date:** 7/22/2013 01:30 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A		Prep Date: 7/25/2013	Analyst: ML
Arsenic	8.6		1.8	mg/Kg-dry	5	7/27/2013 02:50 AM
MOISTURE			A2540 G			Analyst: BD
Moisture	5.2		0.050	% of sample	1	7/23/2013

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

Client: HRL Compliance Solutions

QC BATCH REPORT

Work Order: 1307799

Project: Caerus Chevron 41-8D 13-199 7/22/13

Batch ID: **50013** Instrument ID **ICPMS1** Method: **SW6020A**

MBLK	Sample ID: MBLK-50013-50013				Units: mg/Kg			Analysis Date: 7/26/2013 02:01 PM		
Client ID:	Run ID: ICPMS1_130726A			SeqNo: 2392468		Prep Date: 7/25/2013		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.03916	0.25								J

LCS	Sample ID: LCS-50013-50013				Units: mg/Kg			Analysis Date: 7/26/2013 02:07 PM		
Client ID:	Run ID: ICPMS1_130726A			SeqNo: 2392469		Prep Date: 7/25/2013		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.799	0.25	5	0	96	80-120	0			

MS	Sample ID: 1307769-02BMS				Units: mg/Kg			Analysis Date: 7/26/2013 02:19 PM		
Client ID:	Run ID: ICPMS1_130726A			SeqNo: 2392471		Prep Date: 7/25/2013		DF: 5		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	12.8	1.9	7.418	5.276	101	75-125	0			

MSD	Sample ID: 1307769-02BMSD				Units: mg/Kg			Analysis Date: 7/26/2013 02:25 PM		
Client ID:	Run ID: ICPMS1_130726A			SeqNo: 2392472		Prep Date: 7/25/2013		DF: 5		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	13.82	1.9	7.645	5.276	112	75-125	12.8	7.68	25	

The following samples were analyzed in this batch: 1307799-01A 1307799-02A 1307799-03A

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

Client: HRL Compliance Solutions
Work Order: 1307799
Project: Caerus Chevron 41-8D 13-199 7/22/13

QC BATCH REPORT

Batch ID: **49915** Instrument ID **WETCHEM** Method: **USDA H60 Method**

DUP	Sample ID: 1307634-01B DUP					Units: mmhos/cm @25°C	Analysis Date: 7/25/2013 03:10 PM			
Client ID:	Run ID: WETCHEM_130725J			SeqNo: 2390794	Prep Date: 7/25/2013	DF: 10				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	1.583	0.050	0	0	0		1.847	15.4	50	

The following samples were analyzed in this batch:

Client: HRL Compliance Solutions
Work Order: 1307799
Project: Caerus Chevron 41-8D 13-199 7/22/13

QC BATCH REPORT

Batch ID: **49934** Instrument ID **WETCHEM** Method: **SW9045D**

LCS	Sample ID: LCS-49934-49934		Units: s.u.		Analysis Date: 7/23/2013 11:00 AM					
Client ID:	Run ID: WETCHEM_130723L		SeqNo: 2388161		Prep Date: 7/23/2013 DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH 4.53 0 4.4 0 103 90-110 0

DUP	Sample ID: 1307798-01B DUP		Units: s.u.		Analysis Date: 7/23/2013 11:00 AM					
Client ID:	Run ID: WETCHEM_130723L		SeqNo: 2388163		Prep Date: 7/23/2013 DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH 9.13 0 0 0 0 0-0 9.13 0 20

The following samples were analyzed in this batch:

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

Client: HRL Compliance Solutions
 Work Order: 1307799
 Project: Caerus Chevron 41-8D 13-199 7/22/13

QC BATCH REPORT

Batch ID: **R124049** Instrument ID **MOIST** Method: **A2540 G**

MBLK	Sample ID: WBLKS-R124049		Units: % of sample				Analysis Date: 7/23/2013 12:40 PM			
Client ID:	Run ID: MOIST_130723A		SeqNo: 2388372		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-R124049		Units: % of sample				Analysis Date: 7/23/2013 12:40 PM			
Client ID:	Run ID: MOIST_130723A		SeqNo: 2388371		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: 1307776-06A DUP		Units: % of sample				Analysis Date: 7/23/2013 12:40 PM			
Client ID:	Run ID: MOIST_130723A		SeqNo: 2388357		Prep Date:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 48.63 0.050 0 0 0 0-0 49.35 1.47 20

DUP	Sample ID: 1307798-01B DUP		Units: % of sample				Analysis Date: 7/23/2013 12:40 PM			
Client ID:	Run ID: MOIST_130723A		SeqNo: 2388365		Prep Date:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 19.99 0.050 0 0 0 0-0 20.28 1.44 20

The following samples were analyzed in this batch: 1307799-01A

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

Client: HRL Compliance Solutions
 Work Order: 1307799
 Project: Caerus Chevron 41-8D 13-199 7/22/13

QC BATCH REPORT

Batch ID: **R124058** Instrument ID **MOIST** Method: **A2540 G**

MBLK		Sample ID: WBLKS-R124058				Units: % of sample			Analysis Date: 7/23/2013		
Client ID:		Run ID: MOIST_130723C				SeqNo: 2388576		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-R124058				Units: % of sample			Analysis Date: 7/23/2013		
Client ID:		Run ID: MOIST_130723C				SeqNo: 2388574		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: 1307794-01B DUP				Units: % of sample			Analysis Date: 7/23/2013		
Client ID:		Run ID: MOIST_130723C				SeqNo: 2388528		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 15.1 0.050 0 0 0 0-0 15.45 2.29 20

DUP		Sample ID: 1307801-04A DUP				Units: % of sample			Analysis Date: 7/23/2013		
Client ID:		Run ID: MOIST_130723C				SeqNo: 2388551		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 32.26 0.050 0 0 0 0-0 31.81 1.4 20

The following samples were analyzed in this batch:

1307799-02A	1307799-03A
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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 #	1307799
PAGE	1 of 1

PROJECT NAME		SAMPLER		DATE		TURNAROUND		DISPOSAL											
CAERUS CHEVRON 41-8D		Casey Richardson		7-22-13		5 DAY		Lab or Return to Client											
PROJECT No.		SITE ID		EDD FORMAT		PURCHASE ORDER													
13-199																			
COMPANY NAME		BILL TO COMPANY		INVOICE ATTN TO		ADDRESS		CITY / STATE / ZIP											
HCSI		PDC Energy		Ed Winters		120 Railroad Ave. Suite D		Parachute, CO 81635											
SEND REPORT TO		PHONE		FAX		E-MAIL													
Herman Lucero		970-243-3271		970-243-3280		hlucero@hrlcomp.com													
ADDRESS		CITY / STATE / ZIP		PHONE		FAX		E-MAIL											
2385 F 1/2 Road		Grand Junction, CO. 81505		970-285-9606				ewinters@petd.com											
Lab ID		Field ID		Matrix		Sample Date		Sample Time		# Bottles		Pres.		QC		SAR/EC/PAH		ARSENIC	
1		BKGD 1		SOIL		7-22-13		1345		2		8				X		X	
2		BKGD 2		SOIL		7-22-13		1335		1		8						X	
3		BKGD 3		SOIL		7-22-13		1330		1		8						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:	QC PACKAGE (check below)	
	<input checked="" type="checkbox"/>	LEVEL II (Standard QC)
	<input type="checkbox"/>	LEVEL III (Std QC + forms)
	<input type="checkbox"/>	LEVEL IV (Std QC + forms + raw data)
	<input type="checkbox"/>	

5.02

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	7-22-13	1625
RECEIVED BY		Colby Koerner	7/22/13	1625
RELINQUISHED BY		Colby Koerner	7/22/13	1625
RECEIVED BY	Fed Ex			
RELINQUISHED BY		Diane F Shaw	7/23/13	1000
RECEIVED BY				

Sample Receipt Checklist

Client Name: **HRL**

Date/Time Received: **23-Jul-13 10:00**

Work Order: **1307799**

Received by: **DS**

Checklist completed by *Diane Shaw* 23-Jul-13
eSignature Date

Reviewed by: *Ann Preston* 28-Jul-13
eSignature 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):

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

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:

From: (970) 424-4749
Lab Hub, LLC

Origin ID: RILA



Ship Date: 22JUL13
ActWgt: 80.0 LB
CAD: 103923490/INET3370

Dims: 25 X 14 X 15 IN

127 E First Street
PARACHUTE, CO 81635



J13111302120326

Delivery Address Bar Code



SHIP TO: (616) 399-6070

BILL RECIPIENT

Sample receiving
ALS Holland
3352 128TH AVE

HOLLAND, MI 49424

Ref # 1001-072213-3
Invoice #
PO #
Dept #

TUE - 23 JUL 3:00P
STANDARD OVERNIGHT

TRK# 7962 8879 8431

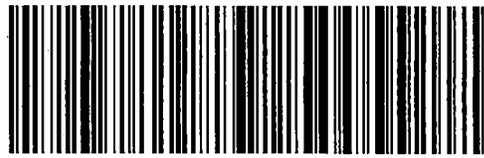
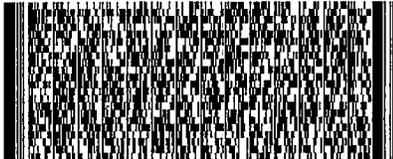
0201

49424

MI-US

GRR

XX GRRR



518G1/AA04/53AB

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