



31-Oct-2019

Kris Rowe
HRL Compliance Solutions, Inc
2385 F 1/2 Road
Grand Junction, CO 81505

Re: **Whiting Petroleum-McIlhenes 67-68 (Pit)**

Work Order: **19102081**

Dear Kris,

ALS Environmental received 4 samples on 26-Oct-2019 10:00 AM for the analyses presented in the following report.

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

Sample results are compliant with industry accepted practices and Quality Control 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 28.

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

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

A handwritten signature in black ink, appearing to read "Chad Whelton".

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

Certificate No: MN 026-999-449

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental 

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RIGHT SOLUTIONS RIGHT PARTNER

Client: HRL Compliance Solutions, Inc
Project: Whiting Petroleum-McIlhenes 67-68 (Pit)
Work Order: 19102081

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>
19102081-01	North Pit Wall @ 4'	Soil		10/25/2019 10:35	10/26/2019 10:00	<input type="checkbox"/>
19102081-02	South Pit Wall @ 4'	Soil		10/25/2019 10:40	10/26/2019 10:00	<input type="checkbox"/>
19102081-03	West Pit Wall @ 4'	Soil		10/25/2019 10:55	10/26/2019 10:00	<input type="checkbox"/>
19102081-04	East Pit Wall @ 4'	Soil		10/25/2019 10:45	10/26/2019 10:00	<input type="checkbox"/>

Client: HRL Compliance Solutions, Inc
Project: Whiting Petroleum-McIlhenes 67-68 (Pit)
Work Order: 19102081

Case Narrative

Batch 144821, Method CR6_7196_S, Sample 19102081-04A: The reporting limit for Hexavalent Chromium is elevated due to dilution needed to eliminate matrix-related interference.

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
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 Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<u>Acronym</u>	<u>Description</u>
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

<u>Units Reported</u>	<u>Description</u>
% of sample	Percent of Sample
°C	Degrees Celcius
µg/Kg-dry	Micrograms per Kilogram Dry Weight
mg/Kg	Milligrams per Kilogram
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

Date: 31-Oct-19

Client: HRL Compliance Solutions, Inc
Project: Whiting Petroleum-McIlhenes 67-68 (Pit)
Sample ID: North Pit Wall @ 4'
Collection Date: 10/25/2019 10:35 AM

Work Order: 19102081
Lab ID: 19102081-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015M		Prep: SW3550 / 10/28/19		Analyst: KB
DRO (C10-C28)	720		3.0	5.2	mg/Kg-dry	1	10/29/2019 14:40
Surr: 4-Terphenyl-d14	85.9			33-111	%REC	1	10/29/2019 14:40
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW5035 / 10/28/19		Analyst: KB
GRO (C6-C10)	U		2.4	5.7	mg/Kg	1	10/29/2019 09:08
Surr: Toluene-d8	98.5			71-123	%REC	1	10/29/2019 09:08
MERCURY BY CVAA							
			Method: SW7471B		Prep: SW7471 / 10/29/19		Analyst: RSB
Mercury	0.032		0.0016	0.016	mg/Kg-dry	1	10/29/2019 17:32
METALS BY ICP-MS							
			Method: SW6020A		Prep: SW3050B / 10/30/19		Analyst: STP
Arsenic	8.7		0.048	0.40	mg/Kg-dry	1	10/30/2019 16:51
Barium	180		3.7	4.0	mg/Kg-dry	10	10/30/2019 18:53
Cadmium	0.68		0.024	0.16	mg/Kg-dry	1	10/30/2019 16:51
Chromium	11		0.18	0.40	mg/Kg-dry	1	10/30/2019 16:51
Copper	13		0.40	0.40	mg/Kg-dry	1	10/30/2019 16:51
Lead	18		0.19	0.40	mg/Kg-dry	1	10/30/2019 16:51
Nickel	22		2.1	4.0	mg/Kg-dry	10	10/30/2019 18:53
Selenium	1.4		0.37	0.40	mg/Kg-dry	1	10/30/2019 16:51
Silver	0.091	J	0.053	0.40	mg/Kg-dry	1	10/30/2019 16:51
Zinc	82		7.9	8.0	mg/Kg-dry	10	10/30/2019 18:53
SOLUBLE CATIONS FOR SAR							
			Method: SW6020A		Prep: USDA Method 20B / 10/30/19		Analyst: STP
Calcium	1,900		25	50	mg/L	100	10/30/2019 16:31
Magnesium	73		0.50	2.0	mg/L	10	10/30/2019 15:40
Sodium	16		0.45	2.0	mg/L	10	10/30/2019 15:40
SODIUM ADSORPTION RATIO							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 10/30/19		Analyst: STP
Sodium Adsorption Ratio	0.098		0.010	0.010	none	1	10/30/2019
SEMI-VOLATILE ORGANIC COMPOUNDS							
			Method: SW846 8270D		Prep: SW3546 / 10/29/19		Analyst: EE
Acenaphthene	U		5.1	7.0	µg/Kg-dry	1	10/30/2019 04:04
Anthracene	U		4.9	7.0	µg/Kg-dry	1	10/30/2019 04:04
Benzo(a)anthracene	U		6.0	7.0	µg/Kg-dry	1	10/30/2019 04:04
Benzo(a)pyrene	U		4.3	7.0	µg/Kg-dry	1	10/30/2019 04:04
Benzo(b)fluoranthene	U		5.2	7.0	µg/Kg-dry	1	10/30/2019 04:04
Benzo(k)fluoranthene	U		5.3	7.0	µg/Kg-dry	1	10/30/2019 04:04
Chrysene	U		5.7	7.0	µg/Kg-dry	1	10/30/2019 04:04
Dibenzo(a,h)anthracene	U		3.8	7.0	µg/Kg-dry	1	10/30/2019 04:04
Fluoranthene	U		3.4	7.0	µg/Kg-dry	1	10/30/2019 04:04

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

ALS Group, USA

Date: 31-Oct-19

Client: HRL Compliance Solutions, Inc
Project: Whiting Petroleum-McIlhenes 67-68 (Pit)
Sample ID: North Pit Wall @ 4'
Collection Date: 10/25/2019 10:35 AM

Work Order: 19102081
Lab ID: 19102081-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	U		5.1	7.0	µg/Kg-dry	1	10/30/2019 04:04
Indeno(1,2,3-cd)pyrene	U		4.9	7.0	µg/Kg-dry	1	10/30/2019 04:04
Naphthalene	100		4.5	7.0	µg/Kg-dry	1	10/30/2019 04:04
Pyrene	U		1.3	7.0	µg/Kg-dry	1	10/30/2019 04:04
Surr: 2-Fluorobiphenyl	68.1			44-107	%REC	1	10/30/2019 04:04
Surr: 4-Terphenyl-d14	63.4			52-123	%REC	1	10/30/2019 04:04
Surr: Nitrobenzene-d5	69.9			41-94	%REC	1	10/30/2019 04:04
VOLATILE ORGANIC COMPOUNDS			Method: SW8260C		Prep: SW5035 / 10/28/19		Analyst: SJB
Benzene	U		0.0058	0.034	mg/Kg	1	10/30/2019 15:46
Ethylbenzene	0.0085	J	0.0072	0.034	mg/Kg	1	10/30/2019 15:46
m,p-Xylene	U		0.045	0.068	mg/Kg	1	10/30/2019 15:46
o-Xylene	0.027	J	0.013	0.034	mg/Kg	1	10/30/2019 15:46
Toluene	U		0.0093	0.034	mg/Kg	1	10/30/2019 15:46
Xylenes, Total	U		0.045	0.10	mg/Kg	1	10/30/2019 15:46
Surr: 1,2-Dichloroethane-d4	101			70-130	%REC	1	10/30/2019 15:46
Surr: 4-Bromofluorobenzene	96.8			70-130	%REC	1	10/30/2019 15:46
Surr: Dibromofluoromethane	84.5			70-130	%REC	1	10/30/2019 15:46
Surr: Toluene-d8	103			70-130	%REC	1	10/30/2019 15:46
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 10/30/19		Analyst: QTN
Electrical Conductivity @ Saturation	9.9		0.011	0.10	mmhos/cm @25°	20	10/30/2019 10:18
CHROMIUM, TRIVALENT			Method: CALCULATION				Analyst: JZB
Chromium, Trivalent	9.6		0.33	1.1	mg/Kg-dry	1	10/31/2019 12:33
CHROMIUM, HEXAVALENT			Method: SW7196A		Prep: SW3060A / 10/29/19		Analyst: RZM
Chromium, Hexavalent	1.0	J	0.91	1.1	mg/Kg-dry	1	10/29/2019 15:55
MOISTURE			Method: SW3550C				Analyst: KTP
Moisture	7.0		0.10	0.10	% of sample	1	10/28/2019 12:56
PH			Method: SW9045D		Prep: EXTRACT / 10/27/19		Analyst: DVD
pH	7.70		0.10	0.100	s.u.	1	10/27/2019 14:00
Temperature	21.2		0.10	0.100	°C	1	10/27/2019 14:00

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

ALS Group, USA

Date: 31-Oct-19

Client: HRL Compliance Solutions, Inc
Project: Whiting Petroleum-McIlhenes 67-68 (Pit)
Sample ID: South Pit Wall @ 4'
Collection Date: 10/25/2019 10:40 AM

Work Order: 19102081
Lab ID: 19102081-02
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015M		Prep: SW3550 / 10/28/19		Analyst: KB
DRO (C10-C28)	140		2.9	5.1	mg/Kg-dry	1	10/29/2019 12:15
Surr: 4-Terphenyl-d14	62.2			33-111	%REC	1	10/29/2019 12:15
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW5035 / 10/28/19		Analyst: KB
GRO (C6-C10)	U		2.6	6.2	mg/Kg	1	10/30/2019 11:50
Surr: Toluene-d8	91.8			71-123	%REC	1	10/30/2019 11:50
MERCURY BY CVAA							
			Method: SW7471B		Prep: SW7471 / 10/29/19		Analyst: RSB
Mercury	0.044		0.0018	0.018	mg/Kg-dry	1	10/29/2019 17:34
METALS BY ICP-MS							
			Method: SW6020A		Prep: SW3050B / 10/30/19		Analyst: STP
Arsenic	5.8		0.053	0.44	mg/Kg-dry	1	10/30/2019 16:53
Barium	170		4.0	4.4	mg/Kg-dry	10	10/30/2019 18:57
Cadmium	0.50		0.026	0.18	mg/Kg-dry	1	10/30/2019 16:53
Chromium	9.4		0.19	0.44	mg/Kg-dry	1	10/30/2019 16:53
Copper	10		0.44	0.44	mg/Kg-dry	1	10/30/2019 16:53
Lead	12		0.21	0.44	mg/Kg-dry	1	10/30/2019 16:53
Nickel	13		0.23	0.44	mg/Kg-dry	1	10/30/2019 16:53
Selenium	0.96		0.40	0.44	mg/Kg-dry	1	10/30/2019 16:53
Silver	0.061	J	0.058	0.44	mg/Kg-dry	1	10/30/2019 16:53
Zinc	54		8.6	8.8	mg/Kg-dry	10	10/30/2019 18:57
SOLUBLE CATIONS FOR SAR							
			Method: SW6020A		Prep: USDA Method 20B / 10/30/19		Analyst: STP
Calcium	1,800		25	50	mg/L	100	10/30/2019 16:33
Magnesium	220		0.50	2.0	mg/L	10	10/30/2019 15:41
Sodium	48		0.45	2.0	mg/L	10	10/30/2019 15:41
SODIUM ADSORPTION RATIO							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 10/30/19		Analyst: STP
Sodium Adsorption Ratio	0.28		0.010	0.010	none	1	10/30/2019
SEMI-VOLATILE ORGANIC COMPOUNDS							
			Method: SW846 8270D		Prep: SW3546 / 10/29/19		Analyst: EE
Acenaphthene	U		5.1	7.0	µg/Kg-dry	1	10/30/2019 04:25
Anthracene	U		4.9	7.0	µg/Kg-dry	1	10/30/2019 04:25
Benzo(a)anthracene	42		6.1	7.0	µg/Kg-dry	1	10/30/2019 04:25
Benzo(a)pyrene	U		4.3	7.0	µg/Kg-dry	1	10/30/2019 04:25
Benzo(b)fluoranthene	U		5.2	7.0	µg/Kg-dry	1	10/30/2019 04:25
Benzo(k)fluoranthene	U		5.3	7.0	µg/Kg-dry	1	10/30/2019 04:25
Chrysene	43		5.7	7.0	µg/Kg-dry	1	10/30/2019 04:25
Dibenzo(a,h)anthracene	U		3.8	7.0	µg/Kg-dry	1	10/30/2019 04:25
Fluoranthene	U		3.4	7.0	µg/Kg-dry	1	10/30/2019 04:25

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

ALS Group, USA

Date: 31-Oct-19

Client: HRL Compliance Solutions, Inc
Project: Whiting Petroleum-McIlhenes 67-68 (Pit)
Sample ID: South Pit Wall @ 4'
Collection Date: 10/25/2019 10:40 AM

Work Order: 19102081
Lab ID: 19102081-02
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	U		5.1	7.0	µg/Kg-dry	1	10/30/2019 04:25
Indeno(1,2,3-cd)pyrene	U		4.9	7.0	µg/Kg-dry	1	10/30/2019 04:25
Naphthalene	73		4.5	7.0	µg/Kg-dry	1	10/30/2019 04:25
Pyrene	60		1.3	7.0	µg/Kg-dry	1	10/30/2019 04:25
Surr: 2-Fluorobiphenyl	66.4			44-107	%REC	1	10/30/2019 04:25
Surr: 4-Terphenyl-d14	60.4			52-123	%REC	1	10/30/2019 04:25
Surr: Nitrobenzene-d5	73.3			41-94	%REC	1	10/30/2019 04:25
VOLATILE ORGANIC COMPOUNDS			Method: SW8260C		Prep: SW5035 / 10/28/19		Analyst: WH
Benzene	U		0.0064	0.037	mg/Kg	1	10/29/2019 02:44
Ethylbenzene	U		0.0079	0.037	mg/Kg	1	10/29/2019 02:44
m,p-Xylene	U		0.050	0.075	mg/Kg	1	10/29/2019 02:44
o-Xylene	U		0.014	0.037	mg/Kg	1	10/29/2019 02:44
Toluene	U		0.010	0.037	mg/Kg	1	10/29/2019 02:44
Xylenes, Total	U		0.050	0.11	mg/Kg	1	10/29/2019 02:44
Surr: 1,2-Dichloroethane-d4	102			70-130	%REC	1	10/29/2019 02:44
Surr: 4-Bromofluorobenzene	103			70-130	%REC	1	10/29/2019 02:44
Surr: Dibromofluoromethane	92.7			70-130	%REC	1	10/29/2019 02:44
Surr: Toluene-d8	96.1			70-130	%REC	1	10/29/2019 02:44
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 10/30/19		Analyst: QTN
Electrical Conductivity @ Saturation	11		0.011	0.10	mmhos/cm @25°	20	10/30/2019 10:18
CHROMIUM, TRIVALENT			Method: CALCULATION				Analyst: JZB
Chromium, Trivalent	9.4		0.33	1.1	mg/Kg-dry	1	10/31/2019 12:33
CHROMIUM, HEXAVALENT			Method: SW7196A		Prep: SW3060A / 10/29/19		Analyst: RZM
Chromium, Hexavalent	U		0.92	1.1	mg/Kg-dry	1	10/29/2019 15:55
MOISTURE			Method: SW3550C				Analyst: KTP
Moisture	6.3		0.10	0.10	% of sample	1	10/28/2019 12:56
PH			Method: SW9045D		Prep: EXTRACT / 10/27/19		Analyst: DVD
pH	7.56		0.10	0.100	s.u.	1	10/27/2019 14:00
Temperature	21.4		0.10	0.100	°C	1	10/27/2019 14:00

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

ALS Group, USA

Date: 31-Oct-19

Client: HRL Compliance Solutions, Inc
Project: Whiting Petroleum-McIlhenes 67-68 (Pit)
Sample ID: West Pit Wall @ 4'
Collection Date: 10/25/2019 10:55 AM

Work Order: 19102081
Lab ID: 19102081-03
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015M		Prep: SW3550 / 10/28/19		Analyst: KB
DRO (C10-C28)	14		2.9	5.1	mg/Kg-dry	1	10/29/2019 15:38
Surr: 4-Terphenyl-d14	60.0			33-111	%REC	1	10/29/2019 15:38
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW5035 / 10/28/19		Analyst: KB
GRO (C6-C10)	U		2.4	5.7	mg/Kg	1	10/30/2019 12:20
Surr: Toluene-d8	96.2			71-123	%REC	1	10/30/2019 12:20
MERCURY BY CVAA							
			Method: SW7471B		Prep: SW7471 / 10/29/19		Analyst: RSB
Mercury	0.015	J	0.0016	0.016	mg/Kg-dry	1	10/29/2019 17:37
METALS BY ICP-MS							
			Method: SW6020A		Prep: SW3050B / 10/30/19		Analyst: STP
Arsenic	6.3		0.049	0.41	mg/Kg-dry	1	10/30/2019 16:59
Barium	400		3.8	4.1	mg/Kg-dry	10	10/30/2019 18:59
Cadmium	0.25		0.025	0.16	mg/Kg-dry	1	10/30/2019 16:59
Chromium	10		0.18	0.41	mg/Kg-dry	1	10/30/2019 16:59
Copper	7.7		0.41	0.41	mg/Kg-dry	1	10/30/2019 16:59
Lead	9.4		0.20	0.41	mg/Kg-dry	1	10/30/2019 16:59
Nickel	13		0.21	0.41	mg/Kg-dry	1	10/30/2019 16:59
Selenium	U		0.38	0.41	mg/Kg-dry	1	10/30/2019 16:59
Silver	U		0.054	0.41	mg/Kg-dry	1	10/30/2019 16:59
Zinc	45		8.0	8.2	mg/Kg-dry	10	10/30/2019 18:59
SOLUBLE CATIONS FOR SAR							
			Method: SW6020A		Prep: USDA Method 20B / 10/30/19		Analyst: STP
Calcium	150		2.5	5.0	mg/L	10	10/30/2019 15:43
Magnesium	20		0.50	2.0	mg/L	10	10/30/2019 15:43
Sodium	13		0.45	2.0	mg/L	10	10/30/2019 15:43
SODIUM ADSORPTION RATIO							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 10/30/19		Analyst: STP
Sodium Adsorption Ratio	0.27		0.010	0.010	none	1	10/30/2019
SEMI-VOLATILE ORGANIC COMPOUNDS							
			Method: SW846 8270D		Prep: SW3546 / 10/29/19		Analyst: EE
Acenaphthene	U		4.9	6.8	µg/Kg-dry	1	10/30/2019 04:47
Anthracene	U		4.8	6.8	µg/Kg-dry	1	10/30/2019 04:47
Benzo(a)anthracene	U		5.9	6.8	µg/Kg-dry	1	10/30/2019 04:47
Benzo(a)pyrene	U		4.2	6.8	µg/Kg-dry	1	10/30/2019 04:47
Benzo(b)fluoranthene	U		5.1	6.8	µg/Kg-dry	1	10/30/2019 04:47
Benzo(k)fluoranthene	U		5.1	6.8	µg/Kg-dry	1	10/30/2019 04:47
Chrysene	U		5.5	6.8	µg/Kg-dry	1	10/30/2019 04:47
Dibenzo(a,h)anthracene	U		3.7	6.8	µg/Kg-dry	1	10/30/2019 04:47
Fluoranthene	U		3.3	6.8	µg/Kg-dry	1	10/30/2019 04:47

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

ALS Group, USA

Date: 31-Oct-19

Client: HRL Compliance Solutions, Inc
Project: Whiting Petroleum-McIlhenes 67-68 (Pit)
Sample ID: West Pit Wall @ 4'
Collection Date: 10/25/2019 10:55 AM

Work Order: 19102081
Lab ID: 19102081-03
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	U		4.9	6.8	µg/Kg-dry	1	10/30/2019 04:47
Indeno(1,2,3-cd)pyrene	U		4.7	6.8	µg/Kg-dry	1	10/30/2019 04:47
Naphthalene	U		4.3	6.8	µg/Kg-dry	1	10/30/2019 04:47
Pyrene	U		1.2	6.8	µg/Kg-dry	1	10/30/2019 04:47
Surr: 2-Fluorobiphenyl	73.2			44-107	%REC	1	10/30/2019 04:47
Surr: 4-Terphenyl-d14	61.4			52-123	%REC	1	10/30/2019 04:47
Surr: Nitrobenzene-d5	72.6			41-94	%REC	1	10/30/2019 04:47
VOLATILE ORGANIC COMPOUNDS			Method: SW8260C		Prep: SW5035 / 10/28/19		Analyst: SJB
Benzene	U		0.0058	0.034	mg/Kg	1	10/30/2019 14:57
Ethylbenzene	U		0.0072	0.034	mg/Kg	1	10/30/2019 14:57
m,p-Xylene	U		0.045	0.068	mg/Kg	1	10/30/2019 14:57
o-Xylene	U		0.013	0.034	mg/Kg	1	10/30/2019 14:57
Toluene	U		0.0093	0.034	mg/Kg	1	10/30/2019 14:57
Xylenes, Total	U		0.045	0.10	mg/Kg	1	10/30/2019 14:57
Surr: 1,2-Dichloroethane-d4	98.2			70-130	%REC	1	10/30/2019 14:57
Surr: 4-Bromofluorobenzene	100			70-130	%REC	1	10/30/2019 14:57
Surr: Dibromofluoromethane	80.5			70-130	%REC	1	10/30/2019 14:57
Surr: Toluene-d8	99.4			70-130	%REC	1	10/30/2019 14:57
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 10/30/19		Analyst: QTN
Electrical Conductivity @ Saturation	1.1		0.011	0.10	mmhos/cm @25°	20	10/30/2019 10:18
CHROMIUM, TRIVALENT			Method: CALCULATION				Analyst: JZB
Chromium, Trivalent	10		0.32	1.0	mg/Kg-dry	1	10/31/2019 12:33
CHROMIUM, HEXAVALENT			Method: SW7196A		Prep: SW3060A / 10/29/19		Analyst: RZM
Chromium, Hexavalent	U		0.83	0.98	mg/Kg-dry	1	10/29/2019 15:55
MOISTURE			Method: SW3550C				Analyst: KTP
Moisture	3.6		0.10	0.10	% of sample	1	10/28/2019 12:56
PH			Method: SW9045D		Prep: EXTRACT / 10/27/19		Analyst: DVD
pH	8.51		0.10	0.100	s.u.	1	10/27/2019 14:00
Temperature	21.5		0.10	0.100	°C	1	10/27/2019 14:00

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

ALS Group, USA

Date: 31-Oct-19

Client: HRL Compliance Solutions, Inc
Project: Whiting Petroleum-McIlhenes 67-68 (Pit)
Sample ID: East Pit Wall @ 4'
Collection Date: 10/25/2019 10:45 AM

Work Order: 19102081
Lab ID: 19102081-04
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015M		Prep: SW3550 / 10/28/19		Analyst: KB
DRO (C10-C28)	280		2.9	5.0	mg/Kg-dry	1	10/29/2019 16:08
Surr: 4-Terphenyl-d14	66.2			33-111	%REC	1	10/29/2019 16:08
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW5035 / 10/28/19		Analyst: KB
GRO (C6-C10)	U		2.4	5.7	mg/Kg	1	10/30/2019 12:50
Surr: Toluene-d8	93.2			71-123	%REC	1	10/30/2019 12:50
MERCURY BY CVAA							
			Method: SW7471B		Prep: SW7471 / 10/29/19		Analyst: RSB
Mercury	0.011	J	0.0016	0.016	mg/Kg-dry	1	10/29/2019 17:39
METALS BY ICP-MS							
			Method: SW6020A		Prep: SW3050B / 10/30/19		Analyst: STP
Arsenic	5.4		0.044	0.37	mg/Kg-dry	1	10/30/2019 17:01
Barium	240		3.4	3.7	mg/Kg-dry	10	10/30/2019 19:01
Cadmium	0.18		0.022	0.15	mg/Kg-dry	1	10/30/2019 17:01
Chromium	6.3		0.16	0.37	mg/Kg-dry	1	10/30/2019 17:01
Copper	6.3		0.37	0.37	mg/Kg-dry	1	10/30/2019 17:01
Lead	8.5		0.18	0.37	mg/Kg-dry	1	10/30/2019 17:01
Nickel	9.9		0.19	0.37	mg/Kg-dry	1	10/30/2019 17:01
Selenium	0.37		0.34	0.37	mg/Kg-dry	1	10/30/2019 17:01
Silver	U		0.048	0.37	mg/Kg-dry	1	10/30/2019 17:01
Zinc	40		7.2	7.3	mg/Kg-dry	10	10/30/2019 19:01
SOLUBLE CATIONS FOR SAR							
			Method: SW6020A		Prep: USDA Method 20B / 10/30/19		Analyst: STP
Calcium	130		2.5	5.0	mg/L	10	10/30/2019 15:46
Magnesium	8.7		0.50	2.0	mg/L	10	10/30/2019 15:46
Sodium	10		0.45	2.0	mg/L	10	10/30/2019 15:46
SODIUM ADSORPTION RATIO							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 10/30/19		Analyst: STP
Sodium Adsorption Ratio	0.23		0.010	0.010	none	1	10/30/2019
SEMI-VOLATILE ORGANIC COMPOUNDS							
			Method: SW846 8270D		Prep: SW3546 / 10/29/19		Analyst: EE
Acenaphthene	U		4.9	6.8	µg/Kg-dry	1	10/30/2019 05:08
Anthracene	U		4.8	6.8	µg/Kg-dry	1	10/30/2019 05:08
Benzo(a)anthracene	U		5.9	6.8	µg/Kg-dry	1	10/30/2019 05:08
Benzo(a)pyrene	U		4.2	6.8	µg/Kg-dry	1	10/30/2019 05:08
Benzo(b)fluoranthene	U		5.1	6.8	µg/Kg-dry	1	10/30/2019 05:08
Benzo(k)fluoranthene	U		5.2	6.8	µg/Kg-dry	1	10/30/2019 05:08
Chrysene	U		5.5	6.8	µg/Kg-dry	1	10/30/2019 05:08
Dibenzo(a,h)anthracene	U		3.7	6.8	µg/Kg-dry	1	10/30/2019 05:08
Fluoranthene	U		3.3	6.8	µg/Kg-dry	1	10/30/2019 05:08

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

ALS Group, USA

Date: 31-Oct-19

Client: HRL Compliance Solutions, Inc
Project: Whiting Petroleum-McIlhenes 67-68 (Pit)
Sample ID: East Pit Wall @ 4'
Collection Date: 10/25/2019 10:45 AM

Work Order: 19102081
Lab ID: 19102081-04
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	U		4.9	6.8	µg/Kg-dry	1	10/30/2019 05:08
Indeno(1,2,3-cd)pyrene	U		4.7	6.8	µg/Kg-dry	1	10/30/2019 05:08
Naphthalene	U		4.4	6.8	µg/Kg-dry	1	10/30/2019 05:08
Pyrene	U		1.2	6.8	µg/Kg-dry	1	10/30/2019 05:08
Surr: 2-Fluorobiphenyl	71.1			44-107	%REC	1	10/30/2019 05:08
Surr: 4-Terphenyl-d14	60.8			52-123	%REC	1	10/30/2019 05:08
Surr: Nitrobenzene-d5	71.8			41-94	%REC	1	10/30/2019 05:08
VOLATILE ORGANIC COMPOUNDS			Method: SW8260C		Prep: SW5035 / 10/28/19		Analyst: SJB
Benzene	U		0.0059	0.034	mg/Kg	1	10/30/2019 15:21
Ethylbenzene	U		0.0073	0.034	mg/Kg	1	10/30/2019 15:21
m,p-Xylene	U		0.046	0.069	mg/Kg	1	10/30/2019 15:21
o-Xylene	U		0.013	0.034	mg/Kg	1	10/30/2019 15:21
Toluene	U		0.0094	0.034	mg/Kg	1	10/30/2019 15:21
Xylenes, Total	U		0.046	0.10	mg/Kg	1	10/30/2019 15:21
Surr: 1,2-Dichloroethane-d4	103			70-130	%REC	1	10/30/2019 15:21
Surr: 4-Bromofluorobenzene	102			70-130	%REC	1	10/30/2019 15:21
Surr: Dibromofluoromethane	85.8			70-130	%REC	1	10/30/2019 15:21
Surr: Toluene-d8	95.8			70-130	%REC	1	10/30/2019 15:21
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 10/30/19		Analyst: QTN
Electrical Conductivity @ Saturation	0.82		0.011	0.10	mmhos/cm @25°	20	10/30/2019 10:18
CHROMIUM, TRIVALENT			Method: CALCULATION				Analyst: JZB
Chromium, Trivalent	6.3		0.32	1.0	mg/Kg-dry	1	10/31/2019 12:33
CHROMIUM, HEXAVALENT			Method: SW7196A		Prep: SW3060A / 10/29/19		Analyst: RZM
Chromium, Hexavalent	U		1.7	2.0	mg/Kg-dry	2	10/29/2019 15:55
MOISTURE			Method: SW3550C				Analyst: KTP
Moisture	4.0		0.10	0.10	% of sample	1	10/28/2019 12:56
PH			Method: SW9045D		Prep: EXTRACT / 10/27/19		Analyst: DVD
pH	8.13		0.10	0.100	s.u.	1	10/27/2019 14:00
Temperature	21.5		0.10	0.100	°C	1	10/27/2019 14:00

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

Client: HRL Compliance Solutions, Inc

QC BATCH REPORT

Work Order: 19102081

Project: Whiting Petroleum-McIlhenes 67-68 (Pit)

Batch ID: 144703

Instrument ID GC8

Method: SW8015M

MBLK		Sample ID: DBLKS1-144703-144703				Units: mg/Kg		Analysis Date: 10/29/2019 10:18 A		
Client ID:		Run ID: GC8_191029A				SeqNo: 6019614		Prep Date: 10/28/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)

U 5.0

Surr: 4-Terphenyl-d14

2.095 0 3.33 0 62.9 33-111 0

LCS		Sample ID: DLCSS1-144703-144703				Units: mg/Kg		Analysis Date: 10/29/2019 10:47 A		
Client ID:		Run ID: GC8_191029A				SeqNo: 6019616		Prep Date: 10/28/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)

305.7 5.0 333 0 91.8 58-111 0

Surr: 4-Terphenyl-d14

1.71 0 3.33 0 51.4 33-111 0

MS		Sample ID: 19102081-02A MS				Units: mg/Kg		Analysis Date: 10/29/2019 12:44 P		
Client ID: South Pit Wall @ 4'		Run ID: GC8_191029A				SeqNo: 6019622		Prep Date: 10/28/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)

461.3 4.9 325.6 127.6 102 58-111 0

Surr: 4-Terphenyl-d14

1.906 0 3.256 0 58.5 33-111 0

MSD		Sample ID: 19102081-02A MSD				Units: mg/Kg		Analysis Date: 10/29/2019 01:13 P		
Client ID: South Pit Wall @ 4'		Run ID: GC8_191029A				SeqNo: 6019623		Prep Date: 10/28/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)

422.3 4.8 323 127.6 91.2 58-111 461.3 8.84 30

Surr: 4-Terphenyl-d14

1.867 0 3.23 0 57.8 33-111 1.906 2.09 30

The following samples were analyzed in this batch:

19102081-01A	19102081-02A	19102081-03A
19102081-04A		

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

Client: HRL Compliance Solutions, Inc
Work Order: 19102081
Project: Whiting Petroleum-McIlhenes 67-68 (Pit)

QC BATCH REPORT

Batch ID: **144709** Instrument ID **GC10** Method: **SW8015D**

MBLK		Sample ID: MBLK-144709-144709				Units: µg/Kg-dry		Analysis Date: 10/29/2019 05:09 A		
Client ID:		Run ID: GC10_191028A				SeqNo: 6019186		Prep Date: 10/28/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	U	5,000								
<i>Surr: Toluene-d8</i>	5114	0	5000	0	102	71-123	0			

LCS		Sample ID: LCS-144709-144709				Units: µg/Kg-dry		Analysis Date: 10/29/2019 04:39 A		
Client ID:		Run ID: GC10_191028A				SeqNo: 6019185		Prep Date: 10/28/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	407800	5,000	500000	0	81.6	71-123	0			
<i>Surr: Toluene-d8</i>	5500	0	5000	0	110	71-123	0			

MS		Sample ID: 19102081-01A MS				Units: µg/Kg-dry		Analysis Date: 10/29/2019 09:38 A		
Client ID: North Pit Wall @ 4'		Run ID: GC10_191028A				SeqNo: 6019194		Prep Date: 10/28/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	533500	6,000	603600	0	88.4	71-123	0			
<i>Surr: Toluene-d8</i>	6522	0	6036	0	108	71-123	0			

MSD		Sample ID: 19102081-01A MSD				Units: µg/Kg-dry		Analysis Date: 10/29/2019 10:08 A		
Client ID: North Pit Wall @ 4'		Run ID: GC10_191028A				SeqNo: 6019195		Prep Date: 10/28/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	530500	5,700	567300	0	93.5	71-123	533500	0.559	30	
<i>Surr: Toluene-d8</i>	5742	0	5673	0	101	71-123	6522	12.7	30	

The following samples were analyzed in this batch:

19102081-01A	19102081-02A	19102081-03A
19102081-04A		

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

Client: HRL Compliance Solutions, Inc
Work Order: 19102081
Project: Whiting Petroleum-McIlhenes 67-68 (Pit)

QC BATCH REPORT

Batch ID: **144788** Instrument ID **HG4** Method: **SW7471B**

MBLK		Sample ID: MBLK-144788-144788				Units: mg/Kg		Analysis Date: 10/29/2019 04:43 P		
Client ID:		Run ID: HG4_191029A				SeqNo: 6021254		Prep Date: 10/29/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury U 0.020

LCS		Sample ID: LCS-144788-144788				Units: mg/Kg		Analysis Date: 10/29/2019 04:45 P		
Client ID:		Run ID: HG4_191029A				SeqNo: 6021256		Prep Date: 10/29/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1769 0.020 0.1665 0 106 80-120 0

MS		Sample ID: 19101628-01CMS				Units: mg/Kg		Analysis Date: 10/29/2019 04:51 P		
Client ID:		Run ID: HG4_191029A				SeqNo: 6021261		Prep Date: 10/29/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1844 0.017 0.1446 0.04369 97.3 75-125 0

MSD		Sample ID: 19101628-01CMSD				Units: mg/Kg		Analysis Date: 10/29/2019 04:53 P		
Client ID:		Run ID: HG4_191029A				SeqNo: 6021263		Prep Date: 10/29/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1664 0.016 0.1363 0.04369 90.1 75-125 0.1844 10.2 35

The following samples were analyzed in this batch:

19102081-01A	19102081-02A	19102081-03A
19102081-04A		

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

Client: HRL Compliance Solutions, Inc
Work Order: 19102081
Project: Whiting Petroleum-McHenes 67-68 (Pit)

QC BATCH REPORT

Batch ID: **144829** Instrument ID **ICPMS3** Method: **SW6020A**

DUP		Sample ID: 19102081-03ADUP				Units: mg/L		Analysis Date: 10/30/2019 03:45 P		
Client ID: West Pit Wall @ 4'			Run ID: ICPMS3_191030A			SeqNo: 6022979		Prep Date: 10/30/2019		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	132.1	5.0	0	0	0	0-0	146.3	10.2		
Magnesium	18.08	2.0	0	0	0	0-0	20.15	10.9		
Sodium	11.94	2.0	0	0	0	0-0	13.33	11		

The following samples were analyzed in this batch:

19102081-01A	19102081-02A	19102081-03A
19102081-04A		

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

Client: HRL Compliance Solutions, Inc
Work Order: 19102081
Project: Whiting Petroleum-McIlhenes 67-68 (Pit)

QC BATCH REPORT

Batch ID: **144854** Instrument ID **ICPMS3** Method: **SW6020A**

MBLK		Sample ID: MBLK-144854-144854				Units: mg/Kg		Analysis Date: 10/30/2019 04:38 P		
Client ID:		Run ID: ICPMS3_191030B				SeqNo: 6023330		Prep Date: 10/30/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.25								
Barium	U	0.25								
Cadmium	U	0.10								
Chromium	U	0.25								
Copper	U	0.25								
Lead	U	0.25								
Nickel	U	0.25								
Selenium	U	0.25								
Silver	U	0.25								
Zinc	U	0.50								

LCS		Sample ID: LCS-144854-144854				Units: mg/Kg		Analysis Date: 10/30/2019 04:40 P		
Client ID:		Run ID: ICPMS3_191030B				SeqNo: 6023333		Prep Date: 10/30/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.921	0.25	5	0	98.4	80-120	0			
Barium	5.149	0.25	5	0	103	80-120	0			
Cadmium	4.93	0.10	5	0	98.6	80-120	0			
Chromium	5.081	0.25	5	0	102	80-120	0			
Copper	5.018	0.25	5	0	100	80-120	0			
Lead	5.057	0.25	5	0	101	80-120	0			
Nickel	4.948	0.25	5	0	99	80-120	0			
Selenium	4.889	0.25	5	0	97.8	80-120	0			
Silver	5.156	0.25	5	0	103	80-120	0			
Zinc	5.087	0.50	5	0	102	80-120	0			

MS		Sample ID: 19102263-02AMS				Units: mg/Kg		Analysis Date: 10/30/2019 05:09 P		
Client ID:		Run ID: ICPMS3_191030B				SeqNo: 6023377		Prep Date: 10/30/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	17.63	0.40	7.974	9.932	96.6	75-125	0			
Barium	93.35	0.40	7.974	76.82	207	75-125	0			SO
Cadmium	7.244	0.16	7.974	0.1414	89.1	75-125	0			
Chromium	21.97	0.40	7.974	12.08	124	75-125	0			
Copper	22.7	0.40	7.974	16.83	73.6	75-125	0			S
Lead	95.29	0.40	7.974	96.5	-15.2	75-125	0			SO
Nickel	20.93	0.40	7.974	11.44	119	75-125	0			
Selenium	7.919	0.40	7.974	0.7239	90.2	75-125	0			
Silver	7.342	0.40	7.974	0.04176	91.5	75-125	0			
Zinc	187.9	0.80	7.974	175.8	152	75-125	0			SEO

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

Client: HRL Compliance Solutions, Inc
Work Order: 19102081
Project: Whiting Petroleum-McIlhenes 67-68 (Pit)

QC BATCH REPORT

Batch ID: **144854** Instrument ID **ICPMS3** Method: **SW6020A**

MSD		Sample ID: 19102263-02AMSD				Units: mg/Kg		Analysis Date: 10/30/2019 05:10 P		
Client ID:		Run ID: ICPMS3_191030B				SeqNo: 6023379		Prep Date: 10/30/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	17.41	0.41	8.104	9.932	92.2	75-125	17.63	1.31	20	
Barium	93.37	0.41	8.104	76.82	204	75-125	93.35	0.0199	20	SO
Cadmium	7.256	0.16	8.104	0.1414	87.8	75-125	7.244	0.164	20	
Chromium	21.73	0.41	8.104	12.08	119	75-125	21.97	1.11	20	
Copper	22.35	0.41	8.104	16.83	68.1	75-125	22.7	1.53	20	S
Lead	97.62	0.41	8.104	96.5	13.8	75-125	95.29	2.41	20	SO
Nickel	20.66	0.41	8.104	11.44	114	75-125	20.93	1.28	20	
Selenium	8.229	0.41	8.104	0.7239	92.6	75-125	7.919	3.83	20	
Silver	7.412	0.41	8.104	0.04176	90.9	75-125	7.342	0.945	20	
Zinc	219.9	0.81	8.104	175.8	545	75-125	187.9	15.7	20	SEO

The following samples were analyzed in this batch:

19102081-01A	19102081-02A	19102081-03A
19102081-04A		

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

Client: HRL Compliance Solutions, Inc
Work Order: 19102081
Project: Whiting Petroleum-McIlhenes 67-68 (Pit)

QC BATCH REPORT

Batch ID: **144829** Instrument ID **SAR** Method: **USDA H60 Metho**

DUP		Sample ID: 19102081-03ADUP				Units: none		Analysis Date: 10/30/2019		
Client ID: West Pit Wall @ 4'			Run ID: SAR_191030A			SeqNo: 6023286		Prep Date: 10/30/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	0.2584	0.010	0	0	0		0.274	5.83	50	

The following samples were analyzed in this batch:

19102081-01A	19102081-02A	19102081-03A
19102081-04A		

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

Client: HRL Compliance Solutions, Inc
Work Order: 19102081
Project: Whiting Petroleum-McIlhenes 67-68 (Pit)

QC BATCH REPORT

Batch ID: **144716** Instrument ID **SVMS7** Method: **SW846 8270D**

MBLK				Sample ID: SBLKS1-144716-144716				Units: µg/Kg			Analysis Date: 10/29/2019 08:50 P		
Client ID:			Run ID: SVMS7_191029B				SeqNo: 6024981			Prep Date: 10/29/2019		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Acenaphthene	U	6.7											
Anthracene	U	6.7											
Benzo(a)anthracene	U	6.7											
Benzo(a)pyrene	U	6.7											
Benzo(b)fluoranthene	U	6.7											
Benzo(k)fluoranthene	U	6.7											
Chrysene	U	6.7											
Dibenzo(a,h)anthracene	U	6.7											
Fluoranthene	U	6.7											
Fluorene	U	6.7											
Indeno(1,2,3-cd)pyrene	U	6.7											
Naphthalene	U	6.7											
Pyrene	U	6.7											
Surr: 2-Fluorobiphenyl	2727	0	3333	0	81.8	44-107		0					
Surr: 4-Terphenyl-d14	2245	0	3333	0	67.4	52-123		0					
Surr: Nitrobenzene-d5	2622	0	3333	0	78.7	41-94		0					

LCS				Sample ID: SLCSS1-144716-144716				Units: µg/Kg		Analysis Date: 10/29/2019 09:12 P	
Client ID:			Run ID: SVMS7_191029B			SeqNo: 6024982		Prep Date: 10/29/2019		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1155	6.7	1333	0	86.6	55-101	0				
Anthracene	1209	6.7	1333	0	90.7	67-105	0				
Benzo(a)anthracene	1260	6.7	1333	0	94.5	68-105	0				
Benzo(a)pyrene	1283	6.7	1333	0	96.3	68-110	0				
Benzo(b)fluoranthene	1239	6.7	1333	0	92.9	65-110	0				
Benzo(k)fluoranthene	1228	6.7	1333	0	92.1	66-113	0				
Chrysene	1271	6.7	1333	0	95.4	68-108	0				
Dibenzo(a,h)anthracene	1227	6.7	1333	0	92.1	62-119	0				
Fluoranthene	1261	6.7	1333	0	94.6	67-106	0				
Fluorene	1207	6.7	1333	0	90.6	59-107	0				
Indeno(1,2,3-cd)pyrene	1195	6.7	1333	0	89.6	56-120	0				
Naphthalene	1189	6.7	1333	0	89.2	46-98	0				
Pyrene	1171	6.7	1333	0	87.8	60-119	0				
Surr: 2-Fluorobiphenyl	2787	0	3333	0	83.6	44-107	0				
Surr: 4-Terphenyl-d14	2249	0	3333	0	67.5	52-123	0				
Surr: Nitrobenzene-d5	2805	0	3333	0	84.2	41-94	0				

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

Client: HRL Compliance Solutions, Inc
Work Order: 19102081
Project: Whiting Petroleum-McIlhenes 67-68 (Pit)

QC BATCH REPORT

Batch ID: **144716** Instrument ID **SVMS7** Method: **SW846 8270D**

MS				Sample ID: 19101993-01C MS			Units: µg/Kg		Analysis Date: 10/29/2019 09:34 P		
Client ID:			Run ID: SVMS7_191029B			SeqNo: 6024983		Prep Date: 10/29/2019		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1148	6.5	1296	0	88.6	55-101		0			
Anthracene	1121	6.5	1296	0	86.5	67-105		0			
Benzo(a)anthracene	1193	6.5	1296	0	92.1	68-105		0			
Benzo(a)pyrene	1213	6.5	1296	0	93.6	68-110		0			
Benzo(b)fluoranthene	1193	6.5	1296	0	92.1	65-110		0			
Benzo(k)fluoranthene	1140	6.5	1296	0	88	66-113		0			
Chrysene	1211	6.5	1296	0	93.5	68-108		0			
Dibenzo(a,h)anthracene	1177	6.5	1296	0	90.8	62-119		0			
Fluoranthene	1164	6.5	1296	0	89.8	67-106		0			
Fluorene	1191	6.5	1296	0	91.9	59-107		0			
Indeno(1,2,3-cd)pyrene	1237	6.5	1296	0	95.4	56-120		0			
Naphthalene	1052	6.5	1296	0	81.2	46-98		0			
Pyrene	1126	6.5	1296	0	86.9	60-119		0			
Surr: 2-Fluorobiphenyl	2605	0	3240	0	80.4	44-107		0			
Surr: 4-Terphenyl-d14	2211	0	3240	0	68.2	52-123		0			
Surr: Nitrobenzene-d5	2734	0	3240	0	84.4	41-94		0			

MSD				Sample ID: 19101993-01C MSD			Units: µg/Kg		Analysis Date: 10/29/2019 09:56 P		
Client ID:		Run ID: SVMS7_191029B			SeqNo: 6024984		Prep Date: 10/29/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1128	6.3	1264	0	89.3	55-101	1148	1.72	30		
Anthracene	1152	6.3	1264	0	91.2	67-105	1121	2.79	30		
Benzo(a)anthracene	1193	6.3	1264	0	94.4	68-105	1193	0.0408	30		
Benzo(a)pyrene	1226	6.3	1264	0	97	68-110	1213	1.06	30		
Benzo(b)fluoranthene	1210	6.3	1264	0	95.8	65-110	1193	1.43	30		
Benzo(k)fluoranthene	1135	6.3	1264	0	89.8	66-113	1140	0.427	30		
Chrysene	1172	6.3	1264	0	92.7	68-108	1211	3.31	30		
Dibenzo(a,h)anthracene	1169	6.3	1264	0	92.5	62-119	1177	0.708	30		
Fluoranthene	1263	6.3	1264	0	99.9	67-106	1164	8.15	30		
Fluorene	1114	6.3	1264	0	88.1	59-107	1191	6.67	30		
Indeno(1,2,3-cd)pyrene	1246	6.3	1264	0	98.6	56-120	1237	0.79	30		
Naphthalene	1037	6.3	1264	0	82.1	46-98	1052	1.41	30		
Pyrene	1120	6.3	1264	0	88.6	60-119	1126	0.571	30		
Surr: 2-Fluorobiphenyl	2495	0	3160	0	79	44-107	2605	4.32	40		
Surr: 4-Terphenyl-d14	2025	0	3160	0	64.1	52-123	2211	8.76	40		
Surr: Nitrobenzene-d5	2653	0	3160	0	83.9	41-94	2734	3.03	40		

The following samples were analyzed in this batch:

19102081-01A	19102081-02A	19102081-03A
19102081-04A		

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

Client: HRL Compliance Solutions, Inc
 Work Order: 19102081
 Project: Whiting Petroleum-McIlhenes 67-68 (Pit)

QC BATCH REPORT

Batch ID: **144707** Instrument ID **VMS8** Method: **SW8260C**

MBLK		Sample ID: MBLK-144707-144707				Units: µg/Kg-dry		Analysis Date: 10/31/2019 05:02 A		
Client ID:		Run ID: VMS8_191030A				SeqNo: 6024580		Prep Date: 10/28/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	U	30								
Ethylbenzene	U	30								
m,p-Xylene	U	60								
o-Xylene	U	30								
Toluene	U	30								
Xylenes, Total	U	90								
Surr: 1,2-Dichloroethane-d4	999.5	0	1000	0	100	70-130	0			
Surr: 4-Bromofluorobenzene	994	0	1000	0	99.4	70-130	0			
Surr: Dibromofluoromethane	992	0	1000	0	99.2	70-130	0			
Surr: Toluene-d8	1016	0	1000	0	102	70-130	0			

LCS		Sample ID: LCS-144707-144707				Units: µg/Kg-dry		Analysis Date: 10/31/2019 04:10 A		
Client ID:		Run ID: VMS8_191030A				SeqNo: 6024579		Prep Date: 10/28/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1016	30	1000	0	102	75-125	0			
Ethylbenzene	1052	30	1000	0	105	75-125	0			
m,p-Xylene	2088	60	2000	0	104	80-125	0			
o-Xylene	1074	30	1000	0	107	75-125	0			
Toluene	1044	30	1000	0	104	70-125	0			
Xylenes, Total	3162	90	3000	0	105	75-125	0			
Surr: 1,2-Dichloroethane-d4	994.5	0	1000	0	99.4	70-130	0			
Surr: 4-Bromofluorobenzene	967	0	1000	0	96.7	70-130	0			
Surr: Dibromofluoromethane	983	0	1000	0	98.3	70-130	0			
Surr: Toluene-d8	1009	0	1000	0	101	70-130	0			

The following samples were analyzed in this batch:

19102081-01A	19102081-02A	19102081-03A
19102081-04A		

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

Client: HRL Compliance Solutions, Inc
Work Order: 19102081
Project: Whiting Petroleum-McIlhenes 67-68 (Pit)

QC BATCH REPORT

Batch ID: **144678** Instrument ID **WETCHEM** Method: **SW9045D**

LCS				Sample ID: LCS-144678-144678				Units: s.u.			Analysis Date: 10/27/2019 02:00 P			
Client ID:				Run ID: WETCHEM_191027G				SeqNo: 6014561			Prep Date: 10/27/2019		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			

pH 3.95 0.10 4 0 98.8 90-110 0

LCS		Sample ID: LCS-144678-144678					Units: s.u.		Analysis Date: 10/27/2019 02:00 P	
Client ID:		Run ID: WETCHEM_191027G			SeqNo: 6015430		Prep Date: 10/27/2019		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH 3.95 0.10 4 0 98.8 90-110 0

DUP				Sample ID: 19102078-01A DUP				Units: s.u.			Analysis Date: 10/27/2019 02:00 P			
Client ID:				Run ID: WETCHEM_191027G				SeqNo: 6014564			Prep Date: 10/27/2019		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

pH 7.8 0.10 0 0 0 0-0 7.64 2.07 20
 Temperature 21.1 0.10 0 0 0 21.3 0.943

The following samples were analyzed in this batch:

19102081-01A	19102081-02A	19102081-03A
19102081-04A		

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

Client: HRL Compliance Solutions, Inc
Work Order: 19102081
Project: Whiting Petroleum-McIlhenes 67-68 (Pit)

QC BATCH REPORT

Batch ID: **144821** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK		Sample ID: MBLK-144821-144821				Units: mg/Kg		Analysis Date: 10/29/2019 03:55 P		
Client ID:		Run ID: WETCHEM_191029L		SeqNo: 6020103		Prep Date: 10/29/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent U 1.0

LCS		Sample ID: LCS-144821-144821				Units: mg/Kg		Analysis Date: 10/29/2019 03:55 P		
Client ID:		Run ID: WETCHEM_191029L		SeqNo: 6020104		Prep Date: 10/29/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.8 1.0 5 0 96 80-120 0

MS		Sample ID: 19102078-01A MS				Units: mg/Kg		Analysis Date: 10/29/2019 03:55 P		
Client ID:		Run ID: WETCHEM_191029L		SeqNo: 6020109		Prep Date: 10/29/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.8 1.0 5 0.6733 82.5 75-125 0

MS		Sample ID: 19102078-01A MSI				Units: mg/Kg		Analysis Date: 10/29/2019 03:55 P		
Client ID:		Run ID: WETCHEM_191029L		SeqNo: 6020111		Prep Date: 10/29/2019		DF: 100		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 2422 100 2349 0.6733 103 75-125 0

MSD		Sample ID: 19102078-01A MSD				Units: mg/Kg		Analysis Date: 10/29/2019 03:55 P		
Client ID:		Run ID: WETCHEM_191029L		SeqNo: 6020110		Prep Date: 10/29/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 5.111 1.0 5.051 0.6733 87.9 75-125 4.8 6.28 20

The following samples were analyzed in this batch:

19102081-01A	19102081-02A	19102081-03A
19102081-04A		

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

Client: HRL Compliance Solutions, Inc
Work Order: 19102081
Project: Whiting Petroleum-McIlhenes 67-68 (Pit)

QC BATCH REPORT

Batch ID: **R274011** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R274011				Units: % of sample		Analysis Date: 10/28/2019 12:56 P			
Client ID:		Run ID: MOIST_191028C		SeqNo: 6018570		Prep Date:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture U 0.10

LCS		Sample ID: LCS-R274011				Units: % of sample		Analysis Date: 10/28/2019 12:56 P			
Client ID:		Run ID: MOIST_191028C		SeqNo: 6018569		Prep Date:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 100 0.10 100 0 100 98-102 0

DUP		Sample ID: 19101932-04B DUP				Units: % of sample		Analysis Date: 10/28/2019 12:56 P			
Client ID:		Run ID: MOIST_191028C		SeqNo: 6018551		Prep Date:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 5.43 0.10 0 0 0 0-0 5.67 4.32 10

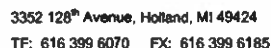
DUP		Sample ID: 19101968-02B DUP				Units: % of sample		Analysis Date: 10/28/2019 12:56 P			
Client ID:		Run ID: MOIST_191028C		SeqNo: 6018556		Prep Date:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 14.51 0.10 0 0 0 0-0 14.77 1.78 10

The following samples were analyzed in this batch:

19102081-01A	19102081-02A	19102081-03A
19102081-04A		

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





1910208

Form 202r0

1 of 1

*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.

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Matt Smith	10/25/2019	1700
RECEIVED BY		Diane F. Shew	10/26/19	1000
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

Sample Receipt Checklist

Client Name: **HRL**

Date/Time Received: **26-Oct-19 10:00**

Work Order: **19102081**

Received by: **DS**

Checklist completed by Diane Shaw
eSignature

26-Oct-19
Date

Reviewed by: Chad Whelton
eSignature

28-Oct-19
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>3.2/3.2 c</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>10/26/2019 11:27:37 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: