



31-Oct-2019

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

Re: **Whiting Petroleum-Equity Federal 1-7 (spill)**

Work Order: **19102078**

Dear Kris,

ALS Environmental received 2 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 22.

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-Equity Federal 1-7 (spill)
Work Order: 19102078

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> |
|--------------------|---------------------------------|---------------|-------------------|------------------------|----------------------|--------------------------|
| 19102078-01 | Inside Containment (North) @ 3' | Soil | | 10/25/2019 09:20 | 10/26/2019 10:00 | <input type="checkbox"/> |
| 19102078-02 | Inside Containment (South) @ 3' | Soil | | 10/25/2019 09:00 | 10/26/2019 10:00 | <input type="checkbox"/> |

| <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-Equity Federal 1-7 (spill)
Sample ID: Inside Containment (North) @ 3'
Collection Date: 10/25/2019 09:20 AM

Work Order: 19102078
Lab ID: 19102078-01
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) | 110 | | 3.2 | 5.7 | mg/Kg-dry | 1 | 10/29/2019 11:17 |
| Surr: 4-Terphenyl-d14 | 63.2 | | | 33-111 | %REC | 1 | 10/29/2019 11:17 |
| GASOLINE RANGE ORGANICS BY GC-FID | | | | | | | |
| | | | Method: SW8015D | | Prep: SW5035 / 10/28/19 | | Analyst: KB |
| GRO (C6-C10) | 4.0 | J | 2.9 | 6.8 | mg/Kg | 1 | 10/29/2019 07:38 |
| Surr: Toluene-d8 | 96.0 | | | 71-123 | %REC | 1 | 10/29/2019 07:38 |
| MERCURY BY CVAA | | | | | | | |
| | | | Method: SW7471B | | Prep: SW7471 / 10/28/19 | | Analyst: RSB |
| Mercury | 0.042 | | 0.0021 | 0.021 | mg/Kg-dry | 1 | 10/29/2019 11:24 |
| METALS BY ICP-MS | | | | | | | |
| | | | Method: SW6020A | | Prep: SW3050B / 10/30/19 | | Analyst: STP |
| Arsenic | 6.0 | | 0.052 | 0.43 | mg/Kg-dry | 1 | 10/30/2019 16:41 |
| Barium | 130 | | 0.40 | 0.43 | mg/Kg-dry | 1 | 10/30/2019 16:41 |
| Cadmium | 0.17 | J | 0.026 | 0.17 | mg/Kg-dry | 1 | 10/30/2019 16:41 |
| Chromium | 11 | | 0.19 | 0.43 | mg/Kg-dry | 1 | 10/30/2019 16:41 |
| Copper | 12 | | 0.43 | 0.43 | mg/Kg-dry | 1 | 10/30/2019 16:41 |
| Lead | 17 | | 0.21 | 0.43 | mg/Kg-dry | 1 | 10/30/2019 16:41 |
| Nickel | 14 | | 0.22 | 0.43 | mg/Kg-dry | 1 | 10/30/2019 16:41 |
| Selenium | 1.4 | | 0.40 | 0.43 | mg/Kg-dry | 1 | 10/30/2019 16:41 |
| Silver | 0.086 | J | 0.057 | 0.43 | mg/Kg-dry | 1 | 10/30/2019 16:41 |
| Zinc | 72 | | 8.4 | 8.6 | mg/Kg-dry | 10 | 10/30/2019 18:49 |
| SOLUBLE CATIONS FOR SAR | | | | | | | |
| | | | Method: SW6020A | | Prep: USDA Method 20B / 10/30/19 | | Analyst: STP |
| Calcium | 720 | | 2.5 | 5.0 | mg/L | 10 | 10/30/2019 15:32 |
| Magnesium | 210 | | 0.50 | 2.0 | mg/L | 10 | 10/30/2019 15:32 |
| Sodium | 320 | | 0.45 | 2.0 | mg/L | 10 | 10/30/2019 15:32 |
| SODIUM ADSORPTION RATIO | | | | | | | |
| | | | Method: USDA H60 METHOD 2 | | Prep: USDA Method 20B / 10/30/19 | | Analyst: STP |
| Sodium Adsorption Ratio | 2.7 | | 0.010 | 0.010 | none | 1 | 10/30/2019 |
| SEMI-VOLATILE ORGANIC COMPOUNDS | | | | | | | |
| | | | Method: SW846 8270D | | Prep: SW3546 / 10/28/19 | | Analyst: EE |
| Acenaphthene | U | | 5.5 | 7.6 | µg/Kg-dry | 1 | 10/28/2019 19:17 |
| Anthracene | U | | 5.3 | 7.6 | µg/Kg-dry | 1 | 10/28/2019 19:17 |
| Benzo(a)anthracene | U | | 6.5 | 7.6 | µg/Kg-dry | 1 | 10/28/2019 19:17 |
| Benzo(a)pyrene | U | | 4.6 | 7.6 | µg/Kg-dry | 1 | 10/28/2019 19:17 |
| Benzo(b)fluoranthene | U | | 5.6 | 7.6 | µg/Kg-dry | 1 | 10/28/2019 19:17 |
| Benzo(k)fluoranthene | U | | 5.7 | 7.6 | µg/Kg-dry | 1 | 10/28/2019 19:17 |
| Chrysene | U | | 6.1 | 7.6 | µg/Kg-dry | 1 | 10/28/2019 19:17 |
| Dibenzo(a,h)anthracene | U | | 4.1 | 7.6 | µg/Kg-dry | 1 | 10/28/2019 19:17 |
| Fluoranthene | U | | 3.6 | 7.6 | µg/Kg-dry | 1 | 10/28/2019 19:17 |

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-Equity Federal 1-7 (spill)
Sample ID: Inside Containment (North) @ 3'
Collection Date: 10/25/2019 09:20 AM

Work Order: 19102078
Lab ID: 19102078-01
Matrix: SOIL

| Analyses | Result | Qual | MDL | Report Limit | Units | Dilution Factor | Date Analyzed |
|--------------------------------------|--------|------|----------------------------------|--------------|----------------------------------|-----------------|---------------------|
| Fluorene | U | | 5.5 | 7.6 | µg/Kg-dry | 1 | 10/28/2019 19:17 |
| Indeno(1,2,3-cd)pyrene | U | | 5.3 | 7.6 | µg/Kg-dry | 1 | 10/28/2019 19:17 |
| Naphthalene | U | | 4.8 | 7.6 | µg/Kg-dry | 1 | 10/28/2019 19:17 |
| Pyrene | U | | 1.4 | 7.6 | µg/Kg-dry | 1 | 10/28/2019 19:17 |
| Surr: 2-Fluorobiphenyl | 75.7 | | | 44-107 | %REC | 1 | 10/28/2019 19:17 |
| Surr: 4-Terphenyl-d14 | 61.5 | | | 52-123 | %REC | 1 | 10/28/2019 19:17 |
| Surr: Nitrobenzene-d5 | 58.1 | | | 41-94 | %REC | 1 | 10/28/2019 19:17 |
| VOLATILE ORGANIC COMPOUNDS | | | Method: SW8260C | | Prep: SW5035 / 10/28/19 | | Analyst: WH |
| Benzene | U | | 0.0053 | 0.031 | mg/Kg | 1 | 10/29/2019 03:01 |
| Ethylbenzene | U | | 0.0066 | 0.031 | mg/Kg | 1 | 10/29/2019 03:01 |
| m,p-Xylene | U | | 0.041 | 0.062 | mg/Kg | 1 | 10/29/2019 03:01 |
| o-Xylene | U | | 0.012 | 0.031 | mg/Kg | 1 | 10/29/2019 03:01 |
| Toluene | U | | 0.0085 | 0.031 | mg/Kg | 1 | 10/29/2019 03:01 |
| Xylenes, Total | U | | 0.041 | 0.093 | mg/Kg | 1 | 10/29/2019 03:01 |
| Surr: 1,2-Dichloroethane-d4 | 100 | | | 70-130 | %REC | 1 | 10/29/2019 03:01 |
| Surr: 4-Bromofluorobenzene | 102 | | | 70-130 | %REC | 1 | 10/29/2019 03:01 |
| Surr: Dibromofluoromethane | 91.0 | | | 70-130 | %REC | 1 | 10/29/2019 03:01 |
| Surr: Toluene-d8 | 92.6 | | | 70-130 | %REC | 1 | 10/29/2019 03:01 |
| ELECTRICAL CONDUCTIVITY (SAR) | | | Method: USDA H60 METHOD 2 | | Prep: USDA Method 20B / 10/30/19 | | Analyst: QTN |
| Electrical Conductivity @ Saturation | 7.0 | | 0.011 | 0.10 | mmhos/cm @25° | 20 | 10/30/2019 10:18 |
| CHROMIUM, TRIVALENT | | | Method: CALCULATION | | | | Analyst: JZB |
| Chromium, Trivalent | 11 | | 0.36 | 1.2 | mg/Kg-dry | 1 | 10/31/2019 12:33 |
| CHROMIUM, HEXAVALENT | | | Method: SW7196A | | Prep: SW3060A / 10/29/19 | | Analyst: RZM |
| Chromium, Hexavalent | U | | 0.97 | 1.1 | mg/Kg-dry | 1 | 10/29/2019 15:55 |
| MOISTURE | | | Method: SW3550C | | | | Analyst: KTP |
| Moisture | 14 | | 0.10 | 0.10 | % of sample | 1 | 10/28/2019 10:55 |
| PH | | | Method: SW9045D | | Prep: EXTRACT / 10/27/19 | | Analyst: DVD |
| pH | 7.64 | | 0.10 | 0.100 | s.u. | 1 | 10/27/2019 14:00 |
| Temperature | 21.3 | | 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-Equity Federal 1-7 (spill)
Sample ID: Inside Containment (South) @ 3'
Collection Date: 10/25/2019 09:00 AM

Work Order: 19102078
Lab ID: 19102078-02
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) | 10 | | 3.3 | 5.7 | mg/Kg-dry | 1 | 10/29/2019 11:46 |
| Surr: 4-Terphenyl-d14 | 57.8 | | | 33-111 | %REC | 1 | 10/29/2019 11:46 |
| GASOLINE RANGE ORGANICS BY GC-FID | | | | | | | |
| | | | Method: SW8015D | | Prep: SW5035 / 10/28/19 | | Analyst: KB |
| GRO (C6-C10) | U | | 3.0 | 7.2 | mg/Kg | 1 | 10/29/2019 08:08 |
| Surr: Toluene-d8 | 96.2 | | | 71-123 | %REC | 1 | 10/29/2019 08:08 |
| MERCURY BY CVAA | | | | | | | |
| | | | Method: SW7471B | | Prep: SW7471 / 10/28/19 | | Analyst: RSB |
| Mercury | 0.060 | | 0.0019 | 0.019 | mg/Kg-dry | 1 | 10/29/2019 11:26 |
| METALS BY ICP-MS | | | | | | | |
| | | | Method: SW6020A | | Prep: SW3050B / 10/30/19 | | Analyst: STP |
| Arsenic | 8.1 | | 0.052 | 0.43 | mg/Kg-dry | 1 | 10/30/2019 16:43 |
| Barium | 75 | | 0.40 | 0.43 | mg/Kg-dry | 1 | 10/30/2019 16:43 |
| Cadmium | 0.19 | | 0.026 | 0.17 | mg/Kg-dry | 1 | 10/30/2019 16:43 |
| Chromium | 8.5 | | 0.19 | 0.43 | mg/Kg-dry | 1 | 10/30/2019 16:43 |
| Copper | 12 | | 0.43 | 0.43 | mg/Kg-dry | 1 | 10/30/2019 16:43 |
| Lead | 19 | | 0.21 | 0.43 | mg/Kg-dry | 1 | 10/30/2019 16:43 |
| Nickel | 15 | | 0.23 | 0.43 | mg/Kg-dry | 1 | 10/30/2019 16:43 |
| Selenium | 1.4 | | 0.40 | 0.43 | mg/Kg-dry | 1 | 10/30/2019 16:43 |
| Silver | 0.11 | J | 0.057 | 0.43 | mg/Kg-dry | 1 | 10/30/2019 16:43 |
| Zinc | 91 | | 8.5 | 8.7 | mg/Kg-dry | 10 | 10/30/2019 18:51 |
| SOLUBLE CATIONS FOR SAR | | | | | | | |
| | | | Method: SW6020A | | Prep: USDA Method 20B / 10/30/19 | | Analyst: STP |
| Calcium | 550 | | 2.5 | 5.0 | mg/L | 10 | 10/30/2019 15:34 |
| Magnesium | 210 | | 0.50 | 2.0 | mg/L | 10 | 10/30/2019 15:34 |
| Sodium | 490 | | 0.45 | 2.0 | mg/L | 10 | 10/30/2019 15:34 |
| SODIUM ADSORPTION RATIO | | | | | | | |
| | | | Method: USDA H60 METHOD 2 | | Prep: USDA Method 20B / 10/30/19 | | Analyst: STP |
| Sodium Adsorption Ratio | 4.5 | | 0.010 | 0.010 | none | 1 | 10/30/2019 |
| SEMI-VOLATILE ORGANIC COMPOUNDS | | | | | | | |
| | | | Method: SW846 8270D | | Prep: SW3546 / 10/28/19 | | Analyst: EE |
| Acenaphthene | U | | 5.7 | 7.8 | µg/Kg-dry | 1 | 10/28/2019 19:43 |
| Anthracene | U | | 5.5 | 7.8 | µg/Kg-dry | 1 | 10/28/2019 19:43 |
| Benzo(a)anthracene | U | | 6.8 | 7.8 | µg/Kg-dry | 1 | 10/28/2019 19:43 |
| Benzo(a)pyrene | U | | 4.8 | 7.8 | µg/Kg-dry | 1 | 10/28/2019 19:43 |
| Benzo(b)fluoranthene | U | | 5.8 | 7.8 | µg/Kg-dry | 1 | 10/28/2019 19:43 |
| Benzo(k)fluoranthene | U | | 5.9 | 7.8 | µg/Kg-dry | 1 | 10/28/2019 19:43 |
| Chrysene | U | | 6.3 | 7.8 | µg/Kg-dry | 1 | 10/28/2019 19:43 |
| Dibenzo(a,h)anthracene | U | | 4.2 | 7.8 | µg/Kg-dry | 1 | 10/28/2019 19:43 |
| Fluoranthene | U | | 3.8 | 7.8 | µg/Kg-dry | 1 | 10/28/2019 19:43 |

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-Equity Federal 1-7 (spill)
Sample ID: Inside Containment (South) @ 3'
Collection Date: 10/25/2019 09:00 AM

Work Order: 19102078
Lab ID: 19102078-02
Matrix: SOIL

| Analyses | Result | Qual | MDL | Report Limit | Units | Dilution Factor | Date Analyzed |
|--------------------------------------|--------|------|----------------------------------|--------------|----------------------------------|-----------------|---------------------|
| Fluorene | U | | 5.7 | 7.8 | µg/Kg-dry | 1 | 10/28/2019 19:43 |
| Indeno(1,2,3-cd)pyrene | U | | 5.4 | 7.8 | µg/Kg-dry | 1 | 10/28/2019 19:43 |
| Naphthalene | U | | 5.0 | 7.8 | µg/Kg-dry | 1 | 10/28/2019 19:43 |
| Pyrene | U | | 1.4 | 7.8 | µg/Kg-dry | 1 | 10/28/2019 19:43 |
| Surr: 2-Fluorobiphenyl | 68.6 | | | 44-107 | %REC | 1 | 10/28/2019 19:43 |
| Surr: 4-Terphenyl-d14 | 58.6 | | | 52-123 | %REC | 1 | 10/28/2019 19:43 |
| Surr: Nitrobenzene-d5 | 58.8 | | | 41-94 | %REC | 1 | 10/28/2019 19:43 |
| VOLATILE ORGANIC COMPOUNDS | | | Method: SW8260C | | Prep: SW5035 / 10/28/19 | | Analyst: WH |
| Benzene | U | | 0.0054 | 0.032 | mg/Kg | 1 | 10/29/2019 03:18 |
| Ethylbenzene | U | | 0.0067 | 0.032 | mg/Kg | 1 | 10/29/2019 03:18 |
| m,p-Xylene | U | | 0.042 | 0.063 | mg/Kg | 1 | 10/29/2019 03:18 |
| o-Xylene | U | | 0.012 | 0.032 | mg/Kg | 1 | 10/29/2019 03:18 |
| Toluene | U | | 0.0086 | 0.032 | mg/Kg | 1 | 10/29/2019 03:18 |
| Xylenes, Total | U | | 0.042 | 0.095 | mg/Kg | 1 | 10/29/2019 03:18 |
| Surr: 1,2-Dichloroethane-d4 | 101 | | | 70-130 | %REC | 1 | 10/29/2019 03:18 |
| Surr: 4-Bromofluorobenzene | 104 | | | 70-130 | %REC | 1 | 10/29/2019 03:18 |
| Surr: Dibromofluoromethane | 92.4 | | | 70-130 | %REC | 1 | 10/29/2019 03:18 |
| Surr: Toluene-d8 | 93.4 | | | 70-130 | %REC | 1 | 10/29/2019 03:18 |
| ELECTRICAL CONDUCTIVITY (SAR) | | | Method: USDA H60 METHOD 2 | | Prep: USDA Method 20B / 10/30/19 | | Analyst: QTN |
| Electrical Conductivity @ Saturation | 6.8 | | 0.011 | 0.10 | mmhos/cm @25° | 20 | 10/30/2019 10:18 |
| CHROMIUM, TRIVALENT | | | Method: CALCULATION | | | | Analyst: JZB |
| Chromium, Trivalent | 7.4 | | 0.37 | 1.2 | mg/Kg-dry | 1 | 10/31/2019 12:33 |
| CHROMIUM, HEXAVALENT | | | Method: SW7196A | | Prep: SW3060A / 10/29/19 | | Analyst: RZM |
| Chromium, Hexavalent | 1.1 | J | 0.96 | 1.1 | mg/Kg-dry | 1 | 10/29/2019 15:55 |
| MOISTURE | | | Method: SW3550C | | | | Analyst: KTP |
| Moisture | 16 | | 0.10 | 0.10 | % of sample | 1 | 10/28/2019 10:55 |
| PH | | | Method: SW9045D | | Prep: EXTRACT / 10/27/19 | | Analyst: DVD |
| pH | 7.74 | | 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.

Client: HRL Compliance Solutions, Inc

Work Order: 19102078

Project: Whiting Petroleum-Equity Federal 1-7 (spill)

QC BATCH REPORT

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: | | 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: | | 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:

| | |
|--------------|--------------|
| 19102078-01A | 19102078-02A |
|--------------|--------------|

Client: HRL Compliance Solutions, Inc
Work Order: 19102078
Project: Whiting Petroleum-Equity Federal 1-7 (spill)

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: | | 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: | | 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:

| | |
|--------------|--------------|
| 19102078-01A | 19102078-02A |
|--------------|--------------|

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

Client: HRL Compliance Solutions, Inc
Work Order: 19102078
Project: Whiting Petroleum-Equity Federal 1-7 (spill)

QC BATCH REPORT

Batch ID: **144738** Instrument ID **HG4** Method: **SW7471B**

| | | | | | | | | | | |
|------------|--------|-------------------------------|---------|---------------|------|----------------|---------------|-----------------------------------|-----------|-------|
| MBLK | | Sample ID: MBLK-144738-144738 | | | | Units: mg/Kg | | Analysis Date: 10/29/2019 10:32 A | | |
| Client ID: | | Run ID: HG4_191029A | | | | SeqNo: 6019079 | | 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 |

Mercury U 0.020

| | | | | | | | | | | |
|------------|--------|------------------------------|---------|---------------|------|----------------|---------------|-----------------------------------|-----------|-------|
| LCS | | Sample ID: LCS-144738-144738 | | | | Units: mg/Kg | | Analysis Date: 10/29/2019 12:32 P | | |
| Client ID: | | Run ID: HG4_191029A | | | | SeqNo: 6019132 | | 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 |

Mercury 0.1665 0.020 0.1665 0 100 80-120 0

| | | | | | | | | | | | |
|------------|--------|---------------------------|---------------------|---------------|------|----------------|---------------|-----------------------|-----------------------------------|-------|--|
| MS | | Sample ID: 19101701-05BMS | | | | | Units: mg/Kg | | Analysis Date: 10/29/2019 12:36 P | | |
| Client ID: | | | Run ID: HG4_191029A | | | SeqNo: 6019134 | | 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 | |

Mercury 0.1348 0.016 0.1346 0.03317 75.5 75-125 0

| | | | | | | | | | | | |
|------------|--------|----------------------------|---------------------|---------------|------|----------------|---------------|-----------------------|-----------------------------------|-------|--|
| MSD | | Sample ID: 19101701-05BMSD | | | | | Units: mg/Kg | | Analysis Date: 10/29/2019 12:38 P | | |
| Client ID: | | | Run ID: HG4_191029A | | | SeqNo: 6019135 | | 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 | |

Mercury 0.1341 0.016 0.1341 0.03317 75.3 75-125 0.1348 0.554 35

The following samples were analyzed in this batch:

| | |
|--------------|--------------|
| 19102078-01A | 19102078-02A |
|--------------|--------------|

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

Client: HRL Compliance Solutions, Inc
Work Order: 19102078
Project: Whiting Petroleum-Equity Federal 1-7 (spill)

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: | | 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:

| | |
|--------------|--------------|
| 19102078-01A | 19102078-02A |
|--------------|--------------|

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

Client: HRL Compliance Solutions, Inc
Work Order: 19102078
Project: Whiting Petroleum-Equity Federal 1-7 (spill)

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: 19102078
Project: Whiting Petroleum-Equity Federal 1-7 (spill)

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:

19102078-01A

19102078-02A

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

Client: HRL Compliance Solutions, Inc
Work Order: 19102078
Project: Whiting Petroleum-Equity Federal 1-7 (spill)

QC BATCH REPORT

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

| | | | | | | | | | | |
|----------------------------|--------|---------------------|---------|---------------|----------------|---------------|---------------------------|------|-----------|------|
| Sample ID: 19102081-03ADUP | | | | Units: none | | | Analysis Date: 10/30/2019 | | | |
| Client ID: | | 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:

| | |
|--------------|--------------|
| 19102078-01A | 19102078-02A |
|--------------|--------------|

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

Client: HRL Compliance Solutions, Inc
Work Order: 19102078
Project: Whiting Petroleum-Equity Federal 1-7 (spill)

QC BATCH REPORT

Batch ID: **144693** Instrument ID **SVMS9** Method: **SW846 8270D**

| MBLK | | Sample ID: SBLKS1-144693-144693 | | | | Units: µg/Kg | | Analysis Date: 10/28/2019 04:11 P | | |
|-------------------------------|--------|--|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: | | Run ID: SVMS9_191028A | | | | SeqNo: 6018473 | | 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 |
| 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 | | | | | | | | |
| <hr/> | | | | | | | | | | |
| <i>Surr: 2-Fluorobiphenyl</i> | 2641 | 0 | 3333 | 0 | 79.2 | 44-107 | 0 | | | |
| <i>Surr: 4-Terphenyl-d14</i> | 2380 | 0 | 3333 | 0 | 71.4 | 52-123 | 0 | | | |
| <i>Surr: Nitrobenzene-d5</i> | 2281 | 0 | 3333 | 0 | 68.4 | 41-94 | 0 | | | |

| LCS | | Sample ID: SLCSS1-144693-144693 | | | | Units: µg/Kg | | Analysis Date: 10/28/2019 04:36 P | | |
|-------------------------------|--------|--|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: | | Run ID: SVMS9_191028A | | | | SeqNo: 6018474 | | 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 |
| Acenaphthene | 956 | 6.7 | 1333 | 0 | 71.7 | 55-101 | 0 | | | |
| Anthracene | 1089 | 6.7 | 1333 | 0 | 81.7 | 67-105 | 0 | | | |
| Benzo(a)anthracene | 1103 | 6.7 | 1333 | 0 | 82.7 | 68-105 | 0 | | | |
| Benzo(a)pyrene | 1080 | 6.7 | 1333 | 0 | 81 | 68-110 | 0 | | | |
| Benzo(b)fluoranthene | 1107 | 6.7 | 1333 | 0 | 83 | 65-110 | 0 | | | |
| Benzo(k)fluoranthene | 1143 | 6.7 | 1333 | 0 | 85.8 | 66-113 | 0 | | | |
| Chrysene | 1163 | 6.7 | 1333 | 0 | 87.2 | 68-108 | 0 | | | |
| Dibenzo(a,h)anthracene | 1123 | 6.7 | 1333 | 0 | 84.2 | 62-119 | 0 | | | |
| Fluoranthene | 1064 | 6.7 | 1333 | 0 | 79.8 | 67-106 | 0 | | | |
| Fluorene | 1079 | 6.7 | 1333 | 0 | 81 | 59-107 | 0 | | | |
| Indeno(1,2,3-cd)pyrene | 1046 | 6.7 | 1333 | 0 | 78.5 | 56-120 | 0 | | | |
| Naphthalene | 968.7 | 6.7 | 1333 | 0 | 72.7 | 46-98 | 0 | | | |
| Pyrene | 1117 | 6.7 | 1333 | 0 | 83.8 | 60-119 | 0 | | | |
| <hr/> | | | | | | | | | | |
| <i>Surr: 2-Fluorobiphenyl</i> | 2479 | 0 | 3333 | 0 | 74.4 | 44-107 | 0 | | | |
| <i>Surr: 4-Terphenyl-d14</i> | 2212 | 0 | 3333 | 0 | 66.4 | 52-123 | 0 | | | |
| <i>Surr: Nitrobenzene-d5</i> | 2275 | 0 | 3333 | 0 | 68.3 | 41-94 | 0 | | | |

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

Client: HRL Compliance Solutions, Inc
Work Order: 19102078
Project: Whiting Petroleum-Equity Federal 1-7 (spill)

QC BATCH REPORT

Batch ID: **144693** Instrument ID: **SVMS9** Method: **SW846 8270D**

| MS | | | | Sample ID: 19101700-20B MS | | | Units: µg/Kg | | Analysis Date: 10/28/2019 06:02 P | | |
|------------------------|--------|-----|-----------------------|----------------------------|------|----------------|---------------|-----------------------|-----------------------------------|-------|--|
| Client ID: | | | Run ID: SVMS9_191028A | | | SeqNo: 6018475 | | 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 | |
| Acenaphthene | 829.6 | 6.5 | 1295 | 0 | 64.1 | 55-101 | 0 | | | | |
| Anthracene | 955.8 | 6.5 | 1295 | 0 | 73.8 | 67-105 | 0 | | | | |
| Benzo(a)anthracene | 1003 | 6.5 | 1295 | 7.789 | 76.9 | 68-105 | 0 | | | | |
| Benzo(a)pyrene | 970.7 | 6.5 | 1295 | 0 | 75 | 68-110 | 0 | | | | |
| Benzo(b)fluoranthene | 1004 | 6.5 | 1295 | 0 | 77.6 | 65-110 | 0 | | | | |
| Benzo(k)fluoranthene | 983 | 6.5 | 1295 | 0 | 75.9 | 66-113 | 0 | | | | |
| Chrysene | 1013 | 6.5 | 1295 | 7.14 | 77.7 | 68-108 | 0 | | | | |
| Dibenzo(a,h)anthracene | 969.4 | 6.5 | 1295 | 0 | 74.9 | 62-119 | 0 | | | | |
| Fluoranthene | 974 | 6.5 | 1295 | 0 | 75.2 | 67-106 | 0 | | | | |
| Fluorene | 971.4 | 6.5 | 1295 | 0 | 75 | 59-107 | 0 | | | | |
| Indeno(1,2,3-cd)pyrene | 931.9 | 6.5 | 1295 | 0 | 72 | 56-120 | 0 | | | | |
| Naphthalene | 872.3 | 6.5 | 1295 | 0 | 67.4 | 46-98 | 0 | | | | |
| Pyrene | 979.8 | 6.5 | 1295 | 0 | 75.7 | 60-119 | 0 | | | | |
| Surr: 2-Fluorobiphenyl | 2145 | 0 | 3238 | 0 | 66.2 | 44-107 | 0 | | | | |
| Surr: 4-Terphenyl-d14 | 1896 | 0 | 3238 | 0 | 58.6 | 52-123 | 0 | | | | |
| Surr: Nitrobenzene-d5 | 1943 | 0 | 3238 | 0 | 60 | 41-94 | 0 | | | | |

| MSD | | | | Sample ID: 19101700-20B MSD | | | | Units: µg/Kg | | Analysis Date: 10/28/2019 06:27 P | |
|------------------------|--------|-----|-----------------------|-----------------------------|------|----------------|---------------|-----------------------|-----------|-----------------------------------|--|
| Client ID: | | | Run ID: SVMS9_191028A | | | SeqNo: 6018476 | | 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 | |
| Acenaphthene | 879.1 | 6.4 | 1289 | 0 | 68.2 | 55-101 | 829.6 | 5.8 | 30 | | |
| Anthracene | 982.3 | 6.4 | 1289 | 0 | 76.2 | 67-105 | 955.8 | 2.73 | 30 | | |
| Benzo(a)anthracene | 998.4 | 6.4 | 1289 | 7.789 | 76.9 | 68-105 | 1003 | 0.472 | 30 | | |
| Benzo(a)pyrene | 968.7 | 6.4 | 1289 | 0 | 75.2 | 68-110 | 970.7 | 0.205 | 30 | | |
| Benzo(b)fluoranthene | 984.9 | 6.4 | 1289 | 0 | 76.4 | 65-110 | 1004 | 1.97 | 30 | | |
| Benzo(k)fluoranthene | 1013 | 6.4 | 1289 | 0 | 78.6 | 66-113 | 983 | 2.96 | 30 | | |
| Chrysene | 1023 | 6.4 | 1289 | 7.14 | 78.8 | 68-108 | 1013 | 0.924 | 30 | | |
| Dibenzo(a,h)anthracene | 1006 | 6.4 | 1289 | 0 | 78.1 | 62-119 | 969.4 | 3.71 | 30 | | |
| Fluoranthene | 970 | 6.4 | 1289 | 0 | 75.3 | 67-106 | 974 | 0.405 | 30 | | |
| Fluorene | 996.5 | 6.4 | 1289 | 0 | 77.3 | 59-107 | 971.4 | 2.55 | 30 | | |
| Indeno(1,2,3-cd)pyrene | 975.2 | 6.4 | 1289 | 0 | 75.7 | 56-120 | 931.9 | 4.54 | 30 | | |
| Naphthalene | 880.4 | 6.4 | 1289 | 0 | 68.3 | 46-98 | 872.3 | 0.929 | 30 | | |
| Pyrene | 989.4 | 6.4 | 1289 | 0 | 76.8 | 60-119 | 979.8 | 0.972 | 30 | | |
| Surr: 2-Fluorobiphenyl | 2246 | 0 | 3222 | 0 | 69.7 | 44-107 | 2145 | 4.59 | 40 | | |
| Surr: 4-Terphenyl-d14 | 1947 | 0 | 3222 | 0 | 60.4 | 52-123 | 1896 | 2.62 | 40 | | |
| Surr: Nitrobenzene-d5 | 2015 | 0 | 3222 | 0 | 62.5 | 41-94 | 1943 | 3.64 | 40 | | |

The following samples were analyzed in this batch:

19102078-01A

19102078-02A

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

Client: HRL Compliance Solutions, Inc
Work Order: 19102078
Project: Whiting Petroleum-Equity Federal 1-7 (spill)

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: Inside Containment (North) @ 2' | | | | 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:

| | |
|--------------|--------------|
| 19102078-01A | 19102078-02A |
|--------------|--------------|

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

Client: HRL Compliance Solutions, Inc
Work Order: 19102078
Project: Whiting Petroleum-Equity Federal 1-7 (spill)

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: Inside Containment (North) @ 2' | | 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: Inside Containment (North) @ 2' | | 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: Inside Containment (North) @ 2' | | 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:

| | |
|--------------|--------------|
| 19102078-01A | 19102078-02A |
|--------------|--------------|

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

Client: HRL Compliance Solutions, Inc
Work Order: 19102078
Project: Whiting Petroleum-Equity Federal 1-7 (spill)

QC BATCH REPORT

Batch ID: **R274010** Instrument ID **MOIST** Method: **SW3550C**

| | | | | | | | | | | |
|------------|--------|--------------------------|---------|---------------|------|--------------------|---------------|-----------------------------------|-----------|-------|
| MBLK | | Sample ID: WBLKS-R274010 | | | | Units: % of sample | | Analysis Date: 10/28/2019 10:55 A | | |
| Client ID: | | Run ID: MOIST_191028B | | | | SeqNo: 6018546 | | 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-R274010 | | | | | Units: % of sample | | Analysis Date: 10/28/2019 10:55 A | | |
| Client ID: | | | Run ID: MOIST_191028B | | | SeqNo: 6018545 | | 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: 19101991-03A DUP | | | | Units: % of sample | | | Analysis Date: 10/28/2019 10:55 A | | | |
| Client ID: | | | | Run ID: MOIST_191028B | | | | SeqNo: 6018538 | | | Prep Date: | | DF: 1 | |
| Analyte | | | | Result | | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |

Moisture 9.58 0.10 0 0 0 0-0 9.68 1.04 10

| | | | | | | | | | | | | | | |
|------------|--|--|--|-----------------------------|--|-----|---------|--------------------|------|---------------|-----------------------------------|------|-----------|------|
| DUP | | | | Sample ID: 19101993-01B DUP | | | | Units: % of sample | | | Analysis Date: 10/28/2019 10:55 A | | | |
| Client ID: | | | | Run ID: MOIST_191028B | | | | SeqNo: 6018540 | | | Prep Date: | | DF: 1 | |
| Analyte | | | | Result | | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |

Moisture 4.58 0.10 0 0 0 0-0 4.27 7.01 10

The following samples were analyzed in this batch:

| | |
|--------------|--------------|
| 19102078-01A | 19102078-02A |
|--------------|--------------|

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

Sample Receipt Checklist

Client Name: **HRL**

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

Work Order: **19102078**

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 checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input 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 10:59:56 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: