

# ALS Group, USA

Date: 26-Jul-17

**Client:** HRL Compliance Solutions, Inc  
**Project:** Laramie Energy - Mesa 13E Pit  
**Sample ID:** 13E Pit Solids Composite  
**Collection Date:** 7/24/2017 12:50 PM

**Work Order:** 17071257  
**Lab ID:** 17071257-01  
**Matrix:** SOLID

| Analyses                                 | Result        | Qual | Report Limit       | Units     | Dilution Factor             | Date Analyzed      |
|--|---------------|------|--------------------|-----------|-----------------------------|--------------------|
| <b>DIESEL RANGE ORGANICS BY GC-FID</b>   |               |      |                    |           |                             |                    |
| <b>DRO (C10-C28)</b>                     | <b>15,000</b> |      | <b>SW8015C</b>     |           | Prep: SW3546 7/25/17 13:31  | Analyst: <b>KB</b> |
| <i>Surr: 4-Terphenyl-d14</i>             | 305           | S    | 78                 | mg/Kg-dry | 10                          | 7/26/2017 01:08 PM |
|  |               |      | 34-130             | %REC      | 10                          | 7/26/2017 01:08 PM |
| <b>GASOLINE RANGE ORGANICS BY GC-FID</b> |               |      |                    |           |                             |                    |
| <b>GRO (C6-C10)</b>                      | <b>8,000</b>  |      | <b>SW8015D</b>     |           | Prep: SW5035 7/25/17 16:04  | Analyst: <b>KB</b> |
| <i>Surr: Toluene-d8</i>                  | 147           | S    | 130                | mg/Kg     | 10                          | 7/26/2017 08:44 AM |
|  |               |      | 71-123             | %REC      | 10                          | 7/26/2017 08:44 AM |
| <b>METALS ANALYSIS BY ICP</b>            |               |      |                    |           |                             |                    |
|  |               |      | <b>SW846 6010C</b> |           | Prep: SW3050B 7/25/17 12:49 | Analyst: <b>LR</b> |
| <b>Arsenic</b>                           | <b>22</b>     |      | <b>0.53</b>        | mg/Kg-dry | 1                           | 7/25/2017 11:39 PM |
| Cadmium                                  | ND            |      | 1.1                | mg/Kg-dry | 1                           | 7/25/2017 11:39 PM |
| <b>Chromium</b>                          | <b>76</b>     |      | <b>0.53</b>        | mg/Kg-dry | 1                           | 7/25/2017 11:39 PM |
| <b>Copper</b>                            | <b>93</b>     |      | <b>1.1</b>         | mg/Kg-dry | 1                           | 7/25/2017 11:39 PM |
| <b>Lead</b>                              | <b>51</b>     |      | <b>0.53</b>        | mg/Kg-dry | 1                           | 7/25/2017 11:39 PM |
| <b>Nickel</b>                            | <b>45</b>     |      | <b>0.53</b>        | mg/Kg-dry | 1                           | 7/25/2017 11:39 PM |
| <b>Selenium</b>                          | <b>4.2</b>    |      | <b>1.1</b>         | mg/Kg-dry | 1                           | 7/25/2017 11:39 PM |
| Silver                                   | ND            |      | 0.53               | mg/Kg-dry | 1                           | 7/25/2017 11:39 PM |
| <b>Zinc</b>                              | <b>190</b>    |      | <b>1.1</b>         | mg/Kg-dry | 1                           | 7/25/2017 11:39 PM |
| <b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>   |               |      |                    |           |                             |                    |
|  |               |      | <b>SW846 8270D</b> |           | Prep: SW3546 7/25/17 13:31  | Analyst: <b>RM</b> |
| Acenaphthene                             | ND            |      | 0.33               | mg/Kg-dry | 5                           | 7/26/2017 01:34 PM |
| Anthracene                               | ND            |      | 0.33               | mg/Kg-dry | 5                           | 7/26/2017 01:34 PM |
| Benzo(a)anthracene                       | ND            |      | 0.33               | mg/Kg-dry | 5                           | 7/26/2017 01:34 PM |
| Benzo(a)pyrene                           | ND            |      | 0.33               | mg/Kg-dry | 5                           | 7/26/2017 01:34 PM |
| Benzo(b)fluoranthene                     | ND            |      | 0.33               | mg/Kg-dry | 5                           | 7/26/2017 01:34 PM |
| Benzo(k)fluoranthene                     | ND            |      | 0.33               | mg/Kg-dry | 5                           | 7/26/2017 01:34 PM |
| Chrysene                                 | ND            |      | 0.33               | mg/Kg-dry | 5                           | 7/26/2017 01:34 PM |
| Dibenzo(a,h)anthracene                   | ND            |      | 0.33               | mg/Kg-dry | 5                           | 7/26/2017 01:34 PM |
| Fluoranthene                             | ND            |      | 0.33               | mg/Kg-dry | 5                           | 7/26/2017 01:34 PM |
| <b>Fluorene</b>                          | <b>3.4</b>    |      | <b>0.33</b>        | mg/Kg-dry | 5                           | 7/26/2017 01:34 PM |
| Indeno(1,2,3-cd)pyrene                   | ND            |      | 0.33               | mg/Kg-dry | 5                           | 7/26/2017 01:34 PM |
| <b>Naphthalene</b>                       | <b>8.0</b>    |      | <b>0.33</b>        | mg/Kg-dry | 5                           | 7/26/2017 01:34 PM |
| Pyrene                                   | ND            |      | 0.33               | mg/Kg-dry | 5                           | 7/26/2017 01:34 PM |
| <i>Surr: 2-Fluorobiphenyl</i>            | 45.6          |      | 20-140             | %REC      | 5                           | 7/26/2017 01:34 PM |
| <i>Surr: 4-Terphenyl-d14</i>             | 4.55          | S    | 22-172             | %REC      | 5                           | 7/26/2017 01:34 PM |
| <i>Surr: Nitrobenzene-d5</i>             | 77.2          |      | 8-140              | %REC      | 5                           | 7/26/2017 01:34 PM |
| <b>VOLATILE ORGANIC COMPOUNDS</b>        |               |      |                    |           |                             |                    |
|  |               |      | <b>SW8260B</b>     |           | Prep: SW5035 7/25/17 15:58  | Analyst: <b>WH</b> |
| <b>Benzene</b>                           | <b>0.95</b>   |      | <b>0.88</b>        | mg/Kg     | 10                          | 7/26/2017 12:13 PM |
| <b>Ethylbenzene</b>                      | <b>5.2</b>    |      | <b>0.88</b>        | mg/Kg     | 10                          | 7/26/2017 12:13 PM |
| <b>m,p-Xylene</b>                        | <b>160</b>    |      | <b>1.8</b>         | mg/Kg     | 10                          | 7/26/2017 12:13 PM |
| <b>o-Xylene</b>                          | <b>40</b>     |      | <b>0.88</b>        | mg/Kg     | 10                          | 7/26/2017 12:13 PM |

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

PRELIMINARY

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|-----------------------------|-------------|------|----------------|--------------|-----------------------------|---------------------|
| <b>Toluene</b>              | <b>20</b>   |      | <b>0.88</b>    | <b>mg/Kg</b> | 10                          | 7/26/2017 12:13 PM  |
| <b>Xylenes, Total</b>       | <b>200</b>  |      | <b>2.6</b>     | <b>mg/Kg</b> | 10                          | 7/26/2017 12:13 PM  |
| Surr: 1,2-Dichloroethane-d4 | 98.1        |      | 70-130         | %REC         | 10                          | 7/26/2017 12:13 PM  |
| Surr: 4-Bromofluorobenzene  | 108         |      | 70-130         | %REC         | 10                          | 7/26/2017 12:13 PM  |
| Surr: Dibromofluoromethane  | 93.7        |      | 70-130         | %REC         | 10                          | 7/26/2017 12:13 PM  |
| Surr: Toluene-d8            | 121         |      | 70-130         | %REC         | 10                          | 7/26/2017 12:13 PM  |
| <b>CHROMIUM, HEXAVALENT</b> |             |      | <b>SW7196A</b> |              | Prep: SW3060A 7/25/17 20:00 | Analyst: <b>LW</b>  |
| Chromium, Hexavalent        | ND          |      | 1.5            | mg/Kg-dry    | 1                           | 7/26/2017 01:00 PM  |
| <b>MOISTURE</b>             |             |      | <b>SW3550C</b> |              |                             | Analyst: <b>SBR</b> |
| Moisture                    | <b>38</b>   |      | <b>0.050</b>   | % of sample  | 1                           | 7/25/2017 02:23 PM  |
| <b>PH</b>                   |             |      | <b>SW9045D</b> |              | Prep: EXTRACT 7/26/17 15:52 | Analyst: <b>RZM</b> |
| pH                          | <b>6.84</b> |      | <b>0.100</b>   | s.u.         | 1                           | 7/26/2017 04:00 PM  |

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