

HRL Compliance Solutions- CO

Sample Delivery Group: L844952
Samples Received: 07/02/2016
Project Number: LIFT 1 MONITORING SA
Description: Black Hills - Whittaker Flats D-17 - Lift 1 Monitoring
Sampl
Site: WF D-17
Report To: Jordan Cario
2385 F ½ Road
Grand Junction, CO 81505

Entire Report Reviewed By:



Shane Gambill

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



| | |
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| |
|-----------------|
| ¹ Cp |
| ² Tc |
| ³ Ss |
| ⁴ Cn |
| ⁵ Sr |
| ⁶ Qc |
| ⁷ Gl |
| ⁸ Al |
| ⁹ Sc |



LIFT 1 MONITORING SAMPLE L844952-01 Solid

Collected by
Jordan CarioCollected date/time
06/30/16 11:00Received date/time
07/02/16 09:00

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst |
|---|----------|----------|--------------------------|-----------------------|---------|
| Calculated Results | WG886151 | 1 | 07/06/16 07:53 | 07/07/16 11:06 | LTB |
| Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM | WG885714 | 20 | 07/03/16 18:46 | 07/06/16 17:59 | KMP |
| Wet Chemistry by Method 9050AMod | WG885918 | 1 | 07/05/16 10:23 | 07/05/16 10:23 | AMC |

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Shane Gambill
Technical Service Representative

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Calculated Results

| Analyte | Result | Qualifier | Dilution | Analysis date / time | Batch |
|-------------------------|--------|-----------|----------|-------------------------|----------|
| Sodium Adsorption Ratio | 32.8 | | 1 | 07/07/2016 11:06 | WG886151 |

Wet Chemistry by Method 9050AMod

| Analyte | Result umhos/cm | Qualifier | Dilution | Analysis date / time | Batch |
|----------------------|--------------------|-----------|----------|-------------------------|--------------------------|
| Specific Conductance | 31800 | | 1 | 07/05/2016 10:23 | WG885918 |

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

| Analyte | Result mg/kg | Qualifier | RDL mg/kg | Dilution | Analysis date / time | Batch |
|----------------------|-----------------|--------------------|--------------|----------|-------------------------|--------------------------|
| Benzo(a)anthracene | 0.537 | | 0.120 | 20 | 07/06/2016 17:59 | WG885714 |
| Benzo(a)pyrene | 0.168 | | 0.120 | 20 | 07/06/2016 17:59 | WG885714 |
| Benzo(b)fluoranthene | 0.804 | | 0.120 | 20 | 07/06/2016 17:59 | WG885714 |
| (S) p-Terphenyl-d14 | 102 | J7 | 32.2-131 | | 07/06/2016 17:59 | WG885714 |
| (S) Nitrobenzene-d5 | 55.7 | J7 | 22.1-146 | | 07/06/2016 17:59 | WG885714 |
| (S) 2-Fluorobiphenyl | 73.2 | J7 | 40.6-122 | | 07/06/2016 17:59 | WG885714 |

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Method Blank (MB)

(MB) WG885918-5 07/05/16 10:23

| | MB Result | MB Qualifier | MB MDL | MB RDL |
|----------------------|-----------|--------------|----------|----------|
| Analyte | umhos/cm | | umhos/cm | umhos/cm |
| Specific Conductance | 2.00 | | | |

L844530-01 Original Sample (OS) • Duplicate (DUP)

(OS) L844530-01 07/05/16 10:23 • (DUP) WG885918-1 07/05/16 10:23

| | Original Result | DUP Result | Dilution | DUP RPD | DUP Qualifier | DUP RPD Limits |
|----------------------|-----------------|------------|----------|---------|---------------|----------------|
| Analyte | umhos/cm | umhos/cm | | % | | % |
| Specific Conductance | 170 | 170 | 1 | 0.000 | | 20 |

L844952-01 Original Sample (OS) • Duplicate (DUP)

(OS) L844952-01 07/05/16 10:23 • (DUP) WG885918-2 07/05/16 10:23

| | Original Result | DUP Result | Dilution | DUP RPD | DUP Qualifier | DUP RPD Limits |
|----------------------|-----------------|------------|----------|---------|---------------|----------------|
| Analyte | umhos/cm | umhos/cm | | % | | % |
| Specific Conductance | 31800 | 31900 | 1 | 0.314 | | 20 |

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG885918-3 07/05/16 10:23 • (LCSD) WG885918-4 07/05/16 10:23

| | Spike Amount | LCS Result | LCSD Result | LCS Rec. | LCSD Rec. | Rec. Limits | LCS Qualifier | LCSD Qualifier | RPD | RPD Limits |
|----------------------|--------------|------------|-------------|----------|-----------|-------------|---------------|----------------|-------|------------|
| Analyte | umhos/cm | umhos/cm | umhos/cm | % | % | % | | | % | % |
| Specific Conductance | 653 | 665 | 664 | 102 | 102 | 90.0-110 | | | 0.150 | 20 |

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3147661-3 07/05/16 14:48

| Analyte | MB Result mg/kg | MB Qualifier | MB MDL mg/kg | MB RDL mg/kg |
|----------------------|--------------------|--------------|-----------------|-----------------|
| Benzo(a)anthracene | U | | 0.000600 | 0.00600 |
| Benzo(a)pyrene | U | | 0.000600 | 0.00600 |
| Benzo(b)fluoranthene | U | | 0.000600 | 0.00600 |
| (S) p-Terphenyl-d14 | 85.2 | | | 32.2-131 |
| (S) Nitrobenzene-d5 | 73.2 | | | 22.1-146 |
| (S) 2-Fluorobiphenyl | 84.1 | | | 40.6-122 |

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3147661-1 07/05/16 14:04 • (LCSD) R3147661-2 07/05/16 14:26

| Analyte | Spike Amount mg/kg | LCS Result mg/kg | LCSD Result mg/kg | LCS Rec. % | LCSD Rec. % | Rec. Limits % | LCS Qualifier | LCSD Qualifier | RPD % | RPD Limits % |
|----------------------|-----------------------|---------------------|----------------------|---------------|----------------|------------------|---------------|----------------|----------|-----------------|
| Benzo(a)anthracene | 0.0800 | 0.0738 | 0.0730 | 92.3 | 91.3 | 46.7-125 | | | 1.11 | 20 |
| Benzo(a)pyrene | 0.0800 | 0.0730 | 0.0741 | 91.3 | 92.6 | 42.3-119 | | | 1.46 | 20 |
| Benzo(b)fluoranthene | 0.0800 | 0.0734 | 0.0727 | 91.8 | 90.8 | 43.6-124 | | | 1.05 | 20 |
| (S) p-Terphenyl-d14 | | | | 78.4 | 81.2 | 32.2-131 | | | | |
| (S) Nitrobenzene-d5 | | | | 87.4 | 81.5 | 22.1-146 | | | | |
| (S) 2-Fluorobiphenyl | | | | 85.7 | 84.0 | 40.6-122 | | | | |

6
Qc

7
Gl

8
Al

9
Sc

L844547-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L844547-01 07/05/16 15:10 • (MS) R3147661-4 07/05/16 15:32 • (MSD) R3147661-5 07/05/16 15:54

| Analyte | Spike Amount mg/kg | Original Result mg/kg | MS Result mg/kg | MSD Result mg/kg | MS Rec. % | MSD Rec. % | Dilution | Rec. Limits % | MS Qualifier | MSD Qualifier | RPD % | RPD Limits % |
|----------------------|-----------------------|--------------------------|--------------------|---------------------|--------------|---------------|----------|------------------|--------------|---------------|----------|-----------------|
| Benzo(a)anthracene | 0.0800 | ND | 0.0644 | 0.0710 | 77.8 | 86.0 | 1 | 18.3-136 | | | 9.76 | 24.6 |
| Benzo(a)pyrene | 0.0800 | ND | 0.0680 | 0.0769 | 80.9 | 92.2 | 1 | 16.9-135 | | | 12.4 | 25.2 |
| Benzo(b)fluoranthene | 0.0800 | ND | 0.0608 | 0.0664 | 70.3 | 77.3 | 1 | 10.0-134 | | | 8.83 | 30.9 |
| (S) p-Terphenyl-d14 | | | | | 74.3 | 80.2 | | 32.2-131 | | | | |
| (S) Nitrobenzene-d5 | | | | | 73.9 | 87.3 | | 22.1-146 | | | | |
| (S) 2-Fluorobiphenyl | | | | | 71.1 | 80.7 | | 40.6-122 | | | | |



Abbreviations and Definitions

| | |
|-----------------|--|
| SDG | Sample Delivery Group. |
| MDL | Method Detection Limit. |
| RDL | Reported Detection Limit. |
| U | Not detected at the Reporting Limit (or MDL where applicable). |
| RPD | Relative Percent Difference. |
| Original Sample | The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG. |
| (S) | Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media. |
| Rec. | Recovery. |

| Qualifier | Description |
|-----------|---|
| J7 | Surrogate recovery cannot be used for control limit evaluation due to dilution. |

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

| | | | |
|-----------------------|-------------|-----------------------------|-------------------|
| Alabama | 40660 | Nevada | TN-03-2002-34 |
| Alaska | UST-080 | New Hampshire | 2975 |
| Arizona | AZ0612 | New Jersey–NELAP | TN002 |
| Arkansas | 88-0469 | New Mexico | TN00003 |
| California | 01157CA | New York | 11742 |
| Colorado | TN00003 | North Carolina | Env375 |
| Connecticut | PH-0197 | North Carolina ¹ | DW21704 |
| Florida | E87487 | North Carolina ² | 41 |
| Georgia | NELAP | North Dakota | R-140 |
| Georgia ¹ | 923 | Ohio–VAP | CL0069 |
| Idaho | TN00003 | Oklahoma | 9915 |
| Illinois | 200008 | Oregon | TN200002 |
| Indiana | C-TN-01 | Pennsylvania | 68-02979 |
| Iowa | 364 | Rhode Island | 221 |
| Kansas | E-10277 | South Carolina | 84004 |
| Kentucky ¹ | 90010 | South Dakota | n/a |
| Kentucky ² | 16 | Tennessee ¹⁴ | 2006 |
| Louisiana | AI30792 | Texas | T 104704245-07-TX |
| Maine | TN0002 | Texas ⁵ | LAB0152 |
| Maryland | 324 | Utah | 6157585858 |
| Massachusetts | M-TN003 | Vermont | VT2006 |
| Michigan | 9958 | Virginia | 109 |
| Minnesota | 047-999-395 | Washington | C1915 |
| Mississippi | TN00003 | West Virginia | 233 |
| Missouri | 340 | Wisconsin | 9980939910 |
| Montana | CERT0086 | Wyoming | A2LA |
| Nebraska | NE-OS-15-05 | | |

Third Party & Federal Accreditations

| | | | |
|-------------------------------|---------|------|---------|
| A2LA – ISO 17025 | 1461.01 | AIHA | 100789 |
| A2LA – ISO 17025 ⁵ | 1461.02 | DOD | 1461.01 |
| Canada | 1461.01 | USDA | S-67674 |
| EPA–Crypto | TN00003 | | |

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



