



Nicholson GeoSolutions LLC

3433 East Lake Drive
Centennial, CO 80121

June 21, 2018

Mr. Terry Pape
HRM Resources, LLC
410 17th Street, Suite 1600
Denver, CO 80202

**Subject: Marick No. 1A” Landfarm Removal and Footprint Sampling Results
COGCC Remediation #9015**

Dear Terry:

Nicholson GeoSolutions LLC was retained by HRM Resources II LLC (HRM) to conduct soil sampling of the landfarm footprint on the Marick No. 1A lease, Washington County, Colorado. The landfarm material was removed and sent to the Denver Arapahoe Disposal (DADS) Landfill in Aurora, Colorado during late April and May 2018 by Jayhawk Grading, Inc. A total of 3,910 yards of impacted material was sent to the landfill. Appendix A provides the landfill gatehouse summaries.

Sampling of the landfarm footprint was initially conducted at 10 locations on May 1st and June 4th, 2018. The locations of the footprint samples are shown on Figure 1. All footprint samples were analyzed for Total Volatile Petroleum Hydrocarbons (TVPH – gasoline range), Total Extractable Petroleum Hydrocarbons (TEPH – diesel and motor oil range), BTEX (benzene, toluene, ethylbenzene, and xylenes), sodium adsorption ratio (SAR), pH, and conductivity to evaluate compliance with the COGCC Table 910-1 standards.

Table 1 provides a summary of the analytical results for the initial footprint samples collected on May 1st, 2018. The laboratory report is contained in Appendix B. TPH exceeded the standard of 500 mg/kg for samples Marick-LFF-3 through Marick-LFF-6.

The remaining four initial footprint samples (Marick-LFF-7 through Marick-LFF-10) were collected on June 4th, 2018. In addition, the landfarm areas with footprint samples that failed on May 1st, 2018 were resampled after those areas had been ripped and regraded. Table 2 provides a summary of the analytical results for the footprint samples collected on June 4th, 2018. Sample Marick-LFF-7 failed for TPH and sample Marick-TFF-10 failed for SAR. In addition, pH failed for samples Marck-LFF-8 through Marick-LFF-10.

In response to the initial sample results, the portions of the landfarm that failed were ripped and regraded, and additional footprint samples were collected on June 13th, 2018. Table 3 provides the results for the additional footprint samples. All results were below the COGCC standards and no further action is required at this site.

Nicholson GeoSolutions LLC



David K. Nicholson, P.G.
Principal Geologist

Table 1 Marick No. 1A Landfarm Footprint Sample Results – May 1, 2018

Parameter	Table 910-1 Standards	Marick-LFF 1	Marick-LFF 2	Marick-LFF 3	Marick-LFF 4	Marick-LFF 5	Marick-LFF 6
TVPH – gasoline range	500 ¹	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TEPH – diesel/motor oil range		44.8	<8.0	3,610	506	3,560	6,460
benzene	0.17	0.000926	<0.0005	0.000837	<0.0005	<0.0005	0.00083
toluene	85	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
ethylbenzene	100	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
xylenes	175	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
pH	6-9 units	8.60	8.48	9.02	8.30	8.56	8.63
Specific Conductivity	<4 mmhos/cm	0.265	0.194	0.523	0.501	0.298	0.529
SAR	<12	1.47	1.29	3.03	5.38	1.85	1.55

¹The standard is 500 for the combined total of TVPH and TEPH All units in mg/kg except where indicated
Bold values exceed standards

Table 2 Marick No. 1A Footprint Sample Results – June 4, 2018

Parameter	Table 910-1 Standards	Marick-LFF 3	Marick-LFF 4	Marick-LFF 5	Marick-LFF 6	Marick-LFF 7
TVPH – gasoline range	500 ¹	<0.1	<0.1	<0.1	<0.1	<0.1
TEPH – diesel/motor oil range		2,247	763	1,406	2,043	1,232
benzene	0.17	0.000653	<0.0005	<0.0005	<0.0005	<0.0005
toluene	85	<0.005	<0.005	<0.005	<0.005	<0.005
ethylbenzene	100	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
xylenes	175	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
pH	6-9 units	9.00	8.92	8.41	8.77	8.22
Specific Conductivity	<4 mmhos/cm	0.315	0.208	0.193	0.319	0.715
SAR	<12	9.56	8.26	1.93	7.09	6.42

Parameter	Table 910-1 Standards	Marick-LFF 8	Marick-LFF 9	Marick-LFF 10
TVPH – gasoline range	500 ¹	<0.1	<0.1	<0.1
TEPH – diesel/motor oil range		248	479	406
benzene	0.17	0.000554	0.000917	0.000737

toluene	85	<0.005	<0.005	<0.005
ethylbenzene	100	<0.0005	<0.0005	<0.0005
xlenes	175	<0.0015	<0.0015	<0.0015
pH	6-9 units	9.16	9.21	9.23
Specific Conductivity	<4 mmhos/cm	0.39	0.544	0.416
SAR	<12	11.3	5.16	15.2

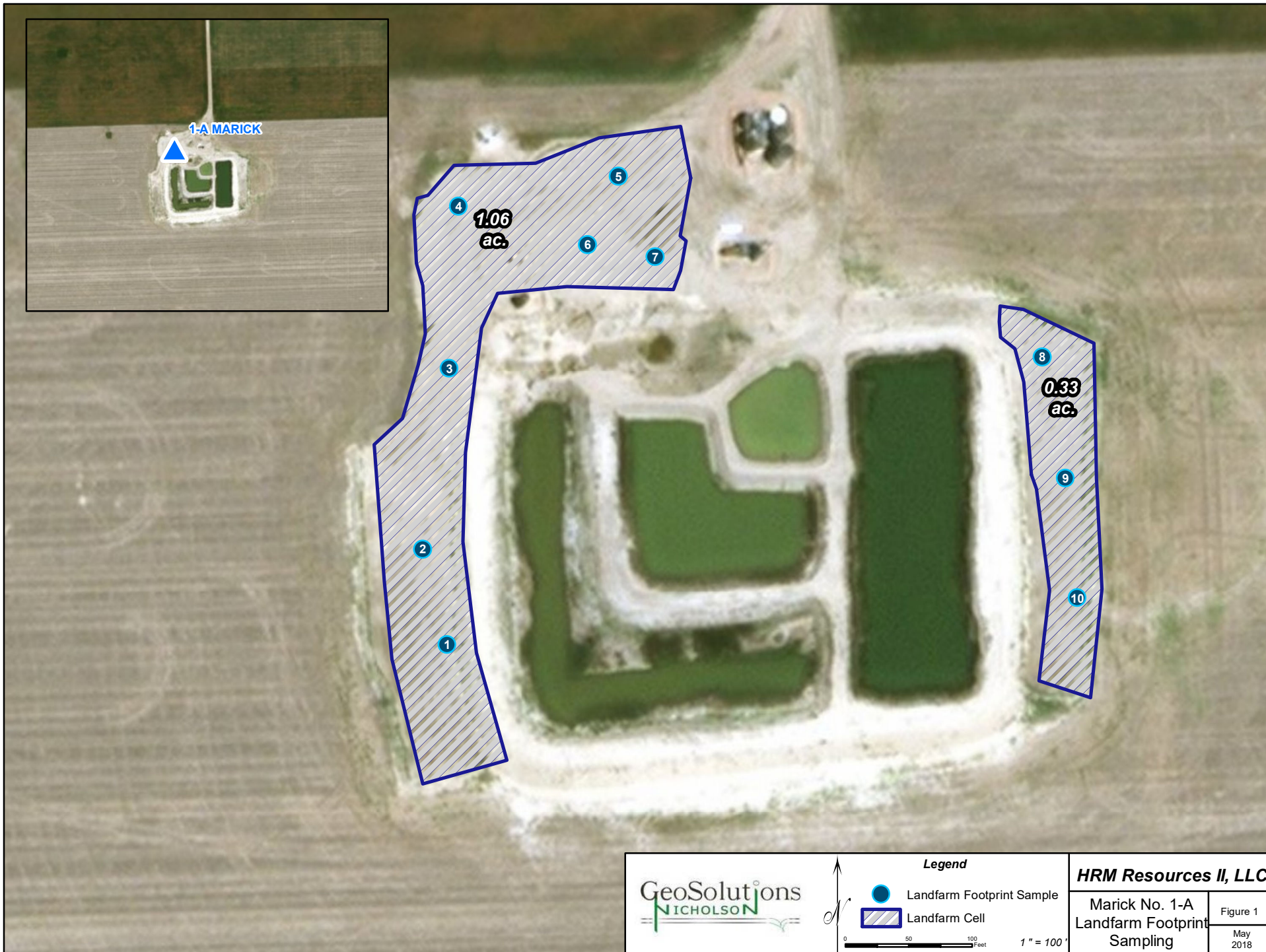
¹The standard is 500 for the combined total of TVPH and TEPH All units in mg/kg except where indicated
Bold values exceed standards

Table 3 Marick No. 1A Footprint Sample Results – June 13, 2018

Parameter	Table 910-1 Standards	Marick-LFF 3	Marick-LFF 4	Marick-LFF 5	Marick-LFF 6	Marick-LFF 7
TVPH – gasoline range	500 ¹	<0.1	<0.1	<0.1	<0.1	<0.1
TEPH – diesel/motor oil range		254.6	247.1	207.7	142	96.9
benzene	0.17	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
toluene	85	<0.005	<0.005	<0.005	<0.005	<0.005
ethylbenzene	100	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
xlenes	175	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
pH	6-9 units	7.37	7.50	7.47	7.60	7.54
Specific Conductivity	<4 mmhos/cm	0.565	1.03	0.945	0.597	0.886
SAR	<12	1.46	1.46	1.05	0.701	0.905

Parameter	Table 910-1 Standards	Marick-LFF 8	Marick-LFF 9	Marick-LFF 10
pH	6-9 units	7.77	7.72	7.83
Specific Conductivity	<4 mmhos/cm	0.673	0.627	0.59
SAR	<12	NA	NA	2.38

¹The standard is 500 for the combined total of TVPH and TEPH All units in mg/kg except where indicated



APPENDIX A
Landfill Gatehouse Summary

App A_Marick
HRM Resources II LLC

Ticket Date	Ticket ID	Cust Code	MAS Unique ID	Manifest	Profile	Truck	Material	Material Description	Origin	Rate Unit	Rate Qty	Yards
4/30/2018	3107129	0015549	150419453005	468713	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARKCK 1A	CYD	17	17
4/30/2018	3107134	0015549	150419453005	468724	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARKCK 1A	CYD	17	17
4/30/2018	3107138	0015549	150419453005	468723	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARKCK 1A	CYD	17	17
4/30/2018	3107140	0015549	150419453005	468725	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARKCK 1A	CYD	17	17
4/30/2018	3107160	0015549	150419453005	468726	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARKCK 1A	CYD	17	17
4/30/2018	3107176	0015549	150419453005	468727	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARKCK 1A	CYD	17	17
4/30/2018	3107182	0015549	150419453005	468730	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARKCK 1A	CYD	17	17
4/30/2018	3107201	0015549	150419453005	468728	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARKCK 1A	CYD	17	17
4/30/2018	3107249	0015549	150419453005	468715	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107252	0015549	150419453005	468722	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107253	0015549	150419453005	468721	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107254	0015549	150419453005	468731	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107255	0015549	150419453005	468720	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107256	0015549	150419453005	468718	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107257	0015549	150419453005	468704	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107258	0015549	150419453005	468732	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107259	0015549	150419453005	468707	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107261	0015549	150419453005	468708	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107262	0015549	150419453005	468709	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107264	0015549	150419453005	468710	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107266	0015549	150419453005	468719	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107268	0015549	150419453005	468729	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107270	0015549	150419453005	468705	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107271	0015549	150419453005	468702	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107273	0015549	150419453005	468703	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107275	0015549	150419453005	468711	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107276	0015549	150419453005	468712	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107279	0015549	150419453005	468714	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107281	0015549	150419453005	468716	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107282	0015549	150419453005	468717	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107386	0015549	150419453005	468733	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107431	0015549	150419453005	468735	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107435	0015549	150419453005	468734	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107437	0015549	150419453005	468736	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107443	0015549	150419453005	468738	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107450	0015549	150419453005	468737	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107471	0015549	150419453005	468742	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17

App A_Marick
HRM Resources II LLC

4/30/2018	3107477	0015549	150419453005	468741	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107488	0015549	150419453005	468743	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107493	0015549	150419453005	468740	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107497	0015549	150419453005	468739	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107518	0015549	150419453005	468744	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
5/1/2018	3107633	0015549	150419453005	468747	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
5/1/2018	3107634	0015549	150419453005	468750	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
5/1/2018	3107636	0015549	150419453005	468746	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
5/1/2018	3107638	0015549	150419453005	468749	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
5/1/2018	3107640	0015549	150419453005	468748	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
5/1/2018	3107641	0015549	150419453005	468751	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
5/1/2018	3107648	0015549	150419453005	468752	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
5/1/2018	3107679	0015549	150419453005	468753	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
5/1/2018	3107691	0015549	150419453005	468745	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
5/1/2018	3107710	0015549	150419453005	468754	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
4/30/2018	3107784	0015549	150419453005	468706	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
5/1/2018	3107792	0015549	150419453005	468755	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
5/1/2018	3107877	0015549	150419453005	468756	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
5/1/2018	3107884	0015549	150419453005	468757	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
5/1/2018	3107907	0015549	150419453005	468758	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
5/1/2018	3107919	0015549	150419453005	468760	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
5/1/2018	3107936	0015549	150419453005	468759	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
5/1/2018	3107964	0015549	150419453005	468762	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
5/1/2018	3108022	0015549	150419453005	468767	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
5/1/2018	3108038	0015549	150419453005	468766	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
5/1/2018	3108041	0015549	150419453005	468761	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
5/1/2018	3108043	0015549	150419453005	468764	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
5/1/2018	3108048	0015549	150419453005	468768	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17
5/1/2018	3108058	0015549	150419453005	468765	120980CO	1	ContSoilPet-Cubic Yards	Cont. Soil - Petroleum	MARICK 1A	CYD	17	17

App A_Marick
HRM Resources II LLC

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APPENDIX B

Laboratory Reports

May 08, 2018

HRM Resources, LLC - Denver, CO

Sample Delivery Group: L990680

Samples Received: 05/03/2018

Project Number:

Description: Marick

Report To: Dave Nicholson
410 17th St., Ste. 1600
Denver, CO 80202

Entire Report Reviewed By:



Mark W. Beasley

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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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



MARICK-LFF-1 L990680-01 Solid

Collected by
D. Nicholson

Collected date/time
05/01/18 13:00

Received date/time
05/03/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1106700	1	05/06/18 23:02	05/07/18 14:22	ST
Wet Chemistry by Method 9045D	WG1106654	1	05/04/18 08:42	05/04/18 10:00	MLW
Wet Chemistry by Method 9050AMod	WG1107997	1	05/07/18 21:09	05/07/18 22:06	MZ
Volatile Organic Compounds (GC) by Method 8015/8021	WG1106866	1	05/03/18 15:36	05/04/18 14:28	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1106798	1	05/03/18 17:08	05/04/18 00:26	DMW

¹ Cp

² Tc

³ Ss

⁴ Cn

MARICK-LFF-2 L990680-02 Solid

Collected by
D. Nicholson

Collected date/time
05/01/18 13:10

Received date/time
05/03/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1106700	1	05/06/18 23:02	05/07/18 14:26	ST
Wet Chemistry by Method 9045D	WG1106654	1	05/04/18 08:42	05/04/18 10:00	MLW
Wet Chemistry by Method 9050AMod	WG1107997	1	05/07/18 21:09	05/07/18 22:06	MZ
Volatile Organic Compounds (GC) by Method 8015/8021	WG1106866	1	05/03/18 15:36	05/04/18 15:33	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1106798	1	05/03/18 17:08	05/04/18 00:42	DMW

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

MARICK-LFF-3 L990680-03 Solid

Collected by
D. Nicholson

Collected date/time
05/01/18 13:15

Received date/time
05/03/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1106700	1	05/06/18 23:02	05/07/18 14:29	ST
Wet Chemistry by Method 9045D	WG1106654	1	05/04/18 08:42	05/04/18 10:00	MLW
Wet Chemistry by Method 9050AMod	WG1107997	1	05/07/18 21:09	05/07/18 22:06	MZ
Volatile Organic Compounds (GC) by Method 8015/8021	WG1106866	1	05/03/18 15:36	05/04/18 15:55	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1106798	50	05/03/18 17:08	05/04/18 01:14	DMW

⁹ Sc

MARICK-LFF-4 L990680-04 Solid

Collected by
D. Nicholson

Collected date/time
05/01/18 13:20

Received date/time
05/03/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1106700	1	05/06/18 23:02	05/07/18 14:33	ST
Wet Chemistry by Method 9045D	WG1106654	1	05/04/18 08:42	05/04/18 10:00	MLW
Wet Chemistry by Method 9050AMod	WG1107997	1	05/07/18 21:09	05/07/18 22:06	MZ
Volatile Organic Compounds (GC) by Method 8015/8021	WG1106866	1	05/03/18 15:36	05/04/18 16:17	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1106798	20	05/03/18 17:08	05/04/18 00:58	DMW

MARICK-LFF-5 L990680-05 Solid

Collected by
D. Nicholson

Collected date/time
05/01/18 13:25

Received date/time
05/03/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1106700	1	05/06/18 23:02	05/07/18 14:36	ST
Wet Chemistry by Method 9045D	WG1106654	1	05/04/18 08:42	05/04/18 10:00	MLW
Wet Chemistry by Method 9050AMod	WG1107997	1	05/07/18 21:09	05/07/18 22:06	MZ
Volatile Organic Compounds (GC) by Method 8015/8021	WG1106866	1	05/03/18 15:36	05/04/18 16:39	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1106798	50	05/03/18 17:08	05/04/18 01:30	DMW

ACCOUNT:

HRM Resources, LLC - Denver, CO

PROJECT:

SDG:

L990680

DATE/TIME:

05/08/18 12:39

PAGE:

3 of 19



MARICK-LFF-6 L990680-06 Solid

Collected by
D. NicholsonCollected date/time
05/01/18 13:30Received date/time
05/03/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1106700	1	05/06/18 23:02	05/07/18 14:39	ST
Wet Chemistry by Method 9045D	WG1106654	1	05/04/18 08:42	05/04/18 10:00	MLW
Wet Chemistry by Method 9050AMod	WG1107997	1	05/07/18 21:09	05/07/18 22:06	MZ
Volatile Organic Compounds (GC) by Method 8015/8021	WG1106866	1	05/03/18 15:36	05/04/18 17:01	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1106798	50	05/03/18 17:08	05/04/18 01:45	DMW

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. 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.

Mark W. Beasley
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	1.47		1	05/07/2018 14:22	WG1106700

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.60	T8	1	05/04/2018 10:00	WG1106654

Sample Narrative:

L990680-01 WG1106654: 8.6 at 21.3C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
Specific Conductance	265		10.0	1	05/07/2018 22:06	WG1107997

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	mg/kg		mg/kg			
Benzene	0.000926		0.000500	1	05/04/2018 14:28	WG1106866
Toluene	ND		0.00500	1	05/04/2018 14:28	WG1106866
Ethylbenzene	ND		0.000500	1	05/04/2018 14:28	WG1106866
Total Xylene	ND		0.00150	1	05/04/2018 14:28	WG1106866
TPH (GC/FID) Low Fraction	ND		0.100	1	05/04/2018 14:28	WG1106866
(S) a,a,a-Trifluorotoluene(FID)	79.9		77.0-120		05/04/2018 14:28	WG1106866
(S) a,a,a-Trifluorotoluene(PID)	73.2	J2	75.0-128		05/04/2018 14:28	WG1106866

Sample Narrative:

L990680-01 WG1106866: Surrogate failure due to matrix interference.

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	mg/kg		mg/kg			
C10-C28 Diesel Range	21.4		4.00	1	05/04/2018 00:26	WG1106798
C28-C40 Oil Range	23.4		4.00	1	05/04/2018 00:26	WG1106798
(S) o-Terphenyl	23.5		18.0-148		05/04/2018 00:26	WG1106798

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	1.29		1	05/07/2018 14:26	WG1106700

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.48	T8	1	05/04/2018 10:00	WG1106654

Sample Narrative:

L990680-02 WG1106654: 8.48 at 21.2C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
	194		10.0	1	05/07/2018 22:06	WG1107997

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	05/04/2018 15:33	WG1106866
Toluene	ND		0.00500	1	05/04/2018 15:33	WG1106866
Ethylbenzene	ND		0.000500	1	05/04/2018 15:33	WG1106866
Total Xylene	ND		0.00150	1	05/04/2018 15:33	WG1106866
TPH (GC/FID) Low Fraction	ND		0.100	1	05/04/2018 15:33	WG1106866
(S) a,a,a-Trifluorotoluene(FID)	102		77.0-120		05/04/2018 15:33	WG1106866
(S) a,a,a-Trifluorotoluene(PID)	91.8		75.0-128		05/04/2018 15:33	WG1106866

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	05/04/2018 00:42	WG1106798
C28-C40 Oil Range	ND		4.00	1	05/04/2018 00:42	WG1106798
(S) o-Terphenyl	41.1		18.0-148		05/04/2018 00:42	WG1106798

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	3.03		1	05/07/2018 14:29	WG1106700

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	9.02	T8	1	05/04/2018 10:00	WG1106654

Sample Narrative:

L990680-03 WG1106654: 9.02 at 21.4C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
	523		10.0	1	05/07/2018 22:06	WG1107997

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	0.000837		0.000500	1	05/04/2018 15:55	WG1106866
Toluene	ND		0.00500	1	05/04/2018 15:55	WG1106866
Ethylbenzene	ND		0.000500	1	05/04/2018 15:55	WG1106866
Total Xylene	ND		0.00150	1	05/04/2018 15:55	WG1106866
TPH (GC/FID) Low Fraction	ND		0.100	1	05/04/2018 15:55	WG1106866
(S) a,a,a-Trifluorotoluene(FID)	78.1		77.0-120		05/04/2018 15:55	WG1106866
(S) a,a,a-Trifluorotoluene(PID)	70.6	J2	75.0-128		05/04/2018 15:55	WG1106866

Sample Narrative:

L990680-03 WG1106866: Surrogate failure due to matrix interference.

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	1670		200	50	05/04/2018 01:14	WG1106798
C28-C40 Oil Range	1940		200	50	05/04/2018 01:14	WG1106798
(S) o-Terphenyl	0.000	J7	18.0-148		05/04/2018 01:14	WG1106798

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	5.38		1	05/07/2018 14:33	WG1106700

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.30	T8	1	05/04/2018 10:00	WG1106654

Sample Narrative:

L990680-04 WG1106654: 8.3 at 21.2C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
	501		10.0	1	05/07/2018 22:06	WG1107997

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	05/04/2018 16:17	WG1106866
Toluene	ND		0.00500	1	05/04/2018 16:17	WG1106866
Ethylbenzene	ND		0.000500	1	05/04/2018 16:17	WG1106866
Total Xylene	ND		0.00150	1	05/04/2018 16:17	WG1106866
TPH (GC/FID) Low Fraction	ND		0.100	1	05/04/2018 16:17	WG1106866
(S) a,a,a-Trifluorotoluene(FID)	99.3		77.0-120		05/04/2018 16:17	WG1106866
(S) a,a,a-Trifluorotoluene(PID)	89.4		75.0-128		05/04/2018 16:17	WG1106866

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	230		80.0	20	05/04/2018 00:58	WG1106798
C28-C40 Oil Range	276		80.0	20	05/04/2018 00:58	WG1106798
(S) o-Terphenyl	0.000	J7	18.0-148		05/04/2018 00:58	WG1106798

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	1.85		1	05/07/2018 14:36	WG1106700

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.56	T8	1	05/04/2018 10:00	WG1106654

Sample Narrative:

L990680-05 WG1106654: 8.56 at 21.3C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
	298		10.0	1	05/07/2018 22:06	WG1107997

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	05/04/2018 16:39	WG1106866
Toluene	ND		0.00500	1	05/04/2018 16:39	WG1106866
Ethylbenzene	ND		0.000500	1	05/04/2018 16:39	WG1106866
Total Xylene	ND		0.00150	1	05/04/2018 16:39	WG1106866
TPH (GC/FID) Low Fraction	ND		0.100	1	05/04/2018 16:39	WG1106866
(S) a,a,a-Trifluorotoluene(FID)	95.7		77.0-120		05/04/2018 16:39	WG1106866
(S) a,a,a-Trifluorotoluene(PID)	85.9		75.0-128		05/04/2018 16:39	WG1106866

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	1760		200	50	05/04/2018 01:30	WG1106798
C28-C40 Oil Range	1800		200	50	05/04/2018 01:30	WG1106798
(S) o-Terphenyl	0.000	J7	18.0-148		05/04/2018 01:30	WG1106798

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	1.55		1	05/07/2018 14:39	WG1106700

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.63	T8	1	05/04/2018 10:00	WG1106654

Sample Narrative:

L990680-06 WG1106654: 8.63 at 21.2C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
	529		10.0	1	05/07/2018 22:06	WG1107997

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	mg/kg		mg/kg			
	0.000830		0.000500	1	05/04/2018 17:01	WG1106866
Toluene	ND		0.00500	1	05/04/2018 17:01	WG1106866
Ethylbenzene	ND		0.000500	1	05/04/2018 17:01	WG1106866
Total Xylene	ND		0.00150	1	05/04/2018 17:01	WG1106866
TPH (GC/FID) Low Fraction	ND		0.100	1	05/04/2018 17:01	WG1106866
(S) a,a,a-Trifluorotoluene(FID)	70.3	J2	77.0-120		05/04/2018 17:01	WG1106866
(S) a,a,a-Trifluorotoluene(PID)	64.8	J2	75.0-128		05/04/2018 17:01	WG1106866

Sample Narrative:

L990680-06 WG1106866: Surrogate failure due to matrix interference.

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
C10-C28 Diesel Range	3440		200	50	05/04/2018 01:45	WG1106798
C28-C40 Oil Range	3020		200	50	05/04/2018 01:45	WG1106798
(S) o-Terphenyl	0.000	J7	18.0-148		05/04/2018 01:45	WG1106798

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



L990680-02 Original Sample (OS) • Duplicate (DUP)

(OS) L990680-02 05/04/18 10:00 • (DUP) R3307085-3 05/04/18 10:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.48	8.47	1	0.118		1

Sample Narrative:

OS: 8.48 at 21.2C

DUP: 8.47 at 21C



L990766-05 Original Sample (OS) • Duplicate (DUP)

(OS) L990766-05 05/04/18 10:00 • (DUP) R3307085-4 05/04/18 10:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.83	7.85	1	0.255		1

Sample Narrative:

OS: 7.83 at 21.1C

DUP: 7.85 at 21C

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

(LCS) R3307085-1 05/04/18 10:00 • (LCSD) R3307085-2 05/04/18 10:00

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	su	su	su	%	%	%			%	%
pH	10.0	9.91	9.92	99.1	99.2	99.0-101			0.101	1

Sample Narrative:

LCS: 9.91 at 20.7C

LCSD: 9.92 at 19.9C

Method Blank (MB)

(MB) R3307692-1 05/07/18 22:06				
Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	umhos/cm		umhos/cm	umhos/cm
Specific Conductance	U		10.0	10.0

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

L990680-03 Original Sample (OS) • Duplicate (DUP)

(OS) L990680-03 05/07/18 22:06 • (DUP) R3307692-4 05/07/18 22:06						
Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	umhos/cm	umhos/cm		%		%
Specific Conductance	523	520	1	0.575		20

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

(LCS) R3307692-2 05/07/18 22:06 • (LCSD) R3307692-3 05/07/18 22:06										
Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCSD Result umhos/cm	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Specific Conductance	877	870	873	99.2	99.5	85.0-115			0.344	20

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3307563-5 05/04/18 12:18

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	U		0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	0.0232	⬇	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	104			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	93.3			75.0-128

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

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

(LCS) R3307563-1 05/04/18 09:59 • (LCSD) R3307563-2 05/04/18 10:51

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 %
Benzene	0.0500	0.0509	0.0527	102	105	71.0-121			3.37	20
Toluene	0.0500	0.0513	0.0530	103	106	72.0-120			3.26	20
Ethylbenzene	0.0500	0.0537	0.0555	107	111	76.0-121			3.24	20
Total Xylene	0.150	0.163	0.167	108	111	75.0-124			2.79	20
(S) a,a,a-Trifluorotoluene(FID)				104	104	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				97.7	96.5	75.0-128				

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

(LCS) R3307563-3 05/04/18 11:13 • (LCSD) R3307563-4 05/04/18 11:35

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 %
TPH (GC/FID) Low Fraction	5.50	5.65	5.03	103	91.5	70.0-136			11.6	20
(S) a,a,a-Trifluorotoluene(FID)				102	103	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				103	107	75.0-128				



L990888-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L990888-05 05/05/18 15:55 • (MS) R3307563-6 05/05/18 18:05 • (MSD) R3307563-7 05/05/18 18:27

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 %
TPH (GC/FID) Low Fraction	5.50	3.87	282	269	203	193	25	10.0-147	J5	J5	4.83	30
(S) a,a,a-Trifluorotoluene(FID)					101	101		77.0-120				
(S) a,a,a-Trifluorotoluene(PID)					100	100		75.0-128				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3307005-1 05/03/18 23:23

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C40 Oil Range	U		0.274	4.00
(S) o-Terphenyl	73.2			18.0-148

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

(LCS) R3307005-2 05/03/18 23:39 • (LCSD) R3307005-3 05/03/18 23:55

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 %
C10-C28 Diesel Range	50.0	31.2	30.6	62.4	61.2	50.0-150			1.96	20
(S) o-Terphenyl				72.0	67.7	18.0-148				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(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.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
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.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
T8	Sample(s) received past/too close to holding time expiration.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ 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.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN2000002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater 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.



HRM Resources, LLC - Denver, CO

410 17th St., Ste. 1600
Denver, CO 80202

Billing Information:
Terry Anpe
Accounts Payable
410 17th St., Ste. 1600
Denver, CO 80202

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Report to: Dave Nicholson

Email To: dknicholson@gmail.com

Project Description: Marick

City/State
Collected:

Phone: 303-893-6621

Fax: 303-601-2023

Client Project #

Lab Project #

Collected by (print):

Site/Facility ID #

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)

Same Day Five Day
Next Day 5 Day (Rad Only)
Two Day 10 Day (Rad Only)
☒ Three Day

Quote #

Date Results Needed

No.
of
Cntrs

Immediately

Packed on Ice N ☒ Y

Sample ID

Comp/Grab

Matrix *

Depth

Date

Time

Marick-LFF-1

SS

5/1

1300

4

Marick-LFF-2

1310

Marick-LFF-3

1315

Marick-LFF-4

1320

Marick-LFF-5

1325

Marick-LFF-6

1330

TPH/BTEX

TEPH (diesel + motor oil)

SAR

PH, SPON

L# L990680

D100

Acctnum: HRMRESDCO

Template:

Prelogin:

T5R: 134 - Mark W. Beasley

PB:

Shipped Via:

Remarks

Sample # (lab only)

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

Samples returned via:

☐ UPS ☐ FedEx ☐ Courier

Tracking # 4380 6861 2479

pH Temp

Flow Other

Sample Receipt Checklist

COC Seal Present/Intact: ☒ Y ☐ N
COC Signed/Accurate: ☒ Y ☐ N
Bottles arrive intact: ☒ Y ☐ N
Correct bottles used: ☒ Y ☐ N
Sufficient volume sent: ☒ Y ☐ N
If Applicable
VOA Zero Headspace: ☒ Y ☐ N
Preservation Correct/Checked: ☒ Y ☐ N

Relinquished by (Signature)

Date:

Time:

Received by (Signature)

Trip Blank Received: Yes ☒ NO
HCL / MeOH
TBR

Relinquished by (Signature)

Date:

Time:

Received by (Signature)

Temp: °C 0.82
Bottles Received: 24

Relinquished by (Signature)

Date:

Time:

Received for lab by (Signature)

Date: 5/3/18
Time: 8145

Hold:

Condition:
NCF / OK

June 07, 2018

HRM Resources, LLC - Denver, CO

Sample Delivery Group: L998966
Samples Received: 06/05/2018
Project Number:
Description: HRM Landfarm Sampling

Report To: Dave Nicholson
410 17th St., Ste. 1600
Denver, CO 80202

Entire Report Reviewed By:



Mark W. Beasley
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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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



MARICK-LFF-3 L998966-01 Solid

Collected by
DK Nicholson

Collected date/time
06/04/18 08:50

Received date/time
06/05/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1120158	1	06/06/18 10:48	06/07/18 10:08	TRB
Wet Chemistry by Method 9045D	WG1119954	1	06/05/18 15:18	06/05/18 17:07	MLW
Wet Chemistry by Method 9050AMod	WG1120121	1	06/05/18 14:40	06/05/18 15:53	MJA
Volatile Organic Compounds (GC) by Method 8015/8021	WG1120304	1	06/05/18 16:54	06/06/18 02:53	RAS
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1120926	20	06/06/18 20:50	06/07/18 05:35	DMW

¹ Cp

² Tc

³ Ss

⁴ Cn

MARICK-LFF-4 L998966-02 Solid

Collected by
DK Nicholson

Collected date/time
06/04/18 08:55

Received date/time
06/05/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1120158	1	06/06/18 10:48	06/07/18 10:10	TRB
Wet Chemistry by Method 9045D	WG1119954	1	06/05/18 15:18	06/05/18 17:07	MLW
Wet Chemistry by Method 9050AMod	WG1120121	1	06/05/18 14:40	06/05/18 15:53	MJA
Volatile Organic Compounds (GC) by Method 8015/8021	WG1120304	1	06/05/18 16:54	06/06/18 03:14	RAS
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1120926	10	06/06/18 20:50	06/07/18 04:07	DMW

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

MARICK-LFF-5 L998966-03 Solid

Collected by
DK Nicholson

Collected date/time
06/04/18 09:00

Received date/time
06/05/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1120158	1	06/06/18 10:48	06/07/18 10:13	TRB
Wet Chemistry by Method 9045D	WG1119954	1	06/05/18 15:18	06/05/18 17:07	MLW
Wet Chemistry by Method 9050AMod	WG1120121	1	06/05/18 14:40	06/05/18 15:53	MJA
Volatile Organic Compounds (GC) by Method 8015/8021	WG1120304	1	06/05/18 16:54	06/06/18 03:35	RAS
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1120926	20	06/06/18 20:50	06/07/18 04:45	DMW

⁹ Sc

MARICK-LFF-6 L998966-04 Solid

Collected by
DK Nicholson

Collected date/time
06/04/18 09:10

Received date/time
06/05/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1120158	1	06/06/18 10:48	06/07/18 10:16	TRB
Wet Chemistry by Method 9045D	WG1119954	1	06/05/18 15:18	06/05/18 17:07	MLW
Wet Chemistry by Method 9050AMod	WG1120121	1	06/05/18 14:40	06/05/18 15:53	MJA
Volatile Organic Compounds (GC) by Method 8015/8021	WG1120304	1	06/05/18 16:54	06/06/18 03:56	RAS
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1120926	20	06/06/18 20:50	06/07/18 04:58	DMW

MARICK-LFF-7 L998966-05 Solid

Collected by
DK Nicholson

Collected date/time
06/04/18 09:20

Received date/time
06/05/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1120158	1	06/06/18 10:48	06/07/18 10:18	TRB
Wet Chemistry by Method 9045D	WG1119954	1	06/05/18 15:18	06/05/18 17:07	MLW
Wet Chemistry by Method 9050AMod	WG1120121	1	06/05/18 14:40	06/05/18 15:53	MJA
Volatile Organic Compounds (GC) by Method 8015/8021	WG1120304	1	06/05/18 16:54	06/06/18 04:17	RAS
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1120926	20	06/06/18 20:50	06/07/18 05:10	DMW

ACCOUNT:

HRM Resources, LLC - Denver, CO

PROJECT:

SDG:

L998966

DATE/TIME:

06/07/18 13:25

PAGE:

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



MARICK-LFF-8 L998966-06 Solid

Collected by
DK Nicholson

Collected date/time
06/04/18 09:25

Received date/time
06/05/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1120158	1	06/06/18 10:48	06/07/18 10:26	TRB
Wet Chemistry by Method 9045D	WG1119954	1	06/05/18 15:18	06/05/18 17:07	MLW
Wet Chemistry by Method 9050AMod	WG1120121	1	06/05/18 14:40	06/05/18 15:53	MJA
Volatile Organic Compounds (GC) by Method 8015/8021	WG1120304	1	06/05/18 16:54	06/06/18 04:38	RAS
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1120926	5	06/06/18 20:50	06/07/18 03:17	DMW

¹ Cp

² Tc

³ Ss

⁴ Cn

MARICK-LFF-9 L998966-07 Solid

Collected by
DK Nicholson

Collected date/time
06/04/18 09:30

Received date/time
06/05/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1120158	1	06/06/18 10:48	06/07/18 10:29	TRB
Wet Chemistry by Method 9045D	WG1119954	1	06/05/18 15:18	06/05/18 17:07	MLW
Wet Chemistry by Method 9050AMod	WG1120121	1	06/05/18 14:40	06/05/18 15:53	MJA
Volatile Organic Compounds (GC) by Method 8015/8021	WG1120304	1	06/05/18 16:54	06/06/18 04:59	RAS
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1120926	10	06/06/18 20:50	06/07/18 04:20	DMW

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

MARICK-LFF-10 L998966-08 Solid

Collected by
DK Nicholson

Collected date/time
06/04/18 09:35

Received date/time
06/05/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1120158	1	06/06/18 10:48	06/07/18 10:31	TRB
Wet Chemistry by Method 9045D	WG1119954	1	06/05/18 15:18	06/05/18 17:07	MLW
Wet Chemistry by Method 9050AMod	WG1120121	1	06/05/18 14:40	06/05/18 15:53	MJA
Volatile Organic Compounds (GC) by Method 8015/8021	WG1120304	1	06/05/18 16:54	06/06/18 05:20	RAS
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1120926	10	06/06/18 20:50	06/07/18 04:32	DMW

⁹ Sc

ACCOUNT:

HRM Resources, LLC - Denver, CO

PROJECT:

SDG:

L998966

DATE/TIME:

06/07/18 13:25

PAGE:

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All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. 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.

Mark W. Beasley
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	9.56		1	06/07/2018 10:08	WG1120158

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	9.00	T8	1	06/05/2018 17:07	WG1119954

Sample Narrative:

L998966-01 WG1119954: 9 at 20.1C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
	315		10.0	1	06/05/2018 15:53	WG1120121

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	0.000653		0.000500	1	06/06/2018 02:53	WG1120304
Toluene	ND		0.00500	1	06/06/2018 02:53	WG1120304
Ethylbenzene	ND		0.000500	1	06/06/2018 02:53	WG1120304
Total Xylene	ND		0.00150	1	06/06/2018 02:53	WG1120304
TPH (GC/FID) Low Fraction	ND		0.100	1	06/06/2018 02:53	WG1120304
(S) a,a,a-Trifluorotoluene(FID)	99.3		77.0-120		06/06/2018 02:53	WG1120304
(S) a,a,a-Trifluorotoluene(PID)	104		75.0-128		06/06/2018 02:53	WG1120304

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	1290		80.0	20	06/07/2018 05:35	WG1120926
C28-C40 Oil Range	957		80.0	20	06/07/2018 05:35	WG1120926
(S) o-Terphenyl	88.0		18.0-148		06/07/2018 05:35	WG1120926

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	8.26		1	06/07/2018 10:10	WG1120158

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.92	T8	1	06/05/2018 17:07	WG1119954

Sample Narrative:

L998966-02 WG1119954: 8.92 at 19.7C

Wet Chemistry by Method 9050AMod

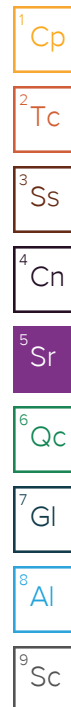
Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
	208		10.0	1	06/05/2018 15:53	WG1120121

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	06/06/2018 03:14	WG1120304
Toluene	ND		0.00500	1	06/06/2018 03:14	WG1120304
Ethylbenzene	ND		0.000500	1	06/06/2018 03:14	WG1120304
Total Xylene	ND		0.00150	1	06/06/2018 03:14	WG1120304
TPH (GC/FID) Low Fraction	ND		0.100	1	06/06/2018 03:14	WG1120304
(S) a,a,a-Trifluorotoluene(FID)	89.7		77.0-120		06/06/2018 03:14	WG1120304
(S) a,a,a-Trifluorotoluene(PID)	94.9		75.0-128		06/06/2018 03:14	WG1120304

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	418		40.0	10	06/07/2018 04:07	WG1120926
C28-C40 Oil Range	345		40.0	10	06/07/2018 04:07	WG1120926
(S) o-Terphenyl	73.8		18.0-148		06/07/2018 04:07	WG1120926





Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.93		1	06/07/2018 10:13	WG1120158

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.41	T8	1	06/05/2018 17:07	WG1119954

Sample Narrative:

L998966-03 WG1119954: 8.41 at 19.7C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
	193		10.0	1	06/05/2018 15:53	WG1120121

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	06/06/2018 03:35	WG1120304
Toluene	ND		0.00500	1	06/06/2018 03:35	WG1120304
Ethylbenzene	ND		0.000500	1	06/06/2018 03:35	WG1120304
Total Xylene	ND		0.00150	1	06/06/2018 03:35	WG1120304
TPH (GC/FID) Low Fraction	ND		0.100	1	06/06/2018 03:35	WG1120304
(S) a,a,a-Trifluorotoluene(FID)	98.2		77.0-120		06/06/2018 03:35	WG1120304
(S) a,a,a-Trifluorotoluene(PID)	103		75.0-128		06/06/2018 03:35	WG1120304

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	663		80.0	20	06/07/2018 04:45	WG1120926
C28-C40 Oil Range	743		80.0	20	06/07/2018 04:45	WG1120926
(S) o-Terphenyl	82.8		18.0-148		06/07/2018 04:45	WG1120926

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	7.09		1	06/07/2018 10:16	WG1120158

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.77	T8	1	06/05/2018 17:07	WG1119954

Sample Narrative:

L998966-04 WG1119954: 8.77 at 19.4C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
	319		10.0	1	06/05/2018 15:53	WG1120121

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	06/06/2018 03:56	WG1120304
Toluene	ND		0.00500	1	06/06/2018 03:56	WG1120304
Ethylbenzene	ND		0.000500	1	06/06/2018 03:56	WG1120304
Total Xylene	ND		0.00150	1	06/06/2018 03:56	WG1120304
TPH (GC/FID) Low Fraction	ND		0.100	1	06/06/2018 03:56	WG1120304
(S) a,a,a-Trifluorotoluene(FID)	96.3		77.0-120		06/06/2018 03:56	WG1120304
(S) a,a,a-Trifluorotoluene(PID)	101		75.0-128		06/06/2018 03:56	WG1120304

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	1200		80.0	20	06/07/2018 04:58	WG1120926
C28-C40 Oil Range	843		80.0	20	06/07/2018 04:58	WG1120926
(S) o-Terphenyl	83.6		18.0-148		06/07/2018 04:58	WG1120926

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	6.42		1	06/07/2018 10:18	WG1120158

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.22	T8	1	06/05/2018 17:07	WG1119954

Sample Narrative:

L998966-05 WG1119954: 8.22 at 20.1C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
	715		10.0	1	06/05/2018 15:53	WG1120121

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	06/06/2018 04:17	WG1120304
Toluene	ND		0.00500	1	06/06/2018 04:17	WG1120304
Ethylbenzene	ND		0.000500	1	06/06/2018 04:17	WG1120304
Total Xylene	ND		0.00150	1	06/06/2018 04:17	WG1120304
TPH (GC/FID) Low Fraction	ND		0.100	1	06/06/2018 04:17	WG1120304
(S) a,a,a-Trifluorotoluene(FID)	98.7		77.0-120		06/06/2018 04:17	WG1120304
(S) a,a,a-Trifluorotoluene(PID)	103		75.0-128		06/06/2018 04:17	WG1120304

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	668		80.0	20	06/07/2018 05:10	WG1120926
C28-C40 Oil Range	564		80.0	20	06/07/2018 05:10	WG1120926
(S) o-Terphenyl	87.0		18.0-148		06/07/2018 05:10	WG1120926

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	11.3		1	06/07/2018 10:26	WG1120158

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	9.16	T8	1	06/05/2018 17:07	WG1119954

Sample Narrative:

L998966-06 WG1119954: 9.16 at 19.7C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
	390		10.0	1	06/05/2018 15:53	WG1120121

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	0.000554		0.000500	1	06/06/2018 04:38	WG1120304
Toluene	ND		0.00500	1	06/06/2018 04:38	WG1120304
Ethylbenzene	ND		0.000500	1	06/06/2018 04:38	WG1120304
Total Xylene	ND		0.00150	1	06/06/2018 04:38	WG1120304
TPH (GC/FID) Low Fraction	ND		0.100	1	06/06/2018 04:38	WG1120304
(S) a,a,a-Trifluorotoluene(FID)	97.7		77.0-120		06/06/2018 04:38	WG1120304
(S) a,a,a-Trifluorotoluene(PID)	103		75.0-128		06/06/2018 04:38	WG1120304

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	133		20.0	5	06/07/2018 03:17	WG1120926
C28-C40 Oil Range	115		20.0	5	06/07/2018 03:17	WG1120926
(S) o-Terphenyl	42.0		18.0-148		06/07/2018 03:17	WG1120926

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	5.16		1	06/07/2018 10:29	WG1120158

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	9.21	T8	1	06/05/2018 17:07	WG1119954

Sample Narrative:

L998966-07 WG1119954: 9.21 at 19.7C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
	544		10.0	1	06/05/2018 15:53	WG1120121

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	0.000917		0.000500	1	06/06/2018 04:59	WG1120304
Toluene	ND		0.00500	1	06/06/2018 04:59	WG1120304
Ethylbenzene	ND		0.000500	1	06/06/2018 04:59	WG1120304
Total Xylene	ND		0.00150	1	06/06/2018 04:59	WG1120304
TPH (GC/FID) Low Fraction	ND		0.100	1	06/06/2018 04:59	WG1120304
(S) a,a,a-Trifluorotoluene(FID)	96.9		77.0-120		06/06/2018 04:59	WG1120304
(S) a,a,a-Trifluorotoluene(PID)	102		75.0-128		06/06/2018 04:59	WG1120304

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	257		40.0	10	06/07/2018 04:20	WG1120926
C28-C40 Oil Range	222		40.0	10	06/07/2018 04:20	WG1120926
(S) o-Terphenyl	65.4		18.0-148		06/07/2018 04:20	WG1120926

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	15.2		1	06/07/2018 10:31	WG1120158

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	9.23	T8	1	06/05/2018 17:07	WG1119954

Sample Narrative:

L998966-08 WG1119954: 9.23 at 19.3C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
	416		10.0	1	06/05/2018 15:53	WG1120121

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	0.000737		0.000500	1	06/06/2018 05:20	WG1120304
Toluene	ND		0.00500	1	06/06/2018 05:20	WG1120304
Ethylbenzene	ND		0.000500	1	06/06/2018 05:20	WG1120304
Total Xylene	ND		0.00150	1	06/06/2018 05:20	WG1120304
TPH (GC/FID) Low Fraction	ND		0.100	1	06/06/2018 05:20	WG1120304
(S) a,a,a-Trifluorotoluene(FID)	99.4		77.0-120		06/06/2018 05:20	WG1120304
(S) a,a,a-Trifluorotoluene(PID)	104		75.0-128		06/06/2018 05:20	WG1120304

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	194		40.0	10	06/07/2018 04:32	WG1120926
C28-C40 Oil Range	212		40.0	10	06/07/2018 04:32	WG1120926
(S) o-Terphenyl	69.1		18.0-148		06/07/2018 04:32	WG1120926

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

L998966-07 Original Sample (OS) • Duplicate (DUP)

(OS) L998966-07 06/05/18 17:07 • (DUP) R3315586-4 06/05/18 17:07

Analyte	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
	su	su		%		%
pH	9.21	9.19	1	0.217		1

Sample Narrative:
OS: 9.21 at 19.7C
DUP: 9.19 at 19.8C

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

(LCS) R3315586-1 06/05/18 17:07 • (LCSD) R3315586-2 06/05/18 17:07

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	10.0	9.95	9.96	99.5	99.6	99.0-101			0.100	1

Sample Narrative:
LCS: 9.95 at 19.8C
LCSD: 9.96 at 19.9C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3315547-1 06/05/18 15:53

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L998955-01 Original Sample (OS) • Duplicate (DUP)

(OS) L998955-01 06/05/18 15:53 • (DUP) R3315547-4 06/05/18 15:53

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	307	306	1	0.326		20

L998966-07 Original Sample (OS) • Duplicate (DUP)

(OS) L998966-07 06/05/18 15:53 • (DUP) R3315547-5 06/05/18 15:53

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	544	545	1	0.184		20

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

(LCS) R3315547-2 06/05/18 15:53 • (LCSD) R3315547-3 06/05/18 15:53

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCSD Result umhos/cm	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Specific Conductance	877	872	870	99.4	99.2	85.0-115			0.230	20

Method Blank (MB)

(MB) R3315913-5 06/05/18 22:18

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	0.000299	J	0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	104			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	108			75.0-128

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

(LCS) R3315913-1 06/05/18 20:33 • (LCSD) R3315913-4 06/05/18 21:36

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 %
TPH (GC/FID) Low Fraction	5.50	5.06	4.95	92.0	90.1	70.0-136			2.15	20
(S) a,a,a-Trifluorotoluene(FID)				88.8	88.9	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				113	112	75.0-128				

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

(LCS) R3315913-2 06/05/18 20:54 • (LCSD) R3315913-3 06/05/18 21:15

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 %
Benzene	0.0500	0.0488	0.0489	97.6	97.8	71.0-121			0.291	20
Toluene	0.0500	0.0485	0.0485	97.0	97.1	72.0-120			0.0302	20
Ethylbenzene	0.0500	0.0529	0.0531	106	106	76.0-121			0.319	20
Total Xylene	0.150	0.160	0.161	107	108	75.0-124			0.809	20
(S) a,a,a-Trifluorotoluene(FID)				97.4	96.7	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				104	104	75.0-128				

L998658-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L998658-01 06/06/18 05:41 • (MS) R3315913-6 06/06/18 06:03 • (MSD) R3315913-7 06/06/18 06:24

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 %
Benzene	0.0500	ND	0.574	0.555	45.9	44.4	25	10.0-146			3.36	29
Toluene	0.0500	ND	0.671	0.652	53.7	52.2	25	10.0-143			2.83	30
Ethylbenzene	0.0500	0.0145	0.910	0.882	71.7	69.4	25	10.0-147			3.22	31
Total Xylene	0.150	0.311	3.05	2.93	73.0	69.8	25	10.0-149		J6	4.01	30
(S) a,a,a-Trifluorotoluene(FID)					102	99.9		77.0-120				
(S) a,a,a-Trifluorotoluene(PID)					105	105		75.0-128				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L998658-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L998658-01 06/06/18 05:41 • (MS) R3315913-8 06/06/18 06:45 • (MSD) R3315913-9 06/06/18 07:06

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 %
TPH (GC/FID) Low Fraction	5.50	33.5	78.1	78.8	32.4	32.9	25	10.0-147			0.904	30
(S) a,a,a-Trifluorotoluene(FID)					102	102		77.0-120				
(S) a,a,a-Trifluorotoluene(PID)					107	107		75.0-128				

Method Blank (MB)

(MB) R3316069-1 06/07/18 00:54

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C40 Oil Range	U		0.274	4.00
(S) o-Terphenyl	77.7			18.0-148

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

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

(LCS) R3316069-2 06/07/18 01:07 • (LCSD) R3316069-3 06/07/18 01:21

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 %
C10-C28 Diesel Range	50.0	33.3	35.2	66.6	70.3	50.0-150			5.41	20
(S) o-Terphenyl				74.7	81.3	18.0-148				

L998955-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L998955-01 06/07/18 03:29 • (MS) R3316069-4 06/07/18 03:42 • (MSD) R3316069-5 06/07/18 03:55

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 %
C10-C28 Diesel Range	50.0	ND	82.3	106	122	168	10	50.0-150		J3 J5	24.8	20
(S) o-Terphenyl					59.6	63.2		18.0-148				



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(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.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
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.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
T8	Sample(s) received past/too close to holding time expiration.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 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.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN2000002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater 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.



Company Name/Address:

Nicholson GeoSolutions. LLC.3433 E. Lake Dr.
Centennial, CO 80121

Billing Information:

Terry Pape
HRM Resources II, LLC
410 17th Street, Suite 1600
Denver, CO 80202

Report to:

Dave Nicholson

Project
Description: HRM Landfarm Sampling

Phone: 303-601-2023

Fax:

Collected by (print):

Client Project #

City/State
Collected:

Lab Project #

Collected by (signature):

Rush? (Lab MUST Be Notified)

Same Day 200%
Next Day 100%
~~Two Day~~ 50%
Three Day 25%

Date Results Needed

Email? No ☒ YesFAX? ☒ No ☐ YesNo.
of
CntsPacked on Ice: N ☐ Y ☒

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	TEPH(8015)Diesel & Oil Range (1) 4oz Clear-No Pres	BTEX/TVPH (1) 4oz Clear - No Pres	SAR - 4oz Clear - No Pres	SPCON, pH - 4oz Clear - No Pres										
Marick-LFF-3		SS		6/4	0850	4	X	X	X	X									61
Marick-LFF-4		SS			0855		X	X	X	X									62
Marick-LFF-5		SS			0900		X	X	X	X									63
Marick-LFF-6		SS			0910		X	X	X	X									64
Marick-LFF-7		SS			0920		X	X	X	X									65
Marick-LFF-8		SS			0925		X	X	X	X									66
Marick-LFF-9		SS			0930		X	X	X	X									67
Marick-LFF-10		SS			0935		X	X	X	X									68
		SS																	
		SS																	

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other _____

pH _____ Temp _____

Flow _____ Other _____

Hold #

Remarks:

4361 6933 5386

Relinquished by: (Signature)

Date:

6/4/18

Time:

1500

Received by: (Signature)

FedEx

Samples returned via: ☐ UPS☐ FedEx ☐ Courier ☐ _____

Condition: (lab use only)

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: °C Bottles Received:

0.23 32

COC Seal Intact: ☐ Y ☐ N ☒ NA

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: Time:

6/5/18 8:45

pH Checked:

NCF:

Chain of Custody Page 1 of 1


ESC
 L-A-B S-C-I-E-N-C-E-S

YOUR LAB OF CHOICE

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L#

E002

Acctnum HRMRESDCO

Template:

Prelogin:


TSR:

Cooler:

Shipped Via:

Rem./Contaminant Sample # (lab only)

ESC LAB SCIENCES Cooler Receipt Form

Client: <i>HRMP ResDCo</i>	SDG#	998966		
Cooler Received/Opened On: 6/5/18	Temperature:	0.2		
Received By: Kevin Turner				
Signature: 				
Receipt Check List		NP	Yes	No
		/		
COC Signed / Accurate?			/	
Bottles arrive intact?			/	
Correct bottles used?			/	
Sufficient volume sent?			/	
If Applicable				
VOA Zero headspace?				
Preservation Correct / Checked?				

June 15, 2018

HRM Resources, LLC - Denver, CO

Sample Delivery Group: L1001547
Samples Received: 06/14/2018
Project Number:
Description: HRM Landfarm Sampling

Report To: Dave Nicholson
410 17th St., Ste. 1600
Denver, CO 80202

Entire Report Reviewed By:



Mark W. Beasley
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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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



MARICK- S-23 L1001547-01 Solid

Collected by
D. Cox

Collected date/time
06/13/18 13:40

Received date/time
06/14/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1124553	1	06/14/18 11:46	06/15/18 12:33	WBD
Wet Chemistry by Method 9045D	WG1124591	1	06/14/18 16:00	06/15/18 09:00	AJG
Wet Chemistry by Method 9050AMod	WG1124605	1	06/14/18 15:33	06/14/18 16:11	MJA
Volatile Organic Compounds (GC) by Method 8015/8021	WG1124518	1	06/14/18 13:24	06/14/18 15:22	RAS
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1124902	5	06/14/18 16:07	06/14/18 22:13	DMW

¹ Cp

² Tc

³ Ss

⁴ Cn

MARICK-LFF-3 L1001547-02 Solid

Collected by
D. Cox

Collected date/time
06/13/18 13:50

Received date/time
06/14/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1124553	1	06/14/18 11:46	06/15/18 12:36	WBD
Wet Chemistry by Method 9045D	WG1124591	1	06/14/18 16:00	06/15/18 09:00	AJG
Wet Chemistry by Method 9050AMod	WG1124605	1	06/14/18 15:33	06/14/18 16:11	MJA
Volatile Organic Compounds (GC) by Method 8015/8021	WG1124518	1	06/14/18 13:24	06/14/18 15:43	RAS
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1124902	10	06/14/18 16:07	06/14/18 23:48	DMW

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

MARICK-LFF-4 L1001547-03 Solid

Collected by
D. Cox

Collected date/time
06/13/18 13:55

Received date/time
06/14/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1124553	1	06/14/18 11:46	06/15/18 12:39	WBD
Wet Chemistry by Method 9045D	WG1124591	1	06/14/18 16:00	06/15/18 09:00	AJG
Wet Chemistry by Method 9050AMod	WG1124605	1	06/14/18 15:33	06/14/18 16:11	MJA
Volatile Organic Compounds (GC) by Method 8015/8021	WG1124518	1	06/14/18 13:24	06/14/18 16:04	RAS
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1124902	10	06/14/18 16:07	06/15/18 00:02	DMW

⁹ Sc

MARICK-LFF-5 L1001547-04 Solid

Collected by
D. Cox

Collected date/time
06/13/18 14:00

Received date/time
06/14/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1124553	1	06/14/18 11:46	06/15/18 12:41	WBD
Wet Chemistry by Method 9045D	WG1124591	1	06/14/18 16:00	06/15/18 09:00	AJG
Wet Chemistry by Method 9050AMod	WG1124605	1	06/14/18 15:33	06/14/18 16:11	MJA
Volatile Organic Compounds (GC) by Method 8015/8021	WG1124518	1	06/14/18 13:24	06/14/18 16:25	RAS
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1124902	10	06/14/18 16:07	06/15/18 00:15	DMW

MARICK-LFF-6 L1001547-05 Solid

Collected by
D. Cox

Collected date/time
06/13/18 14:10

Received date/time
06/14/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1124553	1	06/14/18 11:46	06/15/18 12:44	WBD
Wet Chemistry by Method 9045D	WG1124591	1	06/14/18 16:00	06/15/18 09:00	AJG
Wet Chemistry by Method 9050AMod	WG1124605	1	06/14/18 15:33	06/14/18 16:11	MJA
Volatile Organic Compounds (GC) by Method 8015/8021	WG1124518	1	06/14/18 13:24	06/14/18 16:46	RAS
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1124902	10	06/14/18 16:07	06/14/18 23:35	DMW

ACCOUNT:

HRM Resources, LLC - Denver, CO

PROJECT:

SDG:

L1001547

DATE/TIME:

06/15/18 21:07

PAGE:

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



MARICK-LFF-7 L1001547-06 Solid

Collected by
D. Cox

Collected date/time
06/13/18 14:15

Received date/time
06/14/18 08:45

¹ Cp

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1124553	1	06/14/18 11:46	06/15/18 12:46	WBD
Wet Chemistry by Method 9045D	WG1124591	1	06/14/18 16:00	06/15/18 09:00	AJG
Wet Chemistry by Method 9050AMod	WG1124605	1	06/14/18 15:33	06/14/18 16:11	MJA
Volatile Organic Compounds (GC) by Method 8015/8021	WG1124518	1	06/14/18 13:24	06/14/18 17:08	RAS
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1124902	10	06/14/18 16:07	06/14/18 23:35	DMW
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1124902	5	06/14/18 16:07	06/14/18 22:27	DMW

² Tc

³ Ss

⁴ Cn

⁵ Sr

MARICK-LFF-8 L1001547-07 Solid

Collected by
D. Cox

Collected date/time
06/13/18 14:25

Received date/time
06/14/18 08:45

⁶ Qc

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1124591	1	06/14/18 16:00	06/15/18 09:00	AJG
Wet Chemistry by Method 9050AMod	WG1124605	1	06/14/18 15:33	06/14/18 16:11	MJA

⁷ Gl

⁸ Al

MARICK-LFF-9 L1001547-08 Solid

Collected by
D. Cox

Collected date/time
06/13/18 14:30

Received date/time
06/14/18 08:45

⁹ Sc

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1124591	1	06/14/18 16:00	06/15/18 09:00	AJG
Wet Chemistry by Method 9050AMod	WG1124605	1	06/14/18 15:33	06/14/18 16:11	MJA

MARICK-LFF-10 L1001547-09 Solid

Collected by
D. Cox

Collected date/time
06/13/18 14:40

Received date/time
06/14/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1124553	1	06/14/18 11:46	06/15/18 12:49	WBD
Wet Chemistry by Method 9045D	WG1124591	1	06/14/18 16:00	06/15/18 09:00	AJG
Wet Chemistry by Method 9050AMod	WG1124605	1	06/14/18 15:33	06/14/18 16:11	MJA

LIPPLEMAN-LFF-1 L1001547-10 Solid

Collected by
D. Cox

Collected date/time
06/13/18 15:05

Received date/time
06/14/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1124553	1	06/14/18 11:46	06/15/18 12:52	WBD
Wet Chemistry by Method 9045D	WG1124591	1	06/14/18 16:00	06/15/18 09:00	AJG
Wet Chemistry by Method 9050AMod	WG1124605	1	06/14/18 15:33	06/14/18 16:11	MJA
Volatile Organic Compounds (GC) by Method 8015/8021	WG1124518	1	06/14/18 13:24	06/14/18 17:29	RAS
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1124902	1	06/14/18 16:07	06/14/18 22:00	DMW

HERZBERG-LFF-1 L1001547-11 Solid

Collected by
D. Cox

Collected date/time
06/13/18 15:25

Received date/time
06/14/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1124553	1	06/14/18 11:46	06/15/18 12:54	WBD
Wet Chemistry by Method 9045D	WG1124591	1	06/14/18 16:00	06/15/18 09:00	AJG
Wet Chemistry by Method 9050AMod	WG1124605	1	06/14/18 15:33	06/14/18 16:11	MJA
Volatile Organic Compounds (GC) by Method 8015/8021	WG1124518	1	06/14/18 13:24	06/14/18 17:50	RAS
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1124902	10	06/14/18 16:07	06/14/18 22:41	DMW

ACCOUNT:

HRM Resources, LLC - Denver, CO

PROJECT:

SDG:

L1001547

DATE/TIME:

06/15/18 21:07

PAGE:

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ANDERSON-LFF-1 L1001547-12 Solid

Collected by
D. Cox

Collected date/time
06/13/18 15:45

Received date/time
06/14/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1124553	1	06/14/18 11:46	06/15/18 13:02	WBD
Wet Chemistry by Method 9045D	WG1124591	1	06/14/18 16:00	06/15/18 09:00	AJG
Wet Chemistry by Method 9050AMod	WG1124605	1	06/14/18 15:33	06/14/18 16:11	MJA
Volatile Organic Compounds (GC) by Method 8015/8021	WG1124518	1	06/14/18 13:24	06/14/18 18:11	RAS
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1124902	10	06/14/18 16:07	06/14/18 23:21	DMW

1 Cp

2 Tc

3 Ss

4 Cn

ANDERSON-LFF-3 L1001547-13 Solid

Collected by
D. Cox

Collected date/time
06/13/18 15:50

Received date/time
06/14/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1124553	1	06/14/18 11:46	06/15/18 13:05	WBD
Wet Chemistry by Method 9045D	WG1124591	1	06/14/18 16:00	06/15/18 09:00	AJG
Wet Chemistry by Method 9050AMod	WG1124605	1	06/14/18 15:33	06/14/18 16:11	MJA
Volatile Organic Compounds (GC) by Method 8015/8021	WG1124518	1	06/14/18 13:24	06/14/18 18:32	RAS
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1124902	10	06/14/18 16:07	06/14/18 22:54	DMW

5 Sr

6 Qc

7 Gl

8 Al

ANDERSON-LFF-4 L1001547-14 Solid

Collected by
D. Cox

Collected date/time
06/13/18 16:00

Received date/time
06/14/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1124553	1	06/14/18 11:46	06/15/18 13:07	WBD
Wet Chemistry by Method 9045D	WG1124591	1	06/14/18 16:00	06/15/18 09:00	AJG
Wet Chemistry by Method 9050AMod	WG1124605	1	06/14/18 15:33	06/14/18 16:11	MJA
Volatile Organic Compounds (GC) by Method 8015/8021	WG1124518	1	06/14/18 13:24	06/14/18 18:53	RAS
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1124902	10	06/14/18 16:07	06/14/18 23:08	DMW

9 Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. 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.

Mark W. Beasley
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	1.64		1	06/15/2018 12:33	WG1124553

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.52	T8	1	06/15/2018 09:00	WG1124591

Sample Narrative:

L1001547-01 WG1124591: 7.52 at 22.4C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
Specific Conductance	1010		10.0	1	06/14/2018 16:11	WG1124605

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	06/14/2018 15:22	WG1124518
Toluene	ND		0.00500	1	06/14/2018 15:22	WG1124518
Ethylbenzene	ND		0.000500	1	06/14/2018 15:22	WG1124518
Total Xylene	ND		0.00150	1	06/14/2018 15:22	WG1124518
TPH (GC/FID) Low Fraction	ND		0.100	1	06/14/2018 15:22	WG1124518
(S) a,a,a-Trifluorotoluene(FID)	95.4		77.0-120		06/14/2018 15:22	WG1124518
(S) a,a,a-Trifluorotoluene(PID)	99.4		75.0-128		06/14/2018 15:22	WG1124518

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	48.2		20.0	5	06/14/2018 22:13	WG1124902
C28-C40 Oil Range	81.5		20.0	5	06/14/2018 22:13	WG1124902
(S) o-Terphenyl	58.0		18.0-148		06/14/2018 22:13	WG1124902

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	1.46		1	06/15/2018 12:36	WG1124553

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.37	T8	1	06/15/2018 09:00	WG1124591

Sample Narrative:

L1001547-02 WG1124591: 7.37 at 22.5C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
	565		10.0	1	06/14/2018 16:11	WG1124605

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	06/14/2018 15:43	WG1124518
Toluene	ND		0.00500	1	06/14/2018 15:43	WG1124518
Ethylbenzene	ND		0.000500	1	06/14/2018 15:43	WG1124518
Total Xylene	ND		0.00150	1	06/14/2018 15:43	WG1124518
TPH (GC/FID) Low Fraction	ND		0.100	1	06/14/2018 15:43	WG1124518
(S) a,a,a-Trifluorotoluene(FID)	95.0		77.0-120		06/14/2018 15:43	WG1124518
(S) a,a,a-Trifluorotoluene(PID)	102		75.0-128		06/14/2018 15:43	WG1124518

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	82.6		40.0	10	06/14/2018 23:48	WG1124902
C28-C40 Oil Range	172		40.0	10	06/14/2018 23:48	WG1124902
(S) o-Terphenyl	60.7		18.0-148		06/14/2018 23:48	WG1124902

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	1.46		1	06/15/2018 12:39	WG1124553

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.50	T8	1	06/15/2018 09:00	WG1124591

Sample Narrative:

L1001547-03 WG1124591: 7.5 at 22.5C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
Specific Conductance	1030		10.0	1	06/14/2018 16:11	WG1124605

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	06/14/2018 16:04	WG1124518
Toluene	ND		0.00500	1	06/14/2018 16:04	WG1124518
Ethylbenzene	ND		0.000500	1	06/14/2018 16:04	WG1124518
Total Xylene	ND		0.00150	1	06/14/2018 16:04	WG1124518
TPH (GC/FID) Low Fraction	ND		0.100	1	06/14/2018 16:04	WG1124518
(S) a,a,a-Trifluorotoluene(FID)	97.0		77.0-120		06/14/2018 16:04	WG1124518
(S) a,a,a-Trifluorotoluene(PID)	105		75.0-128		06/14/2018 16:04	WG1124518

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	87.1		40.0	10	06/15/2018 00:02	WG1124902
C28-C40 Oil Range	160		40.0	10	06/15/2018 00:02	WG1124902
(S) o-Terphenyl	71.5		18.0-148		06/15/2018 00:02	WG1124902

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	1.05		1	06/15/2018 12:41	WG1124553

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.47	T8	1	06/15/2018 09:00	WG1124591

Sample Narrative:

L1001547-04 WG1124591: 7.47 at 22.4C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
	945		10.0	1	06/14/2018 16:11	WG1124605

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	06/14/2018 16:25	WG1124518
Toluene	ND		0.00500	1	06/14/2018 16:25	WG1124518
Ethylbenzene	ND		0.000500	1	06/14/2018 16:25	WG1124518
Total Xylene	ND		0.00150	1	06/14/2018 16:25	WG1124518
TPH (GC/FID) Low Fraction	ND		0.100	1	06/14/2018 16:25	WG1124518
(S) a,a,a-Trifluorotoluene(FID)	101		77.0-120		06/14/2018 16:25	WG1124518
(S) a,a,a-Trifluorotoluene(PID)	105		75.0-128		06/14/2018 16:25	WG1124518

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	67.7		40.0	10	06/15/2018 00:15	WG1124902
C28-C40 Oil Range	140		40.0	10	06/15/2018 00:15	WG1124902
(S) o-Terphenyl	70.1		18.0-148		06/15/2018 00:15	WG1124902

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	0.701		1	06/15/2018 12:44	WG1124553

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.60	T8	1	06/15/2018 09:00	WG1124591

Sample Narrative:

L1001547-05 WG1124591: 7.6 at 22.4C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
	597		10.0	1	06/14/2018 16:11	WG1124605

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	06/14/2018 16:46	WG1124518
Toluene	ND		0.00500	1	06/14/2018 16:46	WG1124518
Ethylbenzene	ND		0.000500	1	06/14/2018 16:46	WG1124518
Total Xylene	ND		0.00150	1	06/14/2018 16:46	WG1124518
TPH (GC/FID) Low Fraction	ND		0.100	1	06/14/2018 16:46	WG1124518
(S) a,a,a-Trifluorotoluene(FID)	98.4		77.0-120		06/14/2018 16:46	WG1124518
(S) a,a,a-Trifluorotoluene(PID)	105		75.0-128		06/14/2018 16:46	WG1124518

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	43.9		40.0	10	06/14/2018 23:35	WG1124902
C28-C40 Oil Range	98.1		40.0	10	06/14/2018 23:35	WG1124902
(S) o-Terphenyl	74.4		18.0-148		06/14/2018 23:35	WG1124902

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	0.905		1	06/15/2018 12:46	WG1124553

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.54	T8	1	06/15/2018 09:00	WG1124591

Sample Narrative:

L1001547-06 WG1124591: 7.54 at 22.5C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
	886		10.0	1	06/14/2018 16:11	WG1124605

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	06/14/2018 17:08	WG1124518
Toluene	ND		0.00500	1	06/14/2018 17:08	WG1124518
Ethylbenzene	ND		0.000500	1	06/14/2018 17:08	WG1124518
Total Xylene	ND		0.00150	1	06/14/2018 17:08	WG1124518
TPH (GC/FID) Low Fraction	ND		0.100	1	06/14/2018 17:08	WG1124518
(S) a,a,a-Trifluorotoluene(FID)	97.1		77.0-120		06/14/2018 17:08	WG1124518
(S) a,a,a-Trifluorotoluene(PID)	104		75.0-128		06/14/2018 17:08	WG1124518

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	28.3		20.0	5	06/14/2018 22:27	WG1124902
C28-C40 Oil Range	68.6		20.0	5	06/14/2018 22:27	WG1124902
(S) o-Terphenyl	74.4		18.0-148		06/14/2018 23:35	WG1124902
(S) o-Terphenyl	65.0		18.0-148		06/14/2018 22:27	WG1124902

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

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.77	T8	1	06/15/2018 09:00	WG1124591

Sample Narrative:
L1001547-07 WG1124591: 7.77 at 22.5C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	673		10.0	1	06/14/2018 16:11	WG1124605

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.72	T8	1	06/15/2018 09:00	WG1124591

Sample Narrative:
L1001547-08 WG1124591: 7.72 at 22.4C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	627		10.0	1	06/14/2018 16:11	WG1124605

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.38		1	06/15/2018 12:49	WG1124553

¹ Cp

² Tc

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.83	T8	1	06/15/2018 09:00	WG1124591

³ Ss

⁴ Cn

Sample Narrative:

L1001547-09 WG1124591: 7.83 at 22.4C

⁵ Sr

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	590		10.0	1	06/14/2018 16:11	WG1124605

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



L1001547-14 Original Sample (OS) • Duplicate (DUP)

(OS) L1001547-14 06/15/18 09:00 • (DUP) R3318185-4 06/15/18 09:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	7.74	7.70	1	0.518		1

Sample Narrative:

OS: 7.74 at 22.3C

DUP: 7.7 at 22.2C

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

(LCS) R3318185-1 06/15/18 09:00 • (LCSD) R3318185-2 06/15/18 09:00

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD	RPD Limits
Analyte	su	su	su	%	%	%			%	%
pH	10.0	9.99	9.98	99.9	99.8	99.0-101			0.100	1

Sample Narrative:

LCS: 9.99 at 20.2C

LCSD: 9.98 at 20.3C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3318001-1 06/14/18 16:11

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

L1001547-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1001547-01 06/14/18 16:11 • (DUP) R3318001-4 06/14/18 16:11

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP RPD Limits %
Specific Conductance	1010	1010	1	0.000	20

⁷Gl

⁸Al

L1001547-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1001547-11 06/14/18 16:11 • (DUP) R3318001-5 06/14/18 16:11

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP RPD Limits %
Specific Conductance	593	591	1	0.338	20

⁹Sc

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

(LCS) R3318001-2 06/14/18 16:11 • (LCSD) R3318001-3 06/14/18 16:11

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCSD Result umhos/cm	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Specific Conductance	559	557	555	99.6	99.3	85.0-115			0.360	20



Method Blank (MB)

(MB) R3318054-5 06/14/18 12:17

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	0.000376	U	0.000150	0.00500
Ethylbenzene	0.000114	U	0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	101			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	104			75.0-128

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

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

(LCS) R3318054-1 06/14/18 10:32 • (LCSD) R3318054-2 06/14/18 10:53

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 %
Benzene	0.0500	0.0475	0.0478	94.9	95.6	71.0-121			0.642	20
Toluene	0.0500	0.0478	0.0479	95.7	95.8	72.0-120			0.107	20
Ethylbenzene	0.0500	0.0527	0.0531	105	106	76.0-121			0.640	20
Total Xylene	0.150	0.161	0.161	107	107	75.0-124			0.0622	20
(S) a,a,a-Trifluorotoluene(FID)				99.9	100	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				103	104	75.0-128				

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

(LCS) R3318054-3 06/14/18 11:14 • (LCSD) R3318054-4 06/14/18 11:35

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 %
TPH (GC/FID) Low Fraction	5.50	5.66	5.54	103	101	70.0-136			1.98	20
(S) a,a,a-Trifluorotoluene(FID)				93.4	94.5	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				113	113	75.0-128				



L1001268-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1001268-01 06/14/18 13:12 • (MS) R3318054-6 06/14/18 19:14 • (MSD) R3318054-7 06/14/18 19:36

	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Benzene	0.0662	0.0221	1.06	1.14	62.6	67.4	25	10.0-146			7.22	29
Toluene	0.0662	0.0151	1.06	1.14	62.9	67.8	25	10.0-143			7.38	30
Ethylbenzene	0.0662	0.0225	1.22	1.32	72.5	78.4	25	10.0-147			7.64	31
Total Xylene	0.199	0.144	3.81	4.12	73.7	80.0	25	10.0-149			7.89	30
(S) a,a,a-Trifluorotoluene(FID)					102	101		77.0-120				
(S) a,a,a-Trifluorotoluene(PID)					105	105		75.0-128				

L1001268-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1001268-01 06/14/18 13:12 • (MS) R3318054-8 06/14/18 19:57 • (MSD) R3318054-9 06/14/18 20:18

	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
TPH (GC/FID) Low Fraction	7.28	2.64	79.9	79.0	42.4	42.0	25	10.0-147			1.10	30
(S) a,a,a-Trifluorotoluene(FID)					99.4	99.0		77.0-120				
(S) a,a,a-Trifluorotoluene(PID)					108	108		75.0-128				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3318073-1 06/14/18 21:19

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C40 Oil Range	U		0.274	4.00
(S) o-Terphenyl	64.1			18.0-148

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

(LCS) R3318073-2 06/14/18 21:33 • (LCSD) R3318073-3 06/14/18 21:46

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 %
C10-C28 Diesel Range	50.0	36.0	38.4	72.0	76.9	50.0-150			6.59	20
(S) o-Terphenyl				68.9	74.9	18.0-148				

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(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.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
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.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

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

Qualifier Description

B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
T8	Sample(s) received past/too close to holding time expiration.



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.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN2000002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater 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.



Company Name/Address:

Nicholson GeoSolutions. LLC.3433 E. Lake Dr.
Centennial, CO 80121

Billing Information:

Terry Pape
HRM Resources II, LLC
410 17th Street, Suite 1600
Denver, CO 80202

Report to:

Dave Nicholson & Dave Cox

Project Description: HRM Landfarm Sampling

Email To: palisades@techemail.com
dknicholson@q.com

Phone: 303-601-2023

Fax:

Client Project #

City/State

Collected:

Lab Project #

Collected by (print):

D. COX

Site/Facility ID #

P.O. #

Collected by (signature):

D. Cox

Rush? Lab MUST Be Notified

Same Day 200%

☒ Next Day 100%

Two Day 50%

Three Day 25%

Date Results Needed

6-15-18 COB

Email? ☐ No ☒ YesFAX? ☐ No ☐ YesNo.
of
Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
Marick S-23	G	SS		6-13-18	1340	4
Marick-LFF-3		SS			1350	4
Marick-LFF-4		SS			1355	4
Marick-LFF-5		SS			1400	4
Marick-LFF-6		SS			1410	4
Marick-LFF-7		SS			1415	4
Marick-LFF-8		SS			1425	4
Marick-LFF-9		SS			1430	4
Marick-LFF-10		SS			1440	2
Lippelman-LFF-1	✓	SS		✓	1505	4

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

Remarks:

Relinquished by: (Signature)

Date:

6-13-18

Time:

1830

Received by: (Signature)

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Analysis / Container / Preservative

TEPH(8015) Diesel & Oil Range (1) 4oz Clear - No Pres

BTX(TVPH) (1) 4oz Clear - No Pres

SAR (1) 4oz Clear - No Pres

SPCON, pH (1) 4oz Clear - No Pres

Chain of Custody

Page 1 of 2



YOUR LAB OF CHOICE

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L#

4001547

T#

A138

Acctnum: HRMRSDCO

Template:

Prelogin:

TSR:

Cooler:

Shipped Via:

Rem./Contaminant

Sample # (lab only)

-01
-02
-03
-04
-05
-06
-07
-08
-09
-10

pH _____ Temp _____

Flow _____ Other _____

Hold #

Samples returned via: ☐ UPS☐ FedEx ☐ Courier ☐ _____

Temp: _____ °C Bottles Received:

2340 48

Date: 6/14/18 Time: 845

Condition: (lab use only)

COC Seal Intact: ☐ Y ☒ N ☐ NA

pH Checked: NCF:

Company Name/Address:

Nicholson GeoSolutions. LLC.3433 E. Lake Dr.
Centennial, CO 80121

Billing Information:

Terry Pape
HRM Resources II, LLC
410 17th Street, Suite 1600
Denver, CO 80202

Report to:

Dave Nicholson + Dave Cox

Email To:

palizades@tech@gmail.com
dknicholson@q.com

Project

Description: HRM Landfarm Sampling

Phone: 303-601-2023

Fax:

Client Project #

City/State

Collected:

Lab Project #

Collected by (print):

D. Cox

Site/Facility ID #

P.O. #

Collected by (signature):

D. Cox

Rush? (Lab MUST Be Notified)

Same Day 200%

☒ Next Day 100%

Two Day 50%

Three Day 25%

Date Results Needed

6-15-18

Email? ☐ No ☒ YesFAX? ☐ No ☐ YesNo.
of
Cntrs

Sample ID

Comp/Grab

Matrix *

Depth

Date

Time

Cntr

Hertzberg-LFF-1

G

SS

6-13-18

1525

4

Anderson-LFF-1

SS

↓

1545

42

Anderson-LFF-3

SS

↓

1550

42

Anderson-LFF-4

SS

↓

1600

42

2

2

2

2

2

2

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

Remarks:

Relinquished by: (Signature)

D. Cox

Date:

6-13-18

Time:

1830

Received by: (Signature)

4361 6933 6577

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: ☐ UPS☐ FedEx ☐ Courier ☐ _____

Temp: _____ °C Bottles Received:

2.34 4/8

Date: 6/14/18 Time: 8:15

Hold #

Condition: (lab use only)

COC Seal Intact: ☐ Y ☒ N ☐ NA

pH Checked:

NCF:

Analysis / Container / Preservative

Chain of Custody

Page 2 of 2


ESC
 L.A.B S.C.I.E.N.C.E.S

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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L.#

L1001547

Table #

Acctnum: HRMRESDCO

Template:

Prelogin:

TSR:

Cooler:

Shipped Via:

Rem./Contaminant

Sample # (lab only)

-11

-12

-13

-14

ESC LAB SCIENCES Cooler Receipt Form

Client: <u>HRM RESDCO</u>		SDG#	<u>4001547</u>	
Cooler Received/Opened On: <u>6/14/18</u>		Temperature:	<u>2.3</u>	
Received By: <u>Kelsey Stephenson</u>				
Signature: <u>[Signature]</u>				
Receipt Check List				
COC Seal Present / Intact?	NP	Yes	No	
COC Signed / Accurate?	-			
Bottles arrive intact?		-		
Correct bottles used?		-		
Sufficient volume sent?		-		
If Applicable		-		
VOA Zero headspace?				
Preservation Correct / Checked?				