

Colorado Oil & Gas Conservation

Sample Delivery Group: L804181
Samples Received: 12/02/2015
Project Number:
Description: W-F Spill
Site: W-F SPILL
Report To: Jason Kosola
707 Wapiti Court, Ste 204
Rifle, CO 81650

Entire Report Reviewed By:



Daphne Richards
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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06590 BACKGROUND L804181-01 Solid

Collected by
J. KosolaCollected date/time
11/25/15 11:35Received date/time
12/02/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG833049	1	12/04/15 12:28	12/08/15 01:36	ST
Wet Chemistry by Method 9045D	WG833009	1	12/03/15 12:10	12/03/15 12:10	MAJ
Wet Chemistry by Method 9050AMod	WG833618	1	12/07/15 16:04	12/07/15 16:04	SAM

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc

06590 RELEASE L804181-02 Solid

Collected by
J. KosolaCollected date/time
11/25/15 11:35Received date/time
12/02/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG833049	1	12/04/15 12:28	12/08/15 01:36	ST
Wet Chemistry by Method 9045D	WG833009	1	12/03/15 12:10	12/03/15 12:10	MAJ
Wet Chemistry by Method 9050AMod	WG833618	1	12/07/15 16:04	12/07/15 16:04	SAM

06387 BACKGROUND L804181-03 Solid

Collected by
J. KosolaCollected date/time
11/25/15 11:35Received date/time
12/02/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG833049	1	12/04/15 12:28	12/08/15 01:36	ST
Wet Chemistry by Method 9045D	WG833009	1	12/03/15 12:10	12/03/15 12:10	MAJ
Wet Chemistry by Method 9050AMod	WG833618	1	12/07/15 16:04	12/07/15 16:04	SAM

06387 RELEASE L804181-04 Solid

Collected by
J. KosolaCollected date/time
11/25/15 11:35Received date/time
12/02/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG833049	1	12/04/15 12:28	12/08/15 01:36	ST
Wet Chemistry by Method 9045D	WG833009	1	12/03/15 12:10	12/03/15 12:10	MAJ
Wet Chemistry by Method 9050AMod	WG833618	1	12/07/15 16:04	12/07/15 16:04	SAM



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

Daphne Richards
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	0.140		1	12/08/2015 01:36	WG833049

¹ Cp

² Tc

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.83		1	12/03/2015 12:10	WG833009

³ Ss

⁴ Cn

Sample Narrative:

9045D L804181-01 WG833009: 6.83 at 23.2c

⁵ Sr

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Specific Conductance	43.1		1	12/07/2015 16:04	WG833618

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	17.5		1	12/08/2015 01:36	WG833049

¹ Cp

² Tc

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.01		1	12/03/2015 12:10	WG833009

³ Ss

⁴ Cn

Sample Narrative:

9045D L804181-02 WG833009: 8.01 at 23.2c

⁵ Sr

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Specific Conductance	88.0		1	12/07/2015 16:04	WG833618

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.0741		1	12/08/2015 01:36	WG833049

¹ Cp

² Tc

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.84		1	12/03/2015 12:10	WG833009

³ Ss

⁴ Cn

Sample Narrative:

9045D L804181-03 WG833009: 7.84 at 23.0c

⁵ Sr

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Specific Conductance	7210		1	12/07/2015 16:04	WG833618

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	17.0		1	12/08/2015 01:36	WG833049

¹ Cp

² Tc

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	9.12		1	12/03/2015 12:10	WG833009

³ Ss

⁴ Cn

Sample Narrative:

9045D L804181-04 WG833009: 9.12 at 23.5c

⁵ Sr

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Specific Conductance	3280		1	12/07/2015 16:04	WG833618

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



L803407-02 Original Sample (OS) • Duplicate (DUP)

(OS) 12/03/15 12:10 • (DUP) 12/03/15 12:10

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	SU	SU		%		%
pH	8.07	8.07	1	0.000		1

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

(LCS) 12/03/15 12:10 • (LCSD) 12/03/15 12:10

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	SU	SU	SU	%	%	%			%	%
pH	6.72	6.74	6.68	100	99.4	98.5-102			0.894	1

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) 12/07/15 16:04

Analyte	MB Result umhos/cm	MB Qualifier	MB RDL umhos/cm
Specific Conductance	1.75		

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L804181-01 Original Sample (OS) • Duplicate (DUP)

(OS) 12/07/15 16:04 • (DUP) 12/07/15 16:04

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	43.1	44.5	1	3.20		20

L804732-02 Original Sample (OS) • Duplicate (DUP)

(OS) 12/07/15 16:04 • (DUP) 12/07/15 16:04

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	69.5	68.5	1	1.45		20

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

(LCS) 12/07/15 16:04 • (LCSD) 12/07/15 16:04

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	915	950	950	104	104	90.0-110			0.000	20



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
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The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



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

State Accreditations

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

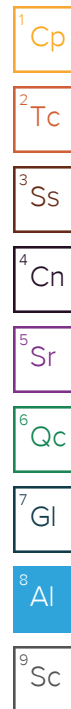
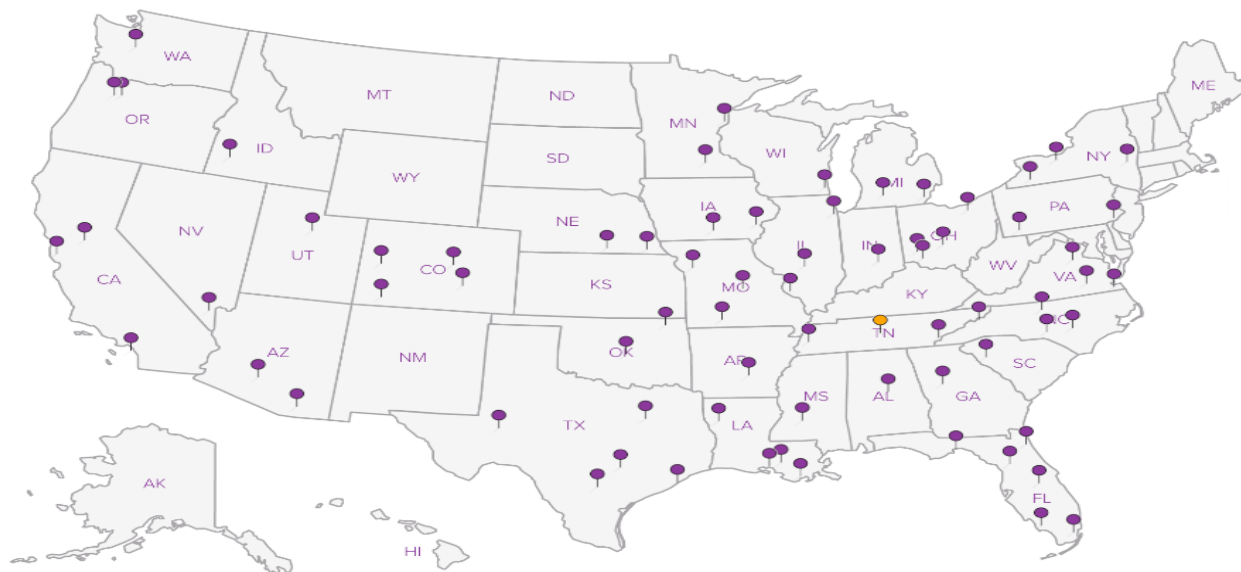
Third Party & Federal Accreditations

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

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

Our Locations

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



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