

# **SHABLE K08-67HN EXCAVATION REPORT & NO FURTHER ACTION REQUEST**

April 14, 2015

## **PREPARED ON BEHALF OF**

Noble Energy, Inc.  
1600 Broadway  
Denver, CO 80202



## **PREPARED BY**

Tasman Geosciences, Inc.  
6899 Pecos Street, Unit C  
Denver, CO 80221



April 14, 2015

Mr. Jacob Evans  
Noble Energy Inc.  
1600 Broadway  
Denver, CO 80202

Subject:       **Excavation Report**  
                  ***Shable K08-67HN***  
                  Facility/Location ID: 437479, Spill/Release Point ID: 440657  
                  Weld County, Colorado

Dear Mr. Evans:

Below please find a copy of the above referenced Excavation Report for the Shable K08-67HN Tank Battery (Site) in Weld County, Colorado. The text below describes environmental sampling and remediation activities conducted between December 24, 2014 and February 9, 2015.

## **Introduction**

The purpose of this document is to describe the assessment and removal of impacted soil and subsequent confirmation sampling activities at the Site. The activities described below were performed in response to a release discovered near surface infrastructure associated with the Shable K08-67HN wellhead.

## **Facility Background**

The Site is located approximately 2 miles east of the town of Milliken in Weld County, Colorado as shown in Figure 1. Surrounded by non-crop land, the Site legal description is the NE ¼ of the NE ¼ of Section 7, Township 4N, Range 66W.

On December 24, 2014 an operational error caused a relief valve to release between 1 and 5 barrels of crude oil as a mist above ground. The pressure was relieved and the valve was closed. Subsequently, Tasman Geosciences, Inc. (Tasman) was contracted to provide environmental assessment and management services for the release.

## **Field Activities**

Site assessment activities commenced on December 24, 2014. Impacted soil comprising the ground surface was scraped and transported off-Site for disposal. As illustrated in Figure 3, three stained areas were noted and two samples from each (six samples total) were collected and field screened for volatile organic compounds (VOC) using a photoionization detector (PID) and standard headspace sampling techniques. The six soil samples were subsequently submitted to Summit Scientific Laboratory in Golden, Colorado for laboratory analysis of benzene, toluene, ethylbenzene, and total xylenes (collectively referred to as BTEX), naphthalene, and total petroleum hydrocarbons-gasoline range organics (TPH-GRO) using United States Environmental Protection Agency (USEPA) Method 8260B, and total petroleum hydrocarbons-diesel range organics (TPH-DRO) using USEPA Method 8015. Clean imported fill material was graded across the excavated areas prior to Tasman's departure, and markings were added to assist with future excavation activities.

Excavation activities resumed on February 9, 2015. A total of eighteen confirmation soil samples were collected from the sidewalls and bases of three excavations with final dimensions of approximately 25 feet (ft.) by 30 ft. by 1.5 ft. below ground surface (bgs), 27 ft. by 30 ft. by 0.75 ft. bgs, and 3 ft. by 15 ft. by 3 ft. bgs. The soil samples were submitted to Summit Scientific for analyses of BTEX, naphthalene, and TPH-GRO via USEPA Method 8260B, and TPH-DRO via USEPA Method 8015. Based on the final excavation extents, approximately 80 cubic yards of soil were removed from the Site and transported to the North Weld County Landfill near Ault, CO between December 24, 2014 and February 9, 2015. Clean imported fill material was used to backfill and grade the excavations.

Groundwater was not encountered during assessment or excavation activities.

## **Results**

Laboratory sample analyses indicate that BTEX, naphthalene, TPH-GRO, and TPH-DRO concentrations were below the applicable COGCC Table 910-1 standards for the soil confirmation samples collected from the final extents of the excavations. These data are presented in Table 1 and illustrated in Figure 2.

## **Conclusions**

Based on laboratory analytical confirmation data, soil impacted above applicable COGCC standards was successfully removed from the Site. As such, a no further action designation is appropriate for the release.

## **Remarks**

The discussion and conclusions contained in this report represent the professional opinions of Tasman Geosciences, Inc. These opinions are based on currently available information and are arrived at in accordance with currently accepted geologic and engineering practices.

Please contact me at (303) 487-1228 if you require additional information.

Sincerely,  
Tasman Geosciences, Inc.

A handwritten signature in blue ink, appearing to read "Daniel Wade", is positioned above the printed name.

Daniel Wade P.G.  
Senior Geologist

Attached:  
Table 1 – Soil Analytical Data  
Figure 1 – Site Location Map  
Figure 2 – Soil Analytical Results Map  
Attachment A – Laboratory Analytical Data Reports

## **TABLES**

**TABLE 1**  
**SOIL ANALYTICAL DATA**  
**NOBLE ENERGY, INC. - SHABLE K08-67HN**

Soil Sample ID	Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	Naphthalene (mg/kg)
<b>COGCC Standard</b>		<b>0.17</b>	<b>85</b>	<b>100</b>	<b>175</b>	<b>500</b>		<b>23</b>
SS01@0.25'	12/24/14	1.2	25	3.0	49	740	1100	0.49
SS01@1.5'	02/09/15	<0.0020	0.0076	<0.0050	0.066	<50	<50	<0.010
SS03@0'	12/24/14	2.6	110	26	320	8000	10000	4.4
SS03@6"	02/09/15	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS06@0.25'	12/24/14	0.051	2.8	0.89	18	360	1700	0.65
SS06@9"	02/09/15	<0.0020	0.0086	<0.0050	<0.010	<50	<50	<0.010
SS07@6"	02/09/15	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS08@0'	12/24/14	7.6	160	29	330	8100	8400	3.8
SS08@6"	02/09/15	<0.0020	<0.0050	<0.0050	0.026	<50	<50	<0.010
SS10@6"	02/09/15	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS11@0.25'	12/24/14	7.1	130	18	230	5300	3600	3.1
SS11@3'	02/09/15	<0.0020	<0.0050	<0.0050	0.070	<50	<50	<0.010
SS12@0'	12/24/14	1.1	63	8.8	130	2300	2600	1.5
SS12@1'	02/09/15	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS13@1'	02/09/15	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS14@1'	02/09/15	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS16@6"	02/09/15	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS17@6"	02/09/15	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS19@1'	02/09/15	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS21@6"	02/09/15	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS23@6"	02/09/15	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS24@6"	02/09/15	<0.0020	<0.0050	<0.0050	<0.010	<50	77	<0.010
SS26@6"	02/09/15	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS27@6"	02/09/15	<0.0020	<0.0050	<0.0050	<0.010	<50	110	<0.010

COGCC = Colorado Oil and Gas Conservation Commission

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics

TPH-DRO = Total petroleum hydrocarbons - diesel range organics

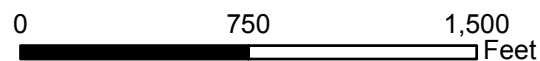
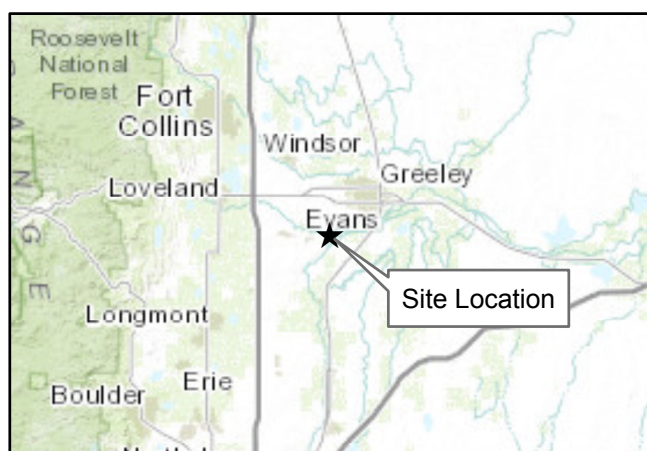
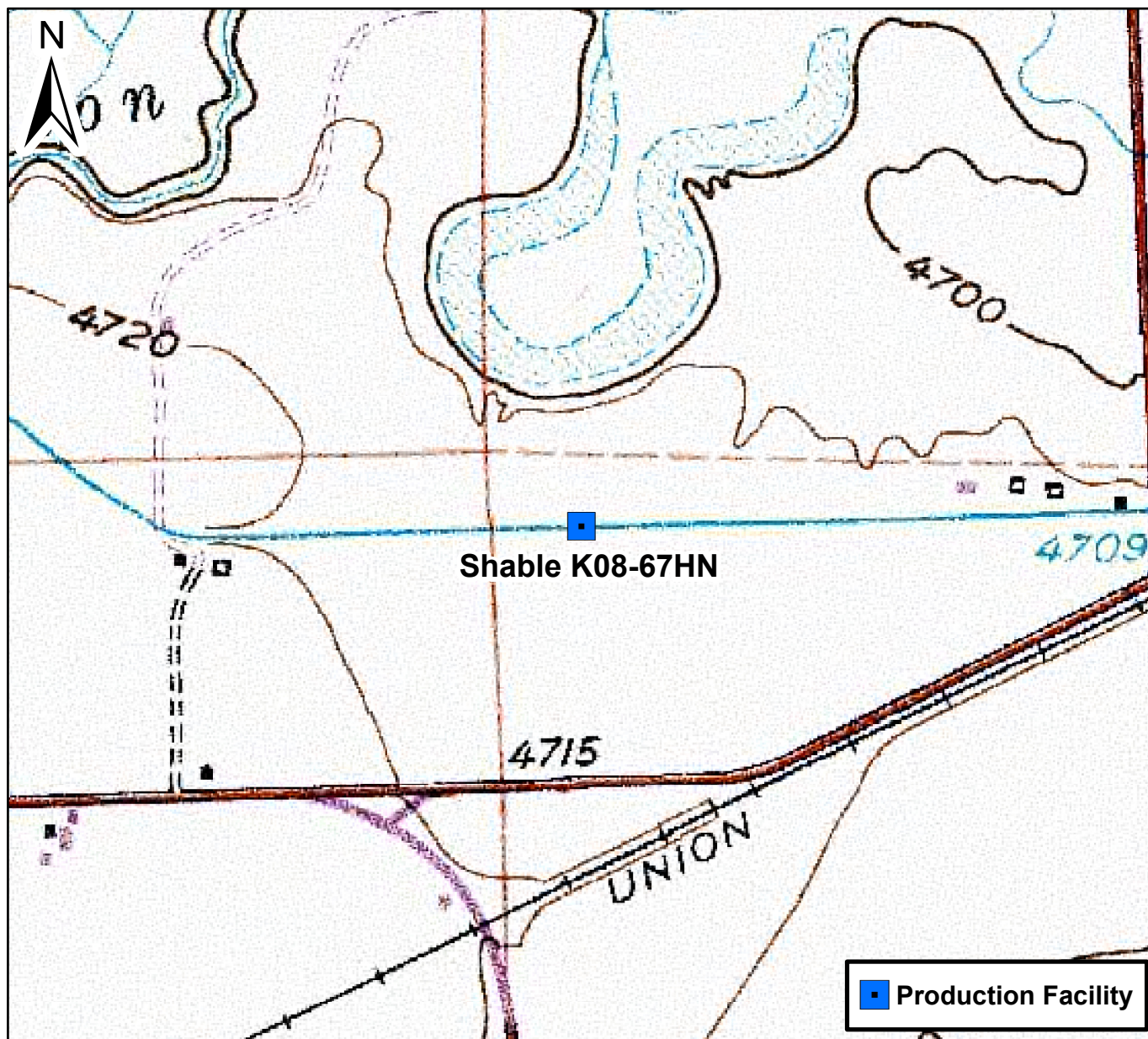
mg/kg = Milligrams per kilogram

< = Analytical result is less than the indicated laboratory reporting limit

Soil standards referenced from COGCC Table 910-1

**Highlighted results exceed the COGCC Table 910-1 standard**

## **FIGURES**

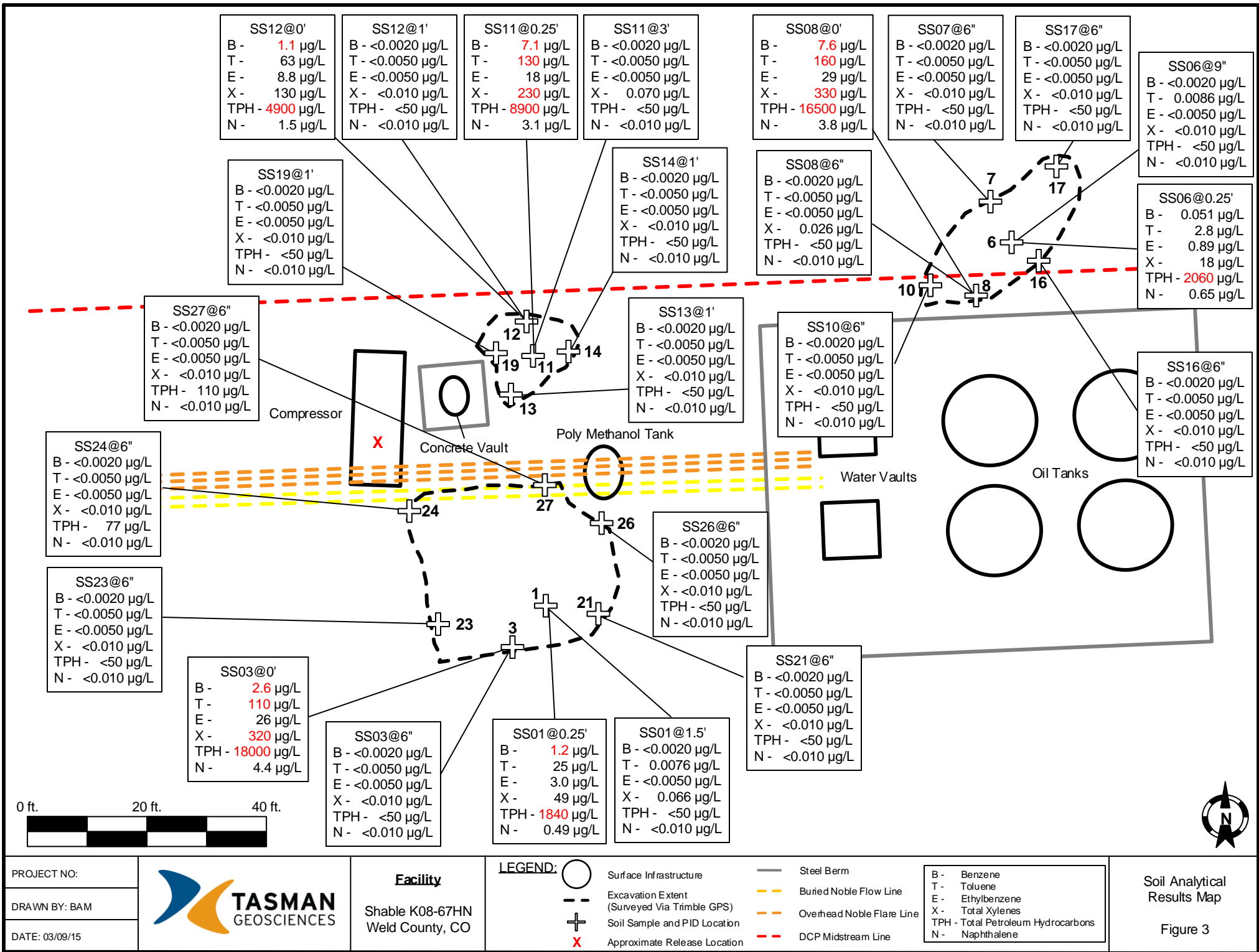


## Figure 1

Site Location Map  
Shable K08-67HN  
NENE S7 T4N R66W  
Weld County, Colorado









# **ATTACHMENT A**

## **LABORATORY ANALYTICAL DATA REPORTS**

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 28, 2014

Dan Wade  
Tasman Geosciences  
6899 Pecos Street  
Denver, CO 80221  
RE: Shale K8-67HN

Enclosed are the results of analyses for samples received by Summit Scientific on 12/24/14 14:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury  
President



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K8-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
12/28/14 12:04

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@0.25'	1412221-01	Soil	12/24/14 12:25	12/24/14 14:30
SS03@0'	1412221-02	Soil	12/24/14 12:40	12/24/14 14:30
SS06@0.25'	1412221-03	Soil	12/24/14 12:30	12/24/14 14:30
SS08@0'	1412221-04	Soil	12/24/14 13:00	12/24/14 14:30
SS11@0.25'	1412221-05	Soil	12/24/14 13:15	12/24/14 14:30
SS12@0'	1412221-06	Soil	12/24/14 13:20	12/24/14 14:30

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K8-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
12/28/14 12:04

## Summit Scientific 1412221

741 Corporate Circle Suite I • Golden, Colorado 80401  
303-277-9310 • 303-374-5933 Fax

Page 1 of 1

Client: \_\_\_\_\_ Noble/Tasman  
Address: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Sampler Name: ANDREW T. FOLGER

Project Manager: Dan Wade INV to Raul Sanchez  
E-Mail:  
Project Name: SHABLE K8-67HN  
Project Number:

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative						Matrix			Analyze For:							Special Instructions				
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	8260 BTEX	8260B GBTEXN	8015 DRO										
SS01 @ 0.25'	12/24	1225	✓			X			X					X	X									
SS03 @ 0'	12/24	1240	1			X			X					X	X									
SS06 @ 0.25'	12/24	1230	1			X			X					X	X									
SS08 @ 0'	12/24	1300	1			X			X					X	X									
SS11 @ 0.25'	12/24	1315	1			X			X					X	X									
SS12 @ 0'	12/24	1320	1			X			X					X	X									
Relinquished by: <i>Jordan T. John</i>	Date/Time: 12/24/14 1430	Received by:	Date/Time:										Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input type="checkbox"/> 48 Hours <input type="checkbox"/>							Notes:				
Relinquished by:	Date/Time:	Received by:	Date/Time:																					
Relinquished by:	Date/Time:	Received by: <i>[Signature]</i>	Date/Time: 12-24-14 1430										Sample Integrity: Temperature Upon Receipt: 5.9 Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											

[www.s2scientific.com](http://www.s2scientific.com)



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K8-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
12/28/14 12:04

**SS01@0.25'**  
**1412221-01 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/24/14 12:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1100	50	mg/kg	1	1412271	12/24/14	12/26/14	8015M	

Date Sampled: 12/24/14 12:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		123 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/24/14 12:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.49	0.10	mg/kg	10	1412272	"	12/24/14	EPA 8260B	
Benzene	1.2	0.020	"	"	"	"	"	"	
Toluene	25	0.050	"	"	"	"	"	"	E
Ethylbenzene	3.0	0.050	"	"	"	"	"	"	
Xylenes (total)	49	0.10	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	740	5.0	"	"	"	"	"	"	

Date Sampled: 12/24/14 12:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		89.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		150 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K8-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
12/28/14 12:04

**SS03@0'**  
**1412221-02 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/24/14 12:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	10000	50	mg/kg	1	1412271	12/24/14	12/26/14	8015M	

Date Sampled: 12/24/14 12:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		475 %	30-150		"	"	"	"	S-02

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/24/14 12:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	4.4	0.10	mg/kg	10	1412272	"	12/24/14	EPA 8260B	
Benzene	2.6	0.020	"	"	"	"	"	"	
Toluene	110	0.050	"	"	"	"	"	"	E
Ethylbenzene	26	0.050	"	"	"	"	"	"	E
Xylenes (total)	320	0.10	"	"	"	"	"	"	E
Gasoline Range Hydrocarbons	8000	5.0	"	"	"	"	"	"	E

Date Sampled: 12/24/14 12:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		847 %	20-170		"	"	"	"	S-02
Surrogate: 4-Bromofluorobenzene		750 %	21-167		"	"	"	"	S-02

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K8-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
12/28/14 12:04

**SS06@0.25'**  
**1412221-03 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/24/14 12:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1700	50	mg/kg	1	1412271	12/24/14	12/26/14	8015M	

Date Sampled: 12/24/14 12:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		131 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/24/14 12:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.65	0.10	mg/kg	10	1412272	"	12/24/14	EPA 8260B	
Benzene	0.051	0.020	"	"	"	"	"	"	
Toluene	2.8	0.050	"	"	"	"	"	"	
Ethylbenzene	0.89	0.050	"	"	"	"	"	"	
Xylenes (total)	18	0.10	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	360	5.0	"	"	"	"	"	"	

Date Sampled: 12/24/14 12:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		1020 %	23-173		"	"	"	"	S-02
Surrogate: Toluene-d8		932 %	20-170		"	"	"	"	S-02
Surrogate: 4-Bromofluorobenzene		1190 %	21-167		"	"	"	"	S-02

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K8-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
12/28/14 12:04

**SS08@0'**  
**1412221-04 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/24/14 13:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	8400	50	mg/kg	1	1412271	12/24/14	12/26/14	8015M	

Date Sampled: 12/24/14 13:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		514 %	30-150		"	"	"	"	S-02

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/24/14 13:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	3.8	0.10	mg/kg	10	1412272	"	12/24/14	EPA 8260B	
Benzene	7.6	0.020	"	"	"	"	"	"	
Toluene	160	0.050	"	"	"	"	"	"	E
Ethylbenzene	29	0.050	"	"	"	"	"	"	E
Xylenes (total)	330	0.10	"	"	"	"	"	"	E
Gasoline Range Hydrocarbons	8100	5.0	"	"	"	"	"	"	

Date Sampled: 12/24/14 13:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		97.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		972 %	20-170		"	"	"	"	S-02
Surrogate: 4-Bromofluorobenzene		621 %	21-167		"	"	"	"	S-02

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K8-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
12/28/14 12:04

**SS11@0.25'**  
**1412221-05 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/24/14 13:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	3600	50	mg/kg	1	1412271	12/24/14	12/26/14	8015M	

Date Sampled: 12/24/14 13:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		167 %	30-150		"	"	"	"	S-02

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/24/14 13:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	3.1	0.10	mg/kg	10	1412272	"	12/24/14	EPA 8260B	
Benzene	7.1	0.020	"	"	"	"	"	"	
Toluene	130	0.050	"	"	"	"	"	"	E
Ethylbenzene	18	0.050	"	"	"	"	"	"	E
Xylenes (total)	230	0.10	"	"	"	"	"	"	E
Gasoline Range Hydrocarbons	5300	5.0	"	"	"	"	"	"	

Date Sampled: 12/24/14 13:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		625 %	20-170		"	"	"	"	S-02
Surrogate: 4-Bromofluorobenzene		354 %	21-167		"	"	"	"	S-02

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K8-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
12/28/14 12:04

**SS12@0'**  
**1412221-06 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/24/14 13:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	2600	50	mg/kg	1	1412271	12/24/14	12/26/14	8015M	

Date Sampled: 12/24/14 13:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		218 %	30-150		"	"	"	"	S-02

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/24/14 13:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	1.5	0.10	mg/kg	10	1412272	"	12/25/14	EPA 8260B	
Benzene	1.1	0.020	"	"	"	"	"	"	
Toluene	63	0.050	"	"	"	"	"	"	E
Ethylbenzene	8.8	0.050	"	"	"	"	"	"	E
Xylenes (total)	130	0.10	"	"	"	"	"	"	E
Gasoline Range Hydrocarbons	2300	5.0	"	"	"	"	"	"	E

Date Sampled: 12/24/14 13:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		247 %	21-167		"	"	"	"	S-02

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K8-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
12/28/14 12:04

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1412271 - EPA 3550A**

**Blank (1412271-BLK1)**

Prepared & Analyzed: 12/24/14

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	10.9		"	12.2		89.2	30-150			

**LCS (1412271-BS1)**

Prepared & Analyzed: 12/24/14

C10-C28 (DRO)	438	50	mg/kg	501		87.5	73-134			
Surrogate: o-Terphenyl	10.9		"	12.2		89.5	30-150			

**Matrix Spike (1412271-MS1)**

**Source: 1412210-01**

Prepared & Analyzed: 12/24/14

C10-C28 (DRO)	440	50	mg/kg	489	ND	90.0	50-148			
Surrogate: o-Terphenyl	10.9		"	11.9		91.4	30-150			

**Matrix Spike Dup (1412271-MSD1)**

**Source: 1412210-01**

Prepared & Analyzed: 12/24/14

C10-C28 (DRO)	452	50	mg/kg	495	ND	91.2	50-148	2.48	13	
Surrogate: o-Terphenyl	10.7		"	12.1		88.9	30-150			

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K8-67HN  
Project Number: [none]  
Project Manager: Dan Wade

Reported:  
12/28/14 12:04

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1412272 - EPA 5030 Soil MS**

**Blank (1412272-BLK1)**

Prepared & Analyzed: 12/24/14

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0421		"	0.0396		106	23-173			
Surrogate: Toluene-d8	0.0396		"	0.0400		99.1	20-170			
Surrogate: 4-Bromofluorobenzene	0.0383		"	0.0400		95.7	21-167			

**LCS (1412272-BS1)**

Prepared & Analyzed: 12/24/14

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0946	0.0020	"	0.100		94.6	58-130			
Toluene	0.0945	0.0050	"	0.100		94.5	61-134			
Ethylbenzene	0.0967	0.0050	"	0.0992		97.5	74-139			
m,p-Xylene	0.188	0.010	"	0.200		94.2	73-137			
o-Xylene	0.0944	0.0050	"	0.0984		95.9	73-141			
Surrogate: 1,2-Dichloroethane-d4	0.0419		"	0.0396		106	23-173			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		98.0	21-167			

**Matrix Spike (1412272-MS1)**

Source: 1412210-01

Prepared & Analyzed: 12/24/14

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0929	0.0020	"	0.0942	ND	98.7	30-131			
Toluene	0.0923	0.0050	"	0.0942	ND	98.1	30-134			
Ethylbenzene	0.0920	0.0050	"	0.0934	ND	98.5	22-153			
m,p-Xylene	0.181	0.010	"	0.188	ND	96.1	10-159			
o-Xylene	0.0907	0.0050	"	0.0927	ND	97.9	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0403		"	0.0373		108	23-173			
Surrogate: Toluene-d8	0.0372		"	0.0377		98.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0358		"	0.0377		95.1	21-167			

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K8-67HN

Project Number: [none]  
Project Manager: Dan Wade

Reported:  
12/28/14 12:04

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1412272 - EPA 5030 Soil MS**

Matrix Spike Dup (1412272-MSD1)		Source: 1412210-01			Prepared & Analyzed: 12/24/14					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0900	0.0020	"	0.0942	ND	95.6	30-131	3.18	34	
Toluene	0.0902	0.0050	"	0.0942	ND	95.8	30-134	2.35	30	
Ethylbenzene	0.0899	0.0050	"	0.0934	ND	96.2	22-153	2.39	24	
m,p-Xylene	0.174	0.010	"	0.188	ND	92.6	10-159	3.73	68	
o-Xylene	0.0879	0.0050	"	0.0927	ND	94.8	31-151	3.16	38	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	0.0399		"	0.0373		107	23-173			
Surrogate: Toluene-d8	0.0376		"	0.0377		99.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0363		"	0.0377		96.3	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K8-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
12/28/14 12:04

### Notes and Definitions

S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference



# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

February 10, 2015

Dan Wade  
Tasman Geosciences  
6899 Pecos Street  
Denver, CO 80221  
RE: Shable K08-67HN

Enclosed are the results of analyses for samples received by Summit Scientific on 02/09/15 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury  
President



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K08-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
02/10/15 06:58

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS08@6"	1502052-01	Soil	02/09/15 08:40	02/09/15 16:00
SS06@9"	1502052-02	Soil	02/09/15 08:50	02/09/15 16:00
SS16@6"	1502052-03	Soil	02/09/15 08:52	02/09/15 16:00
SS17@6"	1502052-04	Soil	02/09/15 08:55	02/09/15 16:00
SS10@6"	1502052-05	Soil	02/09/15 08:57	02/09/15 16:00
SS12@1'	1502052-06	Soil	02/09/15 09:10	02/09/15 16:00
SS13@1'	1502052-07	Soil	02/09/15 09:12	02/09/15 16:00
SS19@1'	1502052-08	Soil	02/09/15 10:15	02/09/15 16:00
SS11@3'	1502052-09	Soil	02/09/15 09:30	02/09/15 16:00
SS14@1'	1502052-10	Soil	02/09/15 09:52	02/09/15 16:00
SS01@1.5'	1502052-11	Soil	02/09/15 12:25	02/09/15 16:00
SS03@6"	1502052-12	Soil	02/09/15 12:28	02/09/15 16:00
SS21@6"	1502052-13	Soil	02/09/15 12:32	02/09/15 16:00
SS23@6"	1502052-14	Soil	02/09/15 12:55	02/09/15 16:00
SS24@6"	1502052-15	Soil	02/09/15 13:02	02/09/15 16:00
SS26@6"	1502052-16	Soil	02/09/15 13:06	02/09/15 16:00
SS27@6"	1502052-17	Soil	02/09/15 13:08	02/09/15 16:00
SS07@6"	1502052-18	Soil	02/09/15 10:45	02/09/15 16:00

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K08-67HN

Project Number: [none]  
Project Manager: Dan Wade

Reported:  
02/10/15 06:58

# Summit Scientific 150205201

741 Corporate Circle Suite I • Golden, Colorado 80401  
303-277-9310 • 303-374-5933 Fax

Client: Noble Energy / Tasman Geosciences

Page 1 of 2

Address: 6899 Pecos Street Unit C

Project Manager: Dan Wade, Invoice To: Raul Sanchez

City/State/Zip: Denver, CO 80221

E-Mail: dwade@tasman-geo.com

Phone: 303 487 1228 Fax:

Project Name: Shable K08-67HN

Sampler Name: Andrew T Fisher

Project Number:

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix		Analyze For:				Special Instructions	
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)				
SS0806"	2/9/15	840	1			X			X						
SS0609"	2/9/15	850	1			X			X						
SS1606"	2/9/15	852	1			X			X						
SS1706"	2/9/15	855	1			X			X						
SS1006"	2/9/15	857	1			X			X						
SS1201'	2/9/15	910	1			X			X						
SS1301'	2/9/15	912	1			X			X						
SS1401'	2/9/15	1015	1			X			X						
SS1103'	2/9/15	930	1			X			X						
SS1401'	2/9/15	932	1			X			X						

Relinquished by: *[Signature]* Date/Time: 2/9/15 16:00  
Received by: *[Signature]* Date/Time: 02/09/15 16:00

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Received in Lab by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Turn Around Time (Check)  
Same Day ☒ 72 Hours ☐  
24 Hours ☐ Standard ☐  
48 Hours ☐

Sample Integrity:  
Temperature Upon Receipt: 10.70  
Intact: Yes ☒ No ☐

Notes:

www.s2scientific.com

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K08-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
02/10/15 06:58

## Summit Scientific 1502052.2

741 Corporate Circle Suite I ♦ Golden, Colorado 80401  
303-277-9310 ♦ 303-374-5933 Fax

Page 2 of 2

Client:	Noble Energy / Tasman Geosciences	
Address:	6899 Pecos Street Unit C	
City/State/Zip:	Denver, CO 80221	
Phone:	303 487 1228	Fax:
Sampler Name:	Andrew T Fisher	

Project Manager: Dan Wade, Invoice To: Raul Sanchez  
E-Mail: dwade@tasman-geo.com  
Project Name: Shable K08-67HN  
Project Number:

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analyze For:								Special Instructions	
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)									
SS01E.S'	2/9/15	1225	1			X			X			(6000)								
SS03@6"	2/9/15	1228	1			X			X				X							
SS21@6"	2/9/15	1232	1			X			X				X							
SS23@6"	2/9/15	1253	1			X			X				X							
SS24@6"	2/9/15	1302	1			X			X				X							
SS26@6"	2/9/15	1306	1			X			X				X	X						
SS27@6"	2/9/15	1348	1			X			X				X	X						
SS07@6"	2/9/15	1045	1			X			X				X	X						
Relinquished by: <i>[Signature]</i>	Date/Time: 2/9/15 16:00			Received by: <i>[Signature]</i>				Date/Time: 2-9-15 16:00		Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard 48 Hours <input type="checkbox"/>		Notes:								
Relinquished by:	Date/Time:			Received by:				Date/Time:		Sample Integrity: Temperature Upon Receipt: 10.7 Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>										
Relinquished by:	Date/Time:			Received In Lab by:				Date/Time:												

[www.s2scientific.com](http://www.s2scientific.com)

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*





Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K08-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
02/10/15 06:58

**SS08@6"**  
**1502052-01 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 02/09/15 08:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1502091	02/09/15	02/09/15	8015M	

Date Sampled: 02/09/15 08:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		99.2 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 02/09/15 08:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1502092	02/09/15	02/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.026</b>	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 02/09/15 08:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.8 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K08-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
02/10/15 06:58

**SS06@9"**  
**1502052-02 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 02/09/15 08:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1502091	02/09/15	02/09/15	8015M	

Date Sampled: 02/09/15 08:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		103 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 02/09/15 08:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1502092	02/09/15	02/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
<b>Toluene</b>	<b>0.0086</b>	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 02/09/15 08:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K08-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
02/10/15 06:58

**SS16@6"**  
**1502052-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/09/15 08:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1502091	02/09/15	02/09/15	8015M	

Date Sampled: **02/09/15 08:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		97.1 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/09/15 08:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1502092	02/09/15	02/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **02/09/15 08:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.7 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K08-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
02/10/15 06:58

**SS17@6"**  
**1502052-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/09/15 08:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1502091	02/09/15	02/09/15	8015M	

Date Sampled: **02/09/15 08:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		96.5 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/09/15 08:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1502092	02/09/15	02/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **02/09/15 08:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K08-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
02/10/15 06:58

**SS10@6"**  
**1502052-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/09/15 08:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1502091	02/09/15	02/09/15	8015M	

Date Sampled: **02/09/15 08:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		108 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/09/15 08:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1502092	02/09/15	02/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **02/09/15 08:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.9 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K08-67HN

Project Number: [none]  
Project Manager: Dan Wade

Reported:  
02/10/15 06:58

SS12@1'  
1502052-06 (Soil)

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 02/09/15 09:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1502091	02/09/15	02/09/15	8015M	

Date Sampled: 02/09/15 09:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.8 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 02/09/15 09:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1502092	02/09/15	02/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 02/09/15 09:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.0 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K08-67HN

Project Number: [none]  
Project Manager: Dan Wade

Reported:  
02/10/15 06:58

**SS13@1'**  
**1502052-07 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 02/09/15 09:12

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1502091	02/09/15	02/10/15	8015M	

Date Sampled: 02/09/15 09:12

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.1 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 02/09/15 09:12

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1502092	02/09/15	02/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 02/09/15 09:12

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.5 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K08-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
02/10/15 06:58

**SS19@1'**  
**1502052-08 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/09/15 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1502091	02/09/15	02/10/15	8015M	

Date Sampled: **02/09/15 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		96.0 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/09/15 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1502092	02/09/15	02/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **02/09/15 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K08-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
02/10/15 06:58

**SS11@3'**  
**1502052-09 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 02/09/15 09:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1502091	02/09/15	02/09/15	8015M	

Date Sampled: 02/09/15 09:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		103 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 02/09/15 09:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1502092	02/09/15	02/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.070</b>	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 02/09/15 09:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		75.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		90.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.7 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K08-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
02/10/15 06:58

**SS14@1'**  
**1502052-10 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 02/09/15 09:52

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1502091	02/09/15	02/09/15	8015M	

Date Sampled: 02/09/15 09:52

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		104 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 02/09/15 09:52

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1502092	02/09/15	02/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 02/09/15 09:52

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		79.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		92.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.5 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K08-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
02/10/15 06:58

**SS01@1.5'**  
**1502052-11 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 02/09/15 12:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1502091	02/09/15	02/09/15	8015M	

Date Sampled: 02/09/15 12:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		103 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 02/09/15 12:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1502092	02/09/15	02/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
<b>Toluene</b>	<b>0.0076</b>	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.066</b>	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 02/09/15 12:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		75.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		91.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.3 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K08-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
02/10/15 06:58

**SS03@6"**  
**1502052-12 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 02/09/15 12:28

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1502091	02/09/15	02/09/15	8015M	

Date Sampled: 02/09/15 12:28

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		103 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 02/09/15 12:28

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1502092	02/09/15	02/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 02/09/15 12:28

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		75.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		92.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.9 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K08-67HN

Project Number: [none]  
Project Manager: Dan Wade

Reported:  
02/10/15 06:58

SS21@6"  
1502052-13 (Soil)

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 02/09/15 12:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1502091	02/09/15	02/09/15	8015M	

Date Sampled: 02/09/15 12:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		104 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 02/09/15 12:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1502092	02/09/15	02/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 02/09/15 12:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		75.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		90.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.4 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K08-67HN

Project Number: [none]  
Project Manager: Dan Wade

Reported:  
02/10/15 06:58

SS23@6"  
1502052-14 (Soil)

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 02/09/15 12:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1502091	02/09/15	02/09/15	8015M	

Date Sampled: 02/09/15 12:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		97.5 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 02/09/15 12:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1502092	02/09/15	02/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 02/09/15 12:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		76.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		90.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.8 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K08-67HN

Project Number: [none]  
Project Manager: Dan Wade

Reported:  
02/10/15 06:58

SS24@6"  
1502052-15 (Soil)

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 02/09/15 13:02

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	77	50	mg/kg	1	1502091	02/09/15	02/09/15	8015M	

Date Sampled: 02/09/15 13:02

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		104 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 02/09/15 13:02

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1502092	02/09/15	02/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 02/09/15 13:02

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		78.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		90.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.2 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K08-67HN

Project Number: [none]  
Project Manager: Dan Wade

Reported:  
02/10/15 06:58

SS26@6"  
1502052-16 (Soil)

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 02/09/15 13:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1502091	02/09/15	02/09/15	8015M	

Date Sampled: 02/09/15 13:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		100 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 02/09/15 13:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1502092	02/09/15	02/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 02/09/15 13:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		77.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.0 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K08-67HN

Project Number: [none]  
Project Manager: Dan Wade

Reported:  
02/10/15 06:58

SS27@6"  
1502052-17 (Soil)

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 02/09/15 13:08

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	110	50	mg/kg	1	1502091	02/09/15	02/09/15	8015M	

Date Sampled: 02/09/15 13:08

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		106 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 02/09/15 13:08

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1502092	02/09/15	02/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 02/09/15 13:08

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		77.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		92.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.0 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Shable K08-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
02/10/15 06:58

**SS07@6"**  
**1502052-18 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 02/09/15 10:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1502091	02/09/15	02/09/15	8015M	

Date Sampled: 02/09/15 10:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		104 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 02/09/15 10:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1502092	02/09/15	02/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 02/09/15 10:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		74.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		90.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.8 %	21-167		"	"	"	"	

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Denver CO, 80221

Project: Shable K08-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
02/10/15 06:58

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1502091 - EPA 3550A**

**Blank (1502091-BLK1)**

Prepared & Analyzed: 02/09/15

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	12.3		"	12.2	101		30-150			

**LCS (1502091-BS1)**

Prepared & Analyzed: 02/09/15

C10-C28 (DRO)	552	50	mg/kg	501	110		73-134			
Surrogate: o-Terphenyl	12.3		"	12.2	101		30-150			

**Matrix Spike (1502091-MS1)**

Source: 1502052-01

Prepared & Analyzed: 02/09/15

C10-C28 (DRO)	575	50	mg/kg	501	14.7	112	50-148			
Surrogate: o-Terphenyl	12.7		"	12.2	104		30-150			

**Matrix Spike Dup (1502091-MSD1)**

Source: 1502052-01

Prepared & Analyzed: 02/09/15

C10-C28 (DRO)	555	50	mg/kg	464	14.7	117	50-148	3.47	13	
Surrogate: o-Terphenyl	12.5		"	11.3	111		30-150			

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Project: Shable K08-67HN  
Project Number: [none]  
Project Manager: Dan Wade

Reported:  
02/10/15 06:58

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1502092 - EPA 5030 Soil MS**

**Blank (1502092-BLK1)**

Prepared & Analyzed: 02/09/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0378</i>		<i>"</i>	<i>0.0396</i>		<i>95.5</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0396</i>		<i>"</i>	<i>0.0400</i>		<i>99.0</i>	<i>21-167</i>			

**LCS (1502092-BS1)**

Prepared & Analyzed: 02/09/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.104	0.0020	"	0.100		104	58-130			
Toluene	0.100	0.0050	"	0.100		100	61-134			
Ethylbenzene	0.0996	0.0050	"	0.0992		100	74-139			
m,p-Xylene	0.199	0.010	"	0.200		99.7	73-137			
o-Xylene	0.101	0.0050	"	0.0984		103	73-141			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0374</i>		<i>"</i>	<i>0.0396</i>		<i>94.4</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0398</i>		<i>"</i>	<i>0.0400</i>		<i>99.5</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0385</i>		<i>"</i>	<i>0.0400</i>		<i>96.2</i>	<i>21-167</i>			

**Matrix Spike (1502092-MS1)**

Source: 1502052-01

Prepared & Analyzed: 02/09/15

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0958	0.0020	"	0.0904	ND	106	30-131			
Toluene	0.0954	0.0050	"	0.0904	0.00333	102	30-134			
Ethylbenzene	0.0912	0.0050	"	0.0897	ND	102	22-153			
m,p-Xylene	0.195	0.010	"	0.180	0.0190	97.6	10-159			
o-Xylene	0.0983	0.0050	"	0.0890	0.00704	103	31-151			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0356</i>		<i>"</i>	<i>0.0358</i>		<i>99.5</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0365</i>		<i>"</i>	<i>0.0362</i>		<i>101</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0350</i>		<i>"</i>	<i>0.0362</i>		<i>96.9</i>	<i>21-167</i>			

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Project: Shable K08-67HN

Project Number: [none]  
Project Manager: Dan Wade

Reported:  
02/10/15 06:58

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1502092 - EPA 5030 Soil MS**

Matrix Spike Dup (1502092-MSD1)		Source: 1502052-01			Prepared & Analyzed: 02/09/15					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0972	0.0020	"	0.0899	ND	108	30-131	1.39	34	
Toluene	0.0949	0.0050	"	0.0899	0.00333	102	30-134	0.484	30	
Ethylbenzene	0.0928	0.0050	"	0.0892	ND	104	22-153	1.78	24	
m,p-Xylene	0.200	0.010	"	0.179	0.0190	101	10-159	2.63	68	
o-Xylene	0.100	0.0050	"	0.0885	0.00704	106	31-151	2.13	38	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	0.0355		"	0.0356		99.6	23-173			
Surrogate: Toluene-d8	0.0362		"	0.0360		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0351		"	0.0360		97.7	21-167			

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Project: Shable K08-67HN

Project Number: [none]  
Project Manager: Dan Wade

**Reported:**  
02/10/15 06:58

### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

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A handwritten signature in black ink, appearing to be 'MSW'.

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