

REMEDIAL EXCAVATION REPORT

THOMPSON #3

COGCC SPILL TRACKING # 459376

COGCC REMEDIATION # 12315

Prepared for:



2115 117th Avenue
Greeley, CO 80631

Prepared by:



6899 North Pecos Street, Unit C
Denver, CO 80221

March 27, 2019

Mr. Jacob Evans
Noble Energy Inc.
2115 117th Avenue
Greeley, CO 80631

Subject: **Remedial Excavation Report**
 Thompson #3
 API #: 05-123-11830
 Spill/Release Point ID #: 459376
 Remediation Project #: 12315
 SWSW S28 T4N R64W
 Weld County, Colorado

Dear Mr. Evans:

Below please find a copy of the above referenced Remedial Excavation Report (Report) for the Thompson #3 site (Site) in Weld County, Colorado. The text below describes the results of excavation and remediation activities conducted between November 27, 2018 and February 5, 2019.

Introduction

The purpose of this document is to describe the excavation of impacted soil, groundwater treatment, and confirmation sampling activities conducted at the Site. The activities described below were performed to address petroleum hydrocarbon impacts as a result of a release from the Thompson #3 production line.

Facility Background

The Site is located approximately 7.5 miles south of the town of Kersey in Weld County, Colorado, as shown on Figure 1. The site is surrounded by non-crop ranch land, and the legal description is the southwest $\frac{1}{4}$ of the southwest $\frac{1}{4}$ of Section 28, Township 4 North, Range 64 West, of the 6th Principal Meridian. The Site is located on terrain that slopes to the southeast. The Site is approximately 580 feet (ft.) east of Weld County Road 53 and has coordinates of 40.277998°, -104.563294°.

As reported on the initial Form 19 submitted on November 29, 2018, the line release was discovered west of the Thompson #3 wellhead during operations due to surfaced fluids and as result, the line was shut in. The Colorado Oil and Gas Conservation Commission (COGCC) assigned Spill/Release Point ID# 459376 for this project. The approximate release location is illustrated on Figure 2.

Field Activities - Excavation

Remedial excavation activities were conducted at the Site between November 27, 2018 and February 4, 2019. The purpose of excavation activities was to excavate and remove impacted soil for off-Site disposal, and to introduce a groundwater amendment into the area of dissolved-phase impacts.

Excavation activities were guided in the field using a photo-ionization detector (PID) and standard

headspace soil screening techniques. Soil samples were collected from 66 locations (SS01 through SS07, SS09-SS67) along the sidewalls of the excavation at approximately 5 to 7 ft. below ground surface (bgs). 62 soil samples were submitted to Summit Scientific Laboratory in Golden, Colorado (Summit) for laboratory analyses of benzene, toluene, ethylbenzene, and total xylenes (BTEX), naphthalene, and total petroleum hydrocarbons-gasoline range organics (TPH-GRO) using United States Environmental Protection Agency (USEPA) Method 8260B, as well as total petroleum hydrocarbons-diesel range organics (TPH-DRO) using USEPA Method 8015. During the excavation, groundwater infiltrated into the upgradient northwest corner of the excavation at a depth of approximately 7 ft. bgs., while infiltrating into the rest of the downgradient excavation at approximately 6 ft. bgs. One groundwater sample (GW01) was collected at the base of the excavation and submitted to Summit for laboratory analysis of BTEX. Soil analytical data is summarized in Table 1 and groundwater analytical data is summarized in Table 2. The final excavation extent and sample locations are illustrated on Figure 3. The laboratory analytical reports are included as Attachment A.

Approximately 165 pounds of activated carbon were applied to the groundwater to mitigate remaining dissolved phase petroleum hydrocarbon impacts. Approximately 3,232 cubic yards of material was removed from the Site for disposal at Buffalo Ridge Landfill in Keenesburg, Colorado under signed Noble manifests while approximately 3,530 cubic yards of imported clean fill material was used to backfill. A total of 465 barrels (bbls) of groundwater was removed from the excavation and taken to the NGL C6 disposal facility. The final excavation area measured approximately 125 ft. by 115 ft. by 6 ft. bgs.

Results

Laboratory results indicated that the excavation groundwater sample exceeded COGCC Table 910-1 groundwater standards for benzene, toluene and total xylenes. Laboratory results for the submitted soil samples from the final excavation perimeter indicate that BTEX, naphthalene, TPH-GRO, and TPH-DRO concentrations are below COGCC Table 910-1 soil standards and confirm that vadose zone impacts were successfully removed from the Site through excavation activities.

Conclusions

Based on the results of the excavation and remediation activities described above, no soil impacts remain at the Site and dissolved phase impacts were treated using activated carbon. To address the remaining groundwater impacts, monitoring wells will be installed within and adjacent to the excavation footprint, and quarterly groundwater monitoring events will be initiated. Should petroleum hydrocarbon impacts to groundwater persist at the Site, additional remediation strategies will be evaluated.

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 (720) 431-1190 if you require additional information.

Sincerely,
Tasman Geosciences, Inc.

A handwritten signature in blue ink, appearing to read "Brandon Bruns". The signature is fluid and cursive, with the first name "Brandon" and last name "Bruns" clearly distinguishable.

Brandon Bruns, PE
Project Manager

Attached:

Table 1 – Soil Analytical Data

Table 2 – Groundwater Analytical Data

Figure 1 – Site Location Map

Figure 2 – Site Overview

Figure 3 – Excavation Soil and Groundwater Analytical Results Map (11/27/18 – 2/4/19)

Attachment A – Laboratory Analytical Data Reports

TABLES

TABLE 1
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - THOMPSON #3

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)
COGCC Standard		0.17	85	100	175	500		23
SS01@7'	11/27/18	1.5	7.3	1.0	14	350	98	0.44
SS02@7'	11/27/18	0.077	0.14	0.0092	0.15	<50	<50	<0.010
SS03@7'	11/27/18	10	45	3.5	53	1,100	82	0.18
SS04@7'	11/28/18	0.034	0.20	0.021	0.32	<50	<50	<0.010
SS05@7'	11/28/18	0.31	2.3	0.14	3.7	<50	<50	0.025
SS06@7'	12/07/18	0.012	0.029	0.0072	0.093	<50	<50	<0.010
SS07@7'	12/07/18	0.0085	0.020	<0.0050	0.042	<50	<50	<0.010
SS09@7'	12/11/18	<0.0020	<0.0050	<0.0050	<0.010	690	85	0.29
SS10@7'	12/11/18	0.79	0.31	0.47	5.8	180	62	0.099
SS11@5.5'	12/14/18	0.21	0.12	0.015	0.30	<50	<50	<0.010
SS12@5.5'	12/14/18	0.63	0.20	0.043	0.54	<50	<50	<0.010
SS13@5.5'	12/20/18	0.034	0.029	<0.0050	0.040	<50	<50	<0.010
SS14@5.5'	12/20/18	0.015	0.0064	<0.0050	0.020	<50	<50	<0.010
SS15@5.5'	12/20/18	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS16@5.5'	12/20/18	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS17@5.5' ¹	01/04/19	14	5.1	1.7	76	2700	300	0.35
SS18@5.5'	01/04/19	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS19@5.5'	01/08/19	1.1	9.6	1.9	24	980	150	0.13
SS20@5.5'	01/08/19	10	46	5.9	63	2700	310	0.42
SS21@5.5'	01/08/19	8.9	60	9.2	90	3500	600	0.54
SS22@5.5'	01/08/19	0.014	0.045	0.0065	0.12	<50	<50	<0.010
SS23@5.5'	01/08/19	0.0080	0.022	0.0053	0.094	<50	<50	<0.010
SS24@5.5'	01/09/19	1.7	9.5	1.1	15	540	140	0.40
SS25@5.5'	01/09/19	Not Submitted for Laboratory Analysis						
SS26@5.5'	01/09/19	3.4	19	5.5	67	2000	600	0.44
SS27@5.5' ¹	01/09/19	<0.0020	<0.0050	<0.0050	<0.010	57	70	0.11
SS28@5.5'	01/11/19	1.0	13	4.4	70	990	620	2.8
SS29@5.5'	01/11/19	4.1	26	3.4	49	840	140	2.7
SS30@5.5'	01/11/19	5.9	34	5.7	86	1400	760	2.8
SS31@5.5'	01/11/19	2.0	8.6	1.7	24	440	160	2.5
SS32@5.5'	01/11/19	<0.0020	0.0081	0.0077	0.073	<50	<50	0.021
SS33@5.5'	01/11/19	5.1	42	4.7	72	1200	290	2.5
SS34@5.5'	01/11/19	14	31	9.0	120	2100	580	4.3
SS35@5.5	01/11/19	7.3	33	3.1	45	810	120	2.5
SS36@5'	01/15/19	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS37@5'	01/15/19	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS38@5' ¹	01/15/19	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS39@5'	01/15/19	3.5	10	1.7	15	<50	89	0.19
SS40@5' ¹	01/15/19	3.6	7.1	2.9	18	<50	89	0.19
SS41@5'	01/15/19	0.86	1.4	0.75	7.4	<50	<50	0.093
SS42@5' ¹	01/15/19	0.090	0.23	0.15	1.4	<50	<50	0.021

TABLE 1
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - THOMPSON #3

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)
COGCC Standard		0.17	85	100	175	500		23
SS43@5.5'	01/16/19	0.049	0.0093	<0.0050	0.13	<50	<50	<0.010
SS44@5.5'	01/16/19	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS45@5.5'	01/16/19	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS46@5.5'	01/16/19	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS47@5.5'	01/16/19	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS48@5.5' ²	01/16/19	16	120	16	210	2700	520	1.9
SS49@5.5'	01/17/19	34	86	13	160	2600	300	1.2
SS50@5.5'	01/17/19	18	62	7.8	100	1800	260	0.87
SS51@5.5'	01/17/19	3.0	10	1.3	16	270	830	0.14
SS52@5.5'	01/17/19	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS53@5.5'	01/17/19	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS54@5.5'	01/17/19	0.35	3.8	0.78	12	190	150	0.17
SS55@5.5'	01/21/19	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS56@5.5'	01/21/19	0.0067	0.014	<0.0050	<0.010	<50	<50	<0.010
SS57@5.5'	01/21/19	0.56	0.72	0.23	2.7	<50	<50	0.031
SS58@5.5' ¹	01/21/19	19	150	32	380	6900	570	4.8
SS59@5.5'	01/21/19	12	75	8.1	100	2500	56	<1.0
SS60@5.5'	01/23/19	<0.0020	<0.0050	<0.0050	<0.010	<50	53	<0.010
SS61@5.5'	01/23/19	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS62@5.5'	01/23/19	Not Submitted for Laboratory Analysis						
SS63@5'	01/25/19	Not Submitted for Laboratory Analysis						
SS64@5'	01/25/19	Not Submitted for Laboratory Analysis						
SS65@5.5'	02/04/19	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS66@5.5'	02/04/19	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS67@5.5'	02/04/19	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010

Notes:

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 are equal to or exceed the COGCC Table 910-1 standard

1. Surrogate compounds 1,2 - Dichloroethane-d4, toluene-d8, and/or 4-Bromofluorbenzene have a laboratory flag of S-02, which means the surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
2. The concentration indicated for this toluene is an estimated value above the calibration range of the instrument

TABLE 2
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - THOMPSON #3

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Standard		5	560	700	1,400
GW01	11/28/18	5,400	10,000	600	7,100

Notes:

COGCC = Colorado Oil and Gas Conservation Commission

µg/L = Micrograms per liter

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

Groundwater standards referenced from COGCC Table 910-1

Highlighted results are equal to or exceed the COGCC Table 910-1 standard

FIGURES

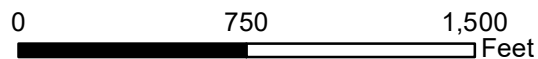
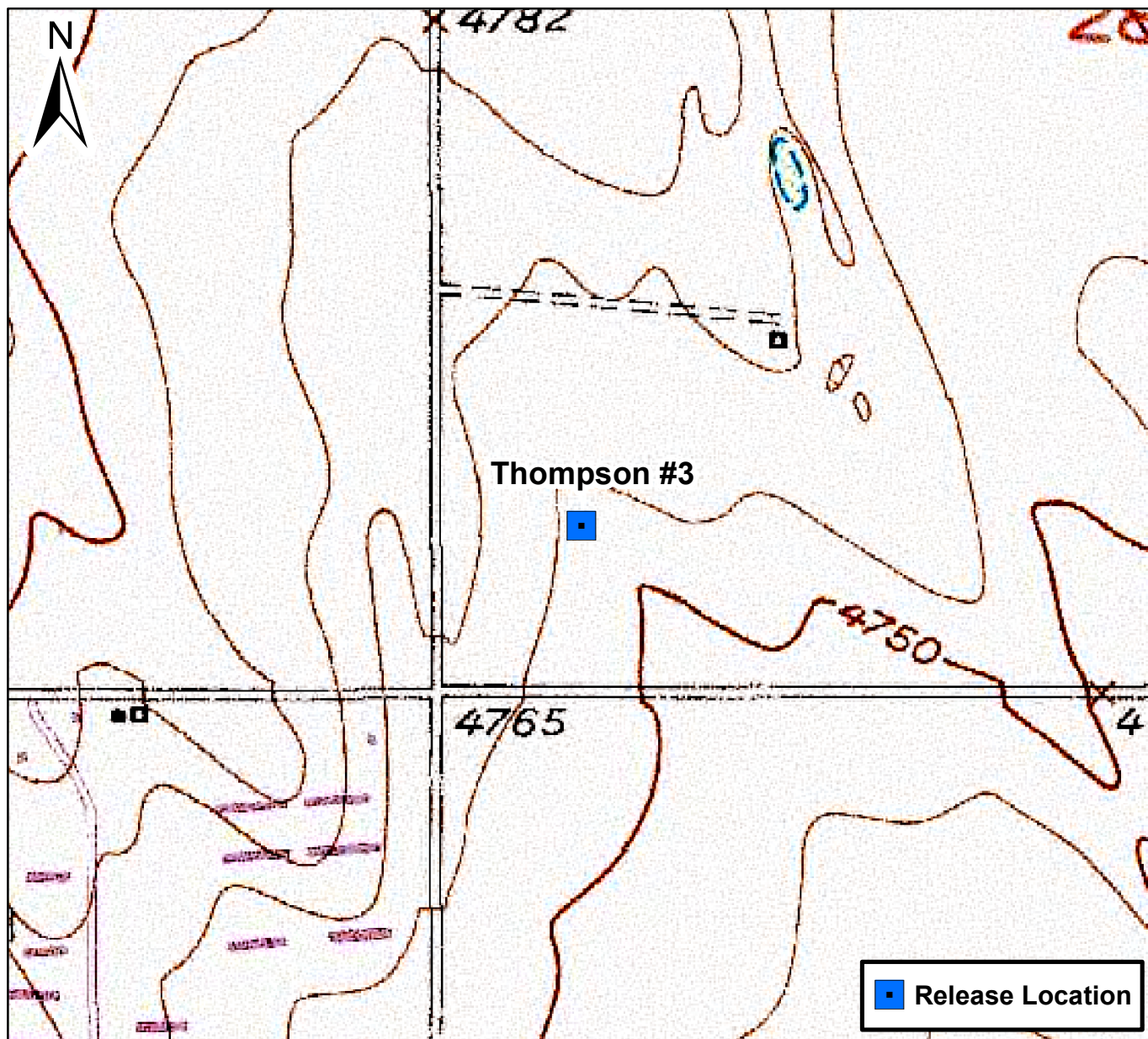


Figure 1

Site Location Map
Thompson #3
SWSW S28 T4N R64W
Weld County, Colorado



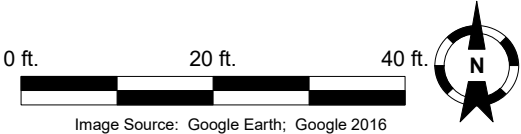



Legend

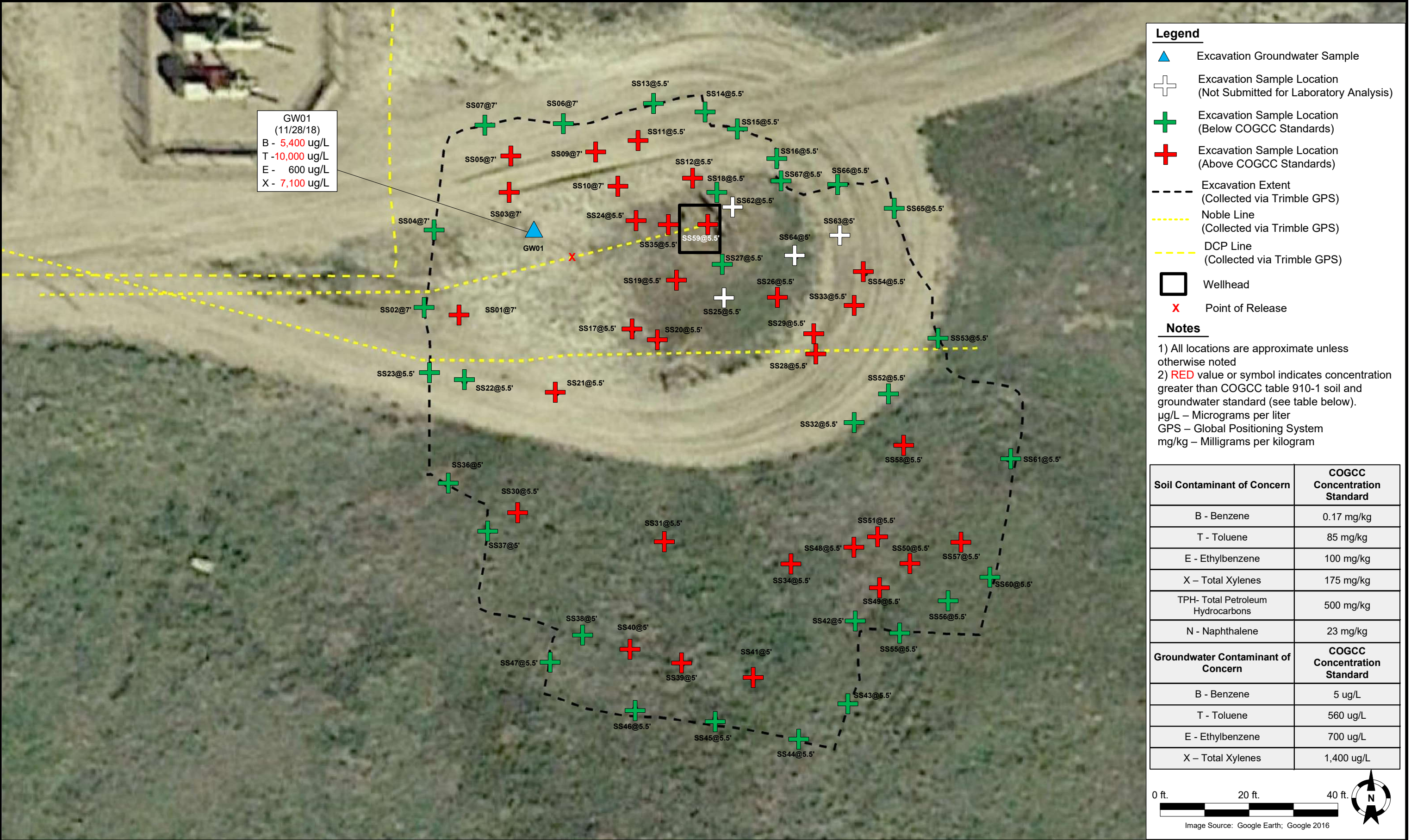
- Excavation Extent
(Collected via Trimble GPS)
- Noble Line
(Collected via Trimble GPS)
- DCP Line
(Collected via Trimble GPS)
- Wellhead
- X Point of Release

Notes

- 1) All locations are approximate unless otherwise noted
 - 2) Underground facilities have been spatially projected
 - 3) Site infrastructure has not been removed from location
- GPS – Global Positioning System



DATE: 2/5/19	 <div>Tasman Geosciences, Inc. 6899 Pecos Street – Unit C Denver, CO 80221</div>	<div>Noble Energy, Inc. – DJ Basin Thompson #3</div> <div>SWSW, Section 28, Township 4 North, Range 64 West Weld County, Colorado</div>	Site Overview	Figure 2
DESIGNED BY: DA				
DRAWN BY: MG				



ATTACHMENT A

LABORATORY ANALYTICAL DATA REPORTS

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 28, 2018

Brandon Bruns

Tasman Geosciences

6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - Thompson #3

Enclosed are the results of analyses for samples received by Summit Scientific on 11/27/18 18:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
11/28/18 06:18

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@7'	1811311-01	Soil	11/27/18 14:30	11/27/18 18:15
SS02@7'	1811311-02	Soil	11/27/18 14:34	11/27/18 18:15
SS03@7'	1811311-03	Soil	11/27/18 14:40	11/27/18 18:15

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.

1811311

303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 1

Project Manager: Brandon Bruns, Invoice: Jacob Evans
E-Mail: Bbruns@tasman-geo.com
Project Name: Thompson #3
Project Number: -

www.s2scientific.com

Sample Receipt Checklist

S2 Work Order: 1811311

Client: Noble/Tasman

Client Project ID: Thompson #3

Shipped Via: Pickup
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

Matrix (check all that apply): Air / Soil/Solid Water Other: _____
(Describe)

Temp (°C)	<u>3.6</u>
-----------	------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?				
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<u>/</u>			
Was adequate sample volume provided ⁽¹⁾ ?	<u>/</u>			
If custody seals are present, are they intact ⁽¹⁾ ?				
Are samples with holding times due within 48 hours sample due within 48 hours present?			<u>/</u>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<u>/</u>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<u>/</u>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<u>/</u>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<u>/</u>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<u>/</u>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<u>/</u>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			<u>/</u>	
If dissolved metals are requested, were samples field filtered?			<u>/</u>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

UP
Custodian Printed Name or Initials

[Signature]
Signature or Initials of Custodian

11.27.18 1840
Date/Time



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
11/28/18 06:18

SS01@7'
1811311-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/27/18 14:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	1.5	0.20	mg/kg	100	1811335	11/27/18	11/27/18	EPA 8260B	
Toluene	7.3	0.50	"	"	"	"	"	"	
Ethylbenzene	1.0	0.50	"	"	"	"	"	"	
Xylenes (total)	14	1.0	"	"	"	"	"	"	
Naphthalene	0.44	0.010	"	1	"	"	"	"	
Gasoline Range Hydrocarbons	350	50	"	100	"	"	"	"	

Date Sampled: **11/27/18 14:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		102 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		113 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/27/18 14:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	98	50	mg/kg	1	1811336	11/27/18	11/28/18	EPA 8015M	

Date Sampled: **11/27/18 14:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: o-Terphenyl</i>		80.1 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Bruns

Reported:

11/28/18 06:18

SS02@7'
1811311-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/27/18 14:34**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	0.077	0.0020	mg/kg	1	1811335	11/27/18	11/27/18	EPA 8260B	
Toluene	0.14	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0092	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.15	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **11/27/18 14:34**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		84.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/27/18 14:34**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1811336	11/27/18	11/28/18	EPA 8015M	

Date Sampled: **11/27/18 14:34**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		85.9 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
11/28/18 06:18

SS03@7'
1811311-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/27/18 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	10	0.20	mg/kg	100	1811335	11/27/18	11/27/18	EPA 8260B	
Toluene	45	0.50	"	"	"	"	"	"	
Ethylbenzene	3.5	0.50	"	"	"	"	"	"	
Xylenes (total)	53	1.0	"	"	"	"	"	"	
Naphthalene	0.18	0.010	"	1	"	"	"	"	
Gasoline Range Hydrocarbons	1100	50	"	100	"	"	"	"	

Date Sampled: **11/27/18 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		112 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		101 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		122 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/27/18 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	82	50	mg/kg	1	1811336	11/27/18	11/28/18	EPA 8015M	

Date Sampled: **11/27/18 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		82.7 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
11/28/18 06:18

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 1811335 - EPA 5030 Soil MS

Blank (1811335-BLK1)

Prepared: 11/27/18 Analyzed: 11/28/18

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0375		"	0.0396		94.6	23-173			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.3	21-167			

LCS (1811335-BS1)

Prepared: 11/27/18 Analyzed: 11/28/18

Benzene	0.0905	0.0020	mg/kg	0.100		90.5	70-130			
Toluene	0.0915	0.0050	"	0.100		91.5	70-130			
Ethylbenzene	0.0914	0.0050	"	0.100		91.4	70-130			
m,p-Xylene	0.178	0.010	"	0.200		89.1	70-130			
o-Xylene	0.0893	0.0050	"	0.100		89.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0398		"	0.0396		100	23-173			
Surrogate: Toluene-d8	0.0402		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0402		"	0.0400		101	21-167			

Matrix Spike (1811335-MS1)

Source: 1811309-02

Prepared: 11/27/18 Analyzed: 11/28/18

Benzene	0.0882	0.0020	mg/kg	0.100	ND	88.2	70-130			
Toluene	0.0898	0.0050	"	0.100	ND	89.8	70-130			
Ethylbenzene	0.0911	0.0050	"	0.100	ND	91.1	70-130			
m,p-Xylene	0.179	0.010	"	0.200	ND	89.7	70-130			
o-Xylene	0.0905	0.0050	"	0.100	ND	90.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0393		"	0.0396		99.3	23-173			
Surrogate: Toluene-d8	0.0396		"	0.0400		99.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.5	21-167			

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Brunns

Reported:

11/28/18 06:18

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 1811335 - EPA 5030 Soil MS

Matrix Spike Dup (1811335-MSD1)	Source: 1811309-02			Prepared: 11/27/18 Analyzed: 11/28/18						
Benzene	0.0875	0.0020	mg/kg	0.100	ND	87.5	70-130	0.785	30	
Toluene	0.0874	0.0050	"	0.100	ND	87.4	70-130	2.61	30	
Ethylbenzene	0.0911	0.0050	"	0.100	ND	91.1	70-130	0.0329	30	
m,p-Xylene	0.179	0.010	"	0.200	ND	89.6	70-130	0.100	30	
o-Xylene	0.0900	0.0050	"	0.100	ND	90.0	70-130	0.565	30	
Surrogate: 1,2-Dichloroethane-d4	0.0399		"	0.0396		101	23-173			
Surrogate: Toluene-d8	0.0396		"	0.0400		99.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	21-167			

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
11/28/18 06:18

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1811336 - EPA 3550A

Blank (1811336-BLK1)

Prepared: 11/27/18 Analyzed: 11/28/18

C10-C28 (DRO) ND 50 mg/kg

LCS (1811336-BS1)

Prepared: 11/27/18 Analyzed: 11/28/18

C10-C28 (DRO) 444 50 mg/kg 500 88.8 70-130

Matrix Spike (1811336-MS1)

Source: 1811309-02

Prepared: 11/27/18 Analyzed: 11/28/18

C10-C28 (DRO) 452 50 mg/kg 500 30.7 84.2 70-130

Matrix Spike Dup (1811336-MSD1)

Source: 1811309-02

Prepared: 11/27/18 Analyzed: 11/28/18

C10-C28 (DRO) 405 50 mg/kg 500 30.7 74.8 70-130 10.9 20

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
11/28/18 06:18

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 29, 2018

Brandon Bruns

Tasman Geosciences

6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - Thompson #3

Enclosed are the results of analyses for samples received by Summit Scientific on 11/28/18 18:26. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
11/29/18 13:57

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW01	1811327-01	Water	11/28/18 08:35	11/28/18 18:26
SS04@7'	1811327-02	Soil	11/28/18 15:10	11/28/18 18:26
SS05@7'	1811327-03	Soil	11/28/18 15:15	11/28/18 18:26

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.

1811327

303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 1

Project Manager:	Brandon Bruns, Invoice: Jacob Evans
E-Mail:	Bbruns@tasman-geo.com
Project Name:	Thompson #3
Project Number:	-

www.s2scientific.com

Sample Receipt Checklist

S2 Work Order: 1811327

Client: Noble/Tasman

Client Project ID: Thompson #3

Shipped Via: Pickup
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

Matrix (check all that apply): Air / Soil/Solid / Water Other: _____
(Describe)

Temp (°C)	<u>2.9</u>
-----------	------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?	<u> / </u>			
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<u> / </u>			
Was adequate sample volume provided ⁽¹⁾ ?	<u> / </u>			
If custody seals are present, are they intact ⁽¹⁾ ?			<u> / </u>	
Are samples with holding times due within 48 hours sample due within 48 hours present?			<u> / </u>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<u> / </u>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<u> / </u>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<u> / </u>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<u> / </u>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.		<u> / </u>		
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<u> / </u>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<u> / </u>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			<u> / </u>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

CP
Custodian Printed Name or Initials

[Signature]
Signature or Initials of Custodian

11.28.18 1830
Date/Time



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
11/29/18 13:57

GW01
1811327-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/28/18 08:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	5400	100		ug/l	100	1811304	11/28/18	11/28/18	EPA 8260B	
Toluene	10000	100		"	"	"	"	"	"	
Ethylbenzene	600	100		"	"	"	"	"	"	
Xylenes (total)	7100	200		"	"	"	"	"	"	

Date Sampled: **11/28/18 08:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		140 %		23-173		"	"	11/28/18	"	
Surrogate: Toluene-d8		100 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		116 %		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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Bruns

Reported:

11/29/18 13:57

SS04@7'
1811327-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/28/18 15:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.034	0.0020	mg/kg	1	1811363	11/28/18	11/28/18	EPA 8260B	
Toluene	0.20	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.021	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.32	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **11/28/18 15:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/28/18 15:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1811365	11/28/18	11/29/18	EPA 8015M	

Date Sampled: **11/28/18 15:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		81.7 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
11/29/18 13:57

SS05@7'
1811327-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/28/18 15:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	0.31	0.0020	mg/kg	1	1811363	11/28/18	11/29/18	EPA 8260B	
Toluene	2.3	0.050	"	10	"	"	11/29/18	"	
Ethylbenzene	0.14	0.0050	"	1	"	"	11/29/18	"	
Xylenes (total)	3.7	0.10	"	10	"	"	11/29/18	"	
Naphthalene	0.025	0.010	"	1	"	"	11/29/18	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **11/28/18 15:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: 1,2-Dichloroethane-d4</i>		109 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.9 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		114 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/28/18 15:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1811365	11/28/18	11/29/18	EPA 8015M	

Date Sampled: **11/28/18 15:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: o-Terphenyl</i>		81.2 %	30-150		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Bruns

Reported:

11/29/18 13:57

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 1811304 - EPA 5030 Water MS

Blank (1811304-BLK1)

Prepared: 11/28/18 Analyzed: 11/29/18

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.1		"	13.2		99.0	23-173			
Surrogate: Toluene-d8	13.1		"	13.3		98.1	20-170			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		100	21-167			

LCS (1811304-BS1)

Prepared: 11/28/18 Analyzed: 11/29/18

Benzene	26.0	1.0	ug/l	33.3		77.9	70-130			
Toluene	29.0	1.0	"	33.3		87.0	70-130			
Ethylbenzene	34.6	1.0	"	33.3		104	70-130			
m,p-Xylene	66.4	2.0	"	66.7		99.6	70-130			
o-Xylene	31.9	1.0	"	33.3		95.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.0		"	13.2		98.9	23-173			
Surrogate: Toluene-d8	12.9		"	13.3		96.9	20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.9	21-167			

Matrix Spike (1811304-MS1)

Source: 1811268-01

Prepared: 11/28/18 Analyzed: 11/29/18

Benzene	26.8	1.0	ug/l	33.3	ND	80.3	70-130			
Toluene	30.8	1.0	"	33.3	ND	92.5	70-130			
Ethylbenzene	36.6	1.0	"	33.3	ND	110	70-130			
m,p-Xylene	70.6	2.0	"	66.7	ND	106	70-130			
o-Xylene	33.3	1.0	"	33.3	ND	99.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.2		"	13.2		100	23-173			
Surrogate: Toluene-d8	13.2		"	13.3		98.9	20-170			
Surrogate: 4-Bromofluorobenzene	13.3		"	13.3		99.9	21-167			

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
11/29/18 13:57

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 1811304 - EPA 5030 Water MS

Matrix Spike Dup (1811304-MSD1)				Source: 1811268-01		Prepared: 11/28/18 Analyzed: 11/29/18				
Benzene	26.6	1.0	ug/l	33.3	ND	79.8	70-130	0.712	30	
Toluene	29.8	1.0	"	33.3	ND	89.3	70-130	3.43	30	
Ethylbenzene	36.2	1.0	"	33.3	ND	109	70-130	1.18	30	
m,p-Xylene	69.2	2.0	"	66.7	ND	104	70-130	2.00	30	
o-Xylene	32.6	1.0	"	33.3	ND	97.8	70-130	2.12	30	
Surrogate: 1,2-Dichloroethane-d4	14.0		"	13.2		106	23-173			
Surrogate: Toluene-d8	12.7		"	13.3		95.3	20-170			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.0	21-167			

Batch 1811363 - EPA 5030 Soil MS

Blank (1811363-BLK1)				Prepared: 11/28/18 Analyzed: 11/29/18						
Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0413		"	0.0396		104	23-173			
Surrogate: Toluene-d8	0.0386		"	0.0400		96.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0423		"	0.0400		106	21-167			

LCS (1811363-BS1)				Prepared: 11/28/18 Analyzed: 11/29/18						
Benzene	0.0778	0.0020	mg/kg	0.100		77.8	70-130			
Toluene	0.0881	0.0050	"	0.100		88.1	70-130			
Ethylbenzene	0.103	0.0050	"	0.100		103	70-130			
m,p-Xylene	0.197	0.010	"	0.200		98.4	70-130			
o-Xylene	0.0964	0.0050	"	0.100		96.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0424		"	0.0396		107	23-173			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400		101	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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
11/29/18 13:57

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 1811363 - EPA 5030 Soil MS

Matrix Spike (1811363-MS1)		Source: 1811326-04			Prepared: 11/28/18 Analyzed: 11/29/18					
Benzene	0.0852	0.0020	mg/kg	0.100	0.0107	74.6	70-130			
Toluene	0.0906	0.0050	"	0.100	ND	90.6	70-130			
Ethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130			
m,p-Xylene	0.212	0.010	"	0.200	0.00693	102	70-130			
o-Xylene	0.102	0.0050	"	0.100	ND	102	70-130			
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	0.0433		"	0.0396		109	23-173			
Surrogate: Toluene-d8	0.0397		"	0.0400		99.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0414		"	0.0400		103	21-167			
<hr/>										
Matrix Spike Dup (1811363-MSD1)		Source: 1811326-04			Prepared: 11/28/18 Analyzed: 11/29/18					
Benzene	0.0849	0.0020	mg/kg	0.100	0.0107	74.2	70-130	0.353	30	
Toluene	0.0889	0.0050	"	0.100	ND	88.9	70-130	1.94	30	
Ethylbenzene	0.107	0.0050	"	0.100	ND	107	70-130	1.88	30	
m,p-Xylene	0.209	0.010	"	0.200	0.00693	101	70-130	1.39	30	
o-Xylene	0.100	0.0050	"	0.100	ND	100	70-130	1.49	30	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	0.0434		"	0.0396		109	23-173			
Surrogate: Toluene-d8	0.0396		"	0.0400		99.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0441		"	0.0400		110	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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
11/29/18 13:57

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1811365 - EPA 3550A

Blank (1811365-BLK1)

Prepared: 11/28/18 Analyzed: 11/29/18

C10-C28 (DRO) ND 50 mg/kg

LCS (1811365-BS1)

Prepared: 11/28/18 Analyzed: 11/29/18

C10-C28 (DRO) 459 50 mg/kg 500 91.8 70-130

Matrix Spike (1811365-MS1)

Source: 1811326-01

Prepared: 11/28/18 Analyzed: 11/29/18

C10-C28 (DRO) 655 50 mg/kg 500 179 95.1 70-130

Matrix Spike Dup (1811365-MSD1)

Source: 1811326-01

Prepared: 11/28/18 Analyzed: 11/29/18

C10-C28 (DRO) 620 50 mg/kg 500 179 88.2 70-130 5.46 20

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
11/29/18 13:57

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

December 09, 2018

Brandon Bruns

Tasman Geosciences

6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - Thompson #3

Enclosed are the results of analyses for samples received by Summit Scientific on 12/07/18 18:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/09/18 13:08

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS06@7'	1812093-01	Soil	12/07/18 13:00	12/07/18 18:30
SS07@7'	1812093-02	Soil	12/07/18 13:05	12/07/18 18:30

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.

1812093

Page 1 of 1

Project Manager:	Brandon Bruns, Invoice: Jacob Evans
E-Mail:	Bbruns@tasman-geo.com
Project Name:	Thompson #3
Project Number:	N/A

www.s2scientific.com

Sample Receipt Checklist

S2 Work Order 1812093

Client: Noble/Tasman Client Project ID: Thompson #3

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)	<u>4.2</u>
-----------	------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

CP
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

12.7.18 1835
Date/Time



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Brun

Reported:
12/09/18 13:08

SS06@7'
1812093-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/07/18 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	0.012	0.0020	mg/kg	1	1812119	12/07/18	12/07/18	EPA 8260B	
Toluene	0.029	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0072	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.093	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **12/07/18 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/07/18 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1812120	"	12/07/18	EPA 8015M	

Date Sampled: **12/07/18 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		121 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/09/18 13:08

SS07@7'
1812093-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/07/18 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0085	0.0020	mg/kg	1	1812119	12/07/18	12/08/18	EPA 8260B	
Toluene	0.020	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.042	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **12/07/18 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/07/18 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1812120	"	12/08/18	EPA 8015M	

Date Sampled: **12/07/18 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		126 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Brun

Reported:
12/09/18 13:08

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1812119 - EPA 5030 Soil MS

Blank (1812119-BLK1)

Prepared & Analyzed: 12/07/18

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0447		"	0.0396	113	23-173				
Surrogate: Toluene-d8	0.0401		"	0.0400	100	20-170				
Surrogate: 4-Bromofluorobenzene	0.0414		"	0.0400	103	21-167				

LCS (1812119-BS1)

Prepared & Analyzed: 12/07/18

Benzene	0.111	0.0020	mg/kg	0.100	111	70-130				
Toluene	0.111	0.0050	"	0.100	111	70-130				
Ethylbenzene	0.119	0.0050	"	0.100	119	70-130				
m,p-Xylene	0.235	0.010	"	0.200	117	70-130				
o-Xylene	0.107	0.0050	"	0.100	107	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0453		"	0.0396	114	23-173				
Surrogate: Toluene-d8	0.0420		"	0.0400	105	20-170				
Surrogate: 4-Bromofluorobenzene	0.0434		"	0.0400	108	21-167				

Matrix Spike (1812119-MS1)

Source: 1812092-01

Prepared & Analyzed: 12/07/18

Benzene	0.112	0.0020	mg/kg	0.100	ND	112	70-130			
Toluene	0.113	0.0050	"	0.100	ND	113	70-130			
Ethylbenzene	0.122	0.0050	"	0.100	ND	122	70-130			
m,p-Xylene	0.232	0.010	"	0.200	ND	116	70-130			
o-Xylene	0.110	0.0050	"	0.100	ND	110	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0417		"	0.0396	105	23-173				
Surrogate: Toluene-d8	0.0400		"	0.0400	100	20-170				
Surrogate: 4-Bromofluorobenzene	0.0416		"	0.0400	104	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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Bruns

Reported:

12/09/18 13:08

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 1812119 - EPA 5030 Soil MS

Matrix Spike Dup (1812119-MSD1)	Source: 1812092-01			Prepared & Analyzed: 12/07/18						
Benzene	0.112	0.0020	mg/kg	0.100	ND	112	70-130	0.0536	30	
Toluene	0.115	0.0050	"	0.100	ND	115	70-130	1.79	30	
Ethylbenzene	0.120	0.0050	"	0.100	ND	120	70-130	1.51	30	
m,p-Xylene	0.232	0.010	"	0.200	ND	116	70-130	0.0129	30	
o-Xylene	0.111	0.0050	"	0.100	ND	111	70-130	0.978	30	
Surrogate: 1,2-Dichloroethane-d4	0.0450		"	0.0396		114	23-173			
Surrogate: Toluene-d8	0.0409		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0437		"	0.0400		109	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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/09/18 13:08

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1812120 - EPA 3550A

Blank (1812120-BLK1)

Prepared & Analyzed: 12/07/18

C10-C28 (DRO) ND 50 mg/kg

LCS (1812120-BS1)

Prepared & Analyzed: 12/07/18

C10-C28 (DRO) 558 50 mg/kg 500 112 70-130

Matrix Spike (1812120-MS1)

Source: 1812092-01

Prepared & Analyzed: 12/07/18

C10-C28 (DRO) 557 50 mg/kg 500 19.9 107 70-130

Matrix Spike Dup (1812120-MSD1)

Source: 1812092-01

Prepared & Analyzed: 12/07/18

C10-C28 (DRO) 563 50 mg/kg 500 19.9 109 70-130 0.994 20

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/09/18 13:08

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

December 12, 2018

Brandon Bruns

Tasman Geosciences

6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - Thompson #3

Enclosed are the results of analyses for samples received by Summit Scientific on 12/11/18 17:49. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/12/18 06:18

ANALYTICAL REPORT FOR SAMPLES



Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS09@7'	1812118-01	Soil	12/11/18 15:32	12/11/18 17:49
SS10@7'	1812118-02	Soil	12/11/18 15:35	12/11/18 17:49

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.

Page 1 of 1

Project Manager:	Brandon Bruns, Invoice: Jacob Evans
E-Mail:	Bbruns@tasman-geo.com
Project Name:	Thompson #3
Project Number:	-

				Preservative				Matrix				Analyze For:										Special Instructions
Sample Description	Date Sampled	Time Sampled	Number of Containers	HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR							
SS09 @ 7'	12/11/18	1532	1			X			X				X	X								
SS10 @ 7'	12/11/18	1535	1			X			X				X	X								
Relinquished by:  Date/Time: 180 1532 12/11/18				Received by:  Date/Time: 12-11-18 1810 1537				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: _____				Sample Integrity: Temperature Upon Receipt: <u>2.9</u> Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>														
Relinquished by: _____ Date/Time: _____				Received in Lab by: _____ Date/Time: _____																		

Sample Receipt Checklist

S2 Work Order 1812118

Client: Noble/Tasman

Client Project ID: Thompson #3

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other P.U. Airbill #: _____

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____ (Describe)

Temp (°C)	<u>2.9</u>
-----------	------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

Custodian Printed Name or Initials CP

Signature of Custodian [Signature]

Date/Time 12.11.18 1815



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/12/18 06:18

SS09@7'
1812118-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/11/18 15:32**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1812150	12/11/18	12/12/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	0.29	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	690	50	"	100	"	"	"	"	

Date Sampled: **12/11/18 15:32**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		115 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/11/18 15:32**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	85	50	mg/kg	1	1812151	12/11/18	12/11/18	EPA 8015M	

Date Sampled: **12/11/18 15:32**

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

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/12/18 06:18

SS10@7'
1812118-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/11/18 15:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.79	0.20	mg/kg	100	1812150	12/11/18	12/12/18	EPA 8260B	
Toluene	0.31	0.050	"	10	"	"	"	"	
Ethylbenzene	0.47	0.0050	"	1	"	"	"	"	
Xylenes (total)	5.8	1.0	"	100	"	"	"	"	
Naphthalene	0.099	0.010	"	1	"	"	"	"	
Gasoline Range Hydrocarbons	180	50	"	100	"	"	"	"	

Date Sampled: **12/11/18 15:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		128 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/11/18 15:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	62	50	mg/kg	1	1812151	12/11/18	12/11/18	EPA 8015M	

Date Sampled: **12/11/18 15:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		112 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Brun

Reported:
12/12/18 06:18

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 1812150 - EPA 5030 Soil MS

Blank (1812150-BLK1)

Prepared: 12/11/18 Analyzed: 12/12/18

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0446		"	0.0396	113	23-173				
Surrogate: Toluene-d8	0.0419		"	0.0400	105	20-170				
Surrogate: 4-Bromofluorobenzene	0.0441		"	0.0400	110	21-167				

LCS (1812150-BS1)

Prepared: 12/11/18 Analyzed: 12/12/18

Benzene	0.119	0.0020	mg/kg	0.100	119	70-130				
Toluene	0.116	0.0050	"	0.100	116	70-130				
Ethylbenzene	0.117	0.0050	"	0.100	117	70-130				
m,p-Xylene	0.224	0.010	"	0.200	112	70-130				
o-Xylene	0.106	0.0050	"	0.100	106	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0444		"	0.0396	112	23-173				
Surrogate: Toluene-d8	0.0421		"	0.0400	105	20-170				
Surrogate: 4-Bromofluorobenzene	0.0423		"	0.0400	106	21-167				

Matrix Spike (1812150-MS1)

Source: 1812116-01

Prepared: 12/11/18 Analyzed: 12/12/18

Benzene	0.118	0.0020	mg/kg	0.100	ND	118	70-130			
Toluene	0.117	0.0050	"	0.100	ND	117	70-130			
Ethylbenzene	0.115	0.0050	"	0.100	ND	115	70-130			
m,p-Xylene	0.226	0.010	"	0.200	ND	113	70-130			
o-Xylene	0.107	0.0050	"	0.100	ND	107	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0470		"	0.0396	119	23-173				
Surrogate: Toluene-d8	0.0417		"	0.0400	104	20-170				
Surrogate: 4-Bromofluorobenzene	0.0444		"	0.0400	111	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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Bruns

Reported:

12/12/18 06:18

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 1812150 - EPA 5030 Soil MS

Matrix Spike Dup (1812150-MSD1)	Source: 1812116-01			Prepared: 12/11/18 Analyzed: 12/12/18						
Benzene	0.117	0.0020	mg/kg	0.100	ND	117	70-130	0.662	30	
Toluene	0.115	0.0050	"	0.100	ND	115	70-130	2.20	30	
Ethylbenzene	0.119	0.0050	"	0.100	ND	119	70-130	3.67	30	
m,p-Xylene	0.230	0.010	"	0.200	ND	115	70-130	1.62	30	
o-Xylene	0.111	0.0050	"	0.100	ND	111	70-130	3.91	30	
Surrogate: 1,2-Dichloroethane-d4	0.0467		"	0.0396		118	23-173			
Surrogate: Toluene-d8	0.0405		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0449		"	0.0400		112	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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/12/18 06:18

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1812151 - EPA 3550A

Blank (1812151-BLK1)

Prepared: 12/11/18 Analyzed: 12/12/18

C10-C28 (DRO) ND 50 mg/kg

LCS (1812151-BS1)

Prepared: 12/11/18 Analyzed: 12/12/18

C10-C28 (DRO) 541 50 mg/kg 500 108 70-130

Matrix Spike (1812151-MS1)

Source: 1812116-01

Prepared: 12/11/18 Analyzed: 12/12/18

C10-C28 (DRO) 575 50 mg/kg 500 32.0 109 70-130

Matrix Spike Dup (1812151-MSD1)

Source: 1812116-01

Prepared: 12/11/18 Analyzed: 12/12/18

C10-C28 (DRO) 538 50 mg/kg 500 32.0 101 70-130 6.73 20

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/12/18 06:18

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

December 16, 2018

Brandon Bruns

Tasman Geosciences

6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - Thompson #3

Enclosed are the results of analyses for samples received by Summit Scientific on 12/14/18 18:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/16/18 09:51

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS11@5.5'	1812183-01	Soil	12/14/18 13:25	12/14/18 18:30
SS12@5.5'	1812183-02	Soil	12/14/18 13:45	12/14/18 18:30

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.

Summit Scientific

S₂


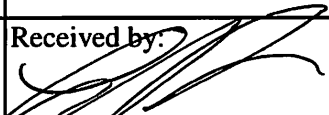
1812183

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: Noble / Tasman Project Manager: Brandon Bruns, Invoice: *Howard Arnold*
Address: 6899 Pecos Street E-Mail: Bbruns@tasman-geo.com
City/State/Zip: Denver / CO/ 80221
Phone: 303-487-1228 Project Name: *Thompson 3*
Sampler Name: *J. Whitener* Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR			
1	<i>SS1105.5'</i>	<i>12/14/18</i>	<i>1325</i>	<i>1</i>			<i>X</i>			<i>X</i>				<i>X</i>	<i>X</i>				
2	<i>SS1205.5'</i>	<i>↓</i>	<i>1345</i>	<i>1</i>			<i>X</i>			<i>X</i>				<i>X</i>	<i>X</i>				
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Relinquished by: 	Date/Time: <i>12/14/18</i> <i>1540</i>	Received by: <i>Tasman's Lock Box</i>	Date/Time: <i>12/14/18</i> <i>1540</i>	Turn Around Time (Check) Same Day <i>X</i> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input type="checkbox"/> 48 hours <input type="checkbox"/>	Notes:
Relinquished by: <i>Tasman's Lock Box</i>	Date/Time: <i>12.14.18</i> <i>1830</i>	Received by: 	Date/Time: <i>12.14.18</i> <i>1830</i>	Sample Integrity: Temperature Upon Receipt: <i>7.1</i>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: <i>Yes</i> No <input type="checkbox"/>	

Sample Receipt Checklist

S2 Work Order: 1812183

Client: Noble / Tasman Client Project ID: Thompson 3

Shipped Via: P.U. Airbill #: _____
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Matrix (check all that apply): Air Soil/Solid Water Other: _____
(Describe)

Temp (°C)	<u>7.1</u>
-----------	------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?				
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<u> </u>			
Were all samples received intact ⁽¹⁾ ?	<u> </u>			
Was adequate sample volume provided ⁽¹⁾ ?	<u> </u>			
If custody seals are present, are they intact ⁽¹⁾ ?			<u> </u>	
Are samples with holding times due within 48 hours sample due within 48 hours present?			<u> </u>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<u> </u>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<u> </u>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<u> </u>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<u> </u>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<u> </u>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<u> </u>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<u> </u>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			<u> </u>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Custodian Printed Name or Initials

Signature or Initials of Custodian

12.14.18 1830
Date/Time



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/16/18 09:51

SS11@5.5'
1812183-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/14/18 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.21	0.0020	mg/kg	1	1812214	12/14/18	12/15/18	EPA 8260B	
Toluene	0.12	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.015	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.30	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **12/14/18 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/14/18 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1812215	12/14/18	12/15/18	EPA 8015M	

Date Sampled: **12/14/18 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		101 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/16/18 09:51

SS12@5.5'
1812183-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/14/18 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.63	0.20	mg/kg	100	1812214	12/14/18	12/15/18	EPA 8260B	
Toluene	0.20	0.0050	"	1	"	"	12/15/18	"	
Ethylbenzene	0.043	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.54	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **12/14/18 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/14/18 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1812215	12/14/18	12/15/18	EPA 8015M	

Date Sampled: **12/14/18 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.4 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Brun

Reported:
12/16/18 09:51

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1812214 - EPA 5030 Soil MS

Blank (1812214-BLK1)

Prepared & Analyzed: 12/14/18

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0454		"	0.0396		115	23-173			
Surrogate: Toluene-d8	0.0410		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0426		"	0.0400		106	21-167			

LCS (1812214-BS1)

Prepared & Analyzed: 12/14/18

Benzene	0.116	0.0020	mg/kg	0.100		116	70-130			
Toluene	0.113	0.0050	"	0.100		113	70-130			
Ethylbenzene	0.125	0.0050	"	0.100		125	70-130			
m,p-Xylene	0.234	0.010	"	0.200		117	70-130			
o-Xylene	0.111	0.0050	"	0.100		111	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0443		"	0.0396		112	23-173			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0428		"	0.0400		107	21-167			

Matrix Spike (1812214-MS1)

Source: 1812181-01

Prepared & Analyzed: 12/14/18

Benzene	0.121	0.0020	mg/kg	0.100	ND	121	70-130			
Toluene	0.117	0.0050	"	0.100	ND	117	70-130			
Ethylbenzene	0.122	0.0050	"	0.100	ND	122	70-130			
m,p-Xylene	0.229	0.010	"	0.200	ND	115	70-130			
o-Xylene	0.109	0.0050	"	0.100	ND	109	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0454		"	0.0396		115	23-173			
Surrogate: Toluene-d8	0.0418		"	0.0400		105	20-170			
Surrogate: 4-Bromofluorobenzene	0.0422		"	0.0400		105	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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Brun

Reported:

12/16/18 09:51

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 1812214 - EPA 5030 Soil MS

Matrix Spike Dup (1812214-MSD1)		Source: 1812181-01			Prepared & Analyzed: 12/14/18					
Benzene	0.122	0.0020	mg/kg	0.100	ND	122	70-130	0.961	30	
Toluene	0.118	0.0050	"	0.100	ND	118	70-130	0.230	30	
Ethylbenzene	0.127	0.0050	"	0.100	ND	127	70-130	3.74	30	
m,p-Xylene	0.238	0.010	"	0.200	ND	119	70-130	3.64	30	
o-Xylene	0.110	0.0050	"	0.100	ND	110	70-130	0.822	30	
Surrogate: 1,2-Dichloroethane-d4	0.0456		"	0.0396		115	23-173			
Surrogate: Toluene-d8	0.0415		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0433		"	0.0400		108	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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Bruns

Reported:

12/16/18 09:51

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1812215 - EPA 3550A

Blank (1812215-BLK1)

Prepared: 12/14/18 Analyzed: 12/15/18

C10-C28 (DRO) ND 50 mg/kg

LCS (1812215-BS1)

Prepared: 12/14/18 Analyzed: 12/15/18

C10-C28 (DRO) 510 50 mg/kg 500 102 70-130

Matrix Spike (1812215-MS1)

Source: 1812181-01

Prepared: 12/14/18 Analyzed: 12/15/18

C10-C28 (DRO) 610 50 mg/kg 500 17.2 119 70-130

Matrix Spike Dup (1812215-MSD1)

Source: 1812181-01

Prepared: 12/14/18 Analyzed: 12/15/18

C10-C28 (DRO) 632 50 mg/kg 500 17.2 123 70-130 3.57 20

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/16/18 09:51

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

December 21, 2018

Brandon Bruns

Tasman Geosciences

6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - Thompson #3

Enclosed are the results of analyses for samples received by Summit Scientific on 12/20/18 18:48. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/21/18 06:07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS13@5.5'	1812262-01	Soil	12/20/18 09:30	12/20/18 18:48
SS14@5.5'	1812262-02	Soil	12/20/18 09:35	12/20/18 18:48
SS15@5.5'	1812262-03	Soil	12/20/18 09:40	12/20/18 18:48
SS16@5.5'	1812262-04	Soil	12/20/18 09:45	12/20/18 18:48

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.

1812262

Page 1 of 7

Project Manager:	Brandon Bruns, Invoice: Jacob Evans
E-Mail:	Bbruns@tasman-geo.com
Project Name:	Thompson #3
Project Number:	N/A

www.s2scientific.com

Sample Receipt Checklist

S2 Work Order 1812262

Client: Noble/Tasman Client Project ID: Thompson #3

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other P.U. Airbill #: _____

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)	<u>2.5</u>
-----------	------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

UP
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

12-20-18 1845
Date/Time



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/21/18 06:07

SS13@5.5'
1812262-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/20/18 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.034	0.0020	mg/kg	1	1812290	12/20/18	12/20/18	EPA 8260B	
Toluene	0.029	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.040	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **12/20/18 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.2 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/20/18 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1812291	12/20/18	12/20/18	EPA 8015M	

Date Sampled: **12/20/18 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		105 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Bruns

Reported:

12/21/18 06:07

SS14@5.5'
1812262-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/20/18 09:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	0.015	0.0020	mg/kg	1	1812290	12/20/18	12/21/18	EPA 8260B	
Toluene	0.0064	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.020	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **12/20/18 09:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.1 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/20/18 09:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1812291	12/20/18	12/20/18	EPA 8015M	

Date Sampled: **12/20/18 09:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		88.2 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/21/18 06:07

SS15@5.5'
1812262-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/20/18 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1812290	12/20/18	12/21/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **12/20/18 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		93.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.5 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/20/18 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1812291	12/20/18	12/20/18	EPA 8015M	

Date Sampled: **12/20/18 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		93.6 %	30-150		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Bruns

Reported:

12/21/18 06:07

SS16@5.5'
1812262-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/20/18 09:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1812290	12/20/18	12/21/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **12/20/18 09:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		93.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.5 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/20/18 09:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1812291	12/20/18	12/20/18	EPA 8015M	

Date Sampled: **12/20/18 09:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		85.9 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Brun

Reported:
12/21/18 06:07

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1812290 - EPA 5030 Soil MS

Blank (1812290-BLK1)

Prepared: 12/20/18 Analyzed: 12/21/18

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0431		"	0.0396	109	23-173				
Surrogate: Toluene-d8	0.0410		"	0.0400	102	20-170				
Surrogate: 4-Bromofluorobenzene	0.0419		"	0.0400	105	21-167				

LCS (1812290-BS1)

Prepared: 12/20/18 Analyzed: 12/21/18

Benzene	0.116	0.0020	mg/kg	0.100	116	70-130				
Toluene	0.115	0.0050	"	0.100	115	70-130				
Ethylbenzene	0.121	0.0050	"	0.100	121	70-130				
m,p-Xylene	0.230	0.010	"	0.200	115	70-130				
o-Xylene	0.109	0.0050	"	0.100	109	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0441		"	0.0396	111	23-173				
Surrogate: Toluene-d8	0.0411		"	0.0400	103	20-170				
Surrogate: 4-Bromofluorobenzene	0.0432		"	0.0400	108	21-167				

Matrix Spike (1812290-MS1)

Source: 1812260-01

Prepared: 12/20/18 Analyzed: 12/21/18

Benzene	0.113	0.0020	mg/kg	0.100	ND	113	70-130			
Toluene	0.115	0.0050	"	0.100	ND	115	70-130			
Ethylbenzene	0.123	0.0050	"	0.100	ND	123	70-130			
m,p-Xylene	0.254	0.010	"	0.200	0.0111	121	70-130			
o-Xylene	0.116	0.0050	"	0.100	0.00393	112	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0438		"	0.0396	111	23-173				
Surrogate: Toluene-d8	0.0395		"	0.0400	98.8	20-170				
Surrogate: 4-Bromofluorobenzene	0.0430		"	0.0400	107	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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Brun

Reported:

12/21/18 06:07

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 1812290 - EPA 5030 Soil MS

Matrix Spike Dup (1812290-MSD1)

Source: 1812260-01

Prepared: 12/20/18 Analyzed: 12/21/18

Benzene	0.118	0.0020	mg/kg	0.100	ND	118	70-130	4.65	30	
Toluene	0.122	0.0050	"	0.100	ND	122	70-130	5.76	30	
Ethylbenzene	0.125	0.0050	"	0.100	ND	125	70-130	1.26	30	
m,p-Xylene	0.244	0.010	"	0.200	0.0111	117	70-130	3.71	30	
o-Xylene	0.116	0.0050	"	0.100	0.00393	112	70-130	0.207	30	
Surrogate: 1,2-Dichloroethane-d4	0.0463		"	0.0396		117	23-173			
Surrogate: Toluene-d8	0.0409		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0448		"	0.0400		112	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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/21/18 06:07

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1812291 - EPA 3550A

Blank (1812291-BLK1)

Prepared: 12/20/18 Analyzed: 12/21/18

C10-C28 (DRO) ND 50 mg/kg

LCS (1812291-BS1)

Prepared: 12/20/18 Analyzed: 12/21/18

C10-C28 (DRO) 596 50 mg/kg 500 119 70-130

Matrix Spike (1812291-MS1)

Source: 1812260-01

Prepared: 12/20/18 Analyzed: 12/21/18

C10-C28 (DRO) 648 50 mg/kg 500 21.6 125 70-130

Matrix Spike Dup (1812291-MSD1)

Source: 1812260-01

Prepared: 12/20/18 Analyzed: 12/21/18

C10-C28 (DRO) 648 50 mg/kg 500 21.6 125 70-130 0.0552 20

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/21/18 06:07

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 07, 2019

Brandon Bruns

Tasman Geosciences

6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - Thompson #3

Enclosed are the results of analyses for samples received by Summit Scientific on 01/04/19 16:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/19 06:41

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS17@5.5'	1901042-01	Soil	01/04/19 12:30	01/04/19 16:10
SS18@5.5'	1901042-02	Soil	01/04/19 12:45	01/04/19 16:10

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.

Summit Scientific

1901042

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: 979-255-4235 Fax: -
Sampler Name: Max Garza

Project Manager: Brandon Bruns, Invoice: Jacob Evans
E-Mail: Bbruns@tasman-geo.com
Project Name: Thompson #3
Project Number: N/A

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analyze For:						Special Instructions
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR		
SS17@5.5'	1/4/19	1230	1			X			X								
SS18@5.5'	↓	1245	↓			↓			↓								
Relinquished by: <u>Max R</u>				Date/Time: <u>1/4/19 16:10</u>		Received by: <u>Lock Box</u>				Date/Time: <u>1/4/19 16:10</u>		Turn Around Time (Check)				Notes:	
Relinquished by: <u>Lock Box</u>				Date/Time: <u>1-4-19 1255</u>		Received by: <u>[Signature]</u>				Date/Time: <u>1-4-19 1255</u>		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"/>					
Relinquished by:				Date/Time:		Received in Lab by:				Date/Time:		Sample Integrity: Temperature Upon Receipt: <u>3.0</u> Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>					

Sample Receipt Checklist

S2 Work Order 1901042

Client: Noble/Tasman Client Project ID: Thompson #3

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other P.U. Airbill #: _____

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____ (Describe)

Temp (°C)	<u>3.0</u>
-----------	------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

UP
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

1.4.19 1655
Date/Time



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/19 06:41

SS17@5.5'
1901042-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/04/19 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	14	0.20	mg/kg	100	1901043	01/04/19	01/05/19	EPA 8260B	
Toluene	5.1	0.0050	"	1	"	"	01/05/19	"	
Ethylbenzene	1.7	0.0050	"	"	"	"	"	"	
Xylenes (total)	76	1.0	"	100	"	"	01/05/19	"	
Naphthalene	0.35	0.010	"	1	"	"	01/05/19	"	
Gasoline Range Hydrocarbons	2700	500	"	10	"	"	"	"	

Date Sampled: **01/04/19 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		229 %	23-173		"	"	"	"	S-02
Surrogate: Toluene-d8		93.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		590 %	21-167		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/04/19 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	300	50	mg/kg	1	1901044	01/04/19	01/05/19	EPA 8015M	

Date Sampled: **01/04/19 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		91.7 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/19 06:41

SS18@5.5'
1901042-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/04/19 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1901043	01/04/19	01/04/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/04/19 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/04/19 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1901044	01/04/19	01/05/19	EPA 8015M	

Date Sampled: **01/04/19 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		96.4 %	30-150		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Bruns

Reported:

01/07/19 06:41

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1901043 - EPA 5030 Soil MS

Blank (1901043-BLK1)

Prepared: 01/04/19 Analyzed: 01/05/19

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0443		"	0.0396		112	23-173			
Surrogate: Toluene-d8	0.0385		"	0.0400		96.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.8	21-167			

LCS (1901043-BS1)

Prepared: 01/04/19 Analyzed: 01/05/19

Benzene	0.155	0.0020	mg/kg	0.150		103	70-130			
Toluene	0.153	0.0050	"	0.150		102	70-130			
Ethylbenzene	0.184	0.0050	"	0.150		123	70-130			
m,p-Xylene	0.301	0.010	"	0.300		100	70-130			
o-Xylene	0.143	0.0050	"	0.150		95.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0436		"	0.0396		110	23-173			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0415		"	0.0400		104	21-167			

Matrix Spike (1901043-MS1)

Source: 1901039-01

Prepared: 01/04/19 Analyzed: 01/05/19

Benzene	0.141	0.0020	mg/kg	0.150	ND	93.8	70-130			
Toluene	0.142	0.0050	"	0.150	ND	94.9	70-130			
Ethylbenzene	0.167	0.0050	"	0.150	ND	111	70-130			
m,p-Xylene	0.296	0.010	"	0.300	ND	98.6	70-130			
o-Xylene	0.137	0.0050	"	0.150	ND	91.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0429		"	0.0396		108	23-173			
Surrogate: Toluene-d8	0.0399		"	0.0400		99.7	20-170			
Surrogate: 4-Bromofluorobenzene	0.0418		"	0.0400		104	21-167			

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Brunns

Reported:

01/07/19 06:41

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 1901043 - EPA 5030 Soil MS

Matrix Spike Dup (1901043-MSD1)

Source: 1901039-01

Prepared: 01/04/19 Analyzed: 01/05/19

Benzene	0.147	0.0020	mg/kg	0.150	ND	98.3	70-130	4.62	30	
Toluene	0.145	0.0050	"	0.150	ND	96.4	70-130	1.57	30	
Ethylbenzene	0.168	0.0050	"	0.150	ND	112	70-130	0.590	30	
m,p-Xylene	0.287	0.010	"	0.300	ND	95.7	70-130	2.99	30	
o-Xylene	0.131	0.0050	"	0.150	ND	87.2	70-130	4.28	30	
Surrogate: 1,2-Dichloroethane-d4	0.0425		"	0.0396		107	23-173			
Surrogate: Toluene-d8	0.0411		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/19 06:41

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1901044 - EPA 3550A

Blank (1901044-BLK1)

Prepared & Analyzed: 01/04/19

C10-C28 (DRO) ND 50 mg/kg

LCS (1901044-BS1)

Prepared & Analyzed: 01/04/19

C10-C28 (DRO) 612 50 mg/kg 500 122 70-130

Matrix Spike (1901044-MS1)

Source: 1901039-01

Prepared & Analyzed: 01/04/19

C10-C28 (DRO) 542 50 mg/kg 500 41.1 100 70-130

Matrix Spike Dup (1901044-MSD1)

Source: 1901039-01

Prepared & Analyzed: 01/04/19

C10-C28 (DRO) 565 50 mg/kg 500 41.1 105 70-130 4.15 20

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/19 06:41

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.
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

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 09, 2019

Brandon Bruns

Tasman Geosciences

6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - Thompson #3

Enclosed are the results of analyses for samples received by Summit Scientific on 01/08/19 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

DRAFT REPORT

DATA SUBJECT TO CHANGE



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/09/19 06:34

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS19@5.5'	1901090-01	Soil	01/08/19 10:00	01/08/19 18:00
SS20@5.5'	1901090-02	Soil	01/08/19 10:05	01/08/19 18:00
SS21@5.5'	1901090-03	Soil	01/08/19 10:10	01/08/19 18:00
SS22@5.5'	1901090-04	Soil	01/08/19 10:15	01/08/19 18:00
SS23@5.5'	1901090-05	Soil	01/08/19 10:20	01/08/19 18:00

DRAFT REPORT

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.

Summit Scientific

1901090

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: 979-255-4235 Fax: -
Sampler Name: Max Garza

Project Manager: Brandon Bruns, Invoice: Jacob Evans
E-Mail: Bbruns@tasman-geo.com
Project Name: Thompson #3
Project Number: N/A

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix		Analyze For:						Special Instructions	
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR		
SS19@5.5'	1/8/19	10 00	2			X			X								
SS20@5.5'	↓	10 05	↓														
SS21@5.5'	↓	10 10	↓														
SS22@5.5'	↓	10 15	↓														
SS23@5.5'	↓	10 20	↓														
Relinquished by: <u>Max</u>				Date/Time: <u>1/8/19 1745</u>		Received by: <u>Lock Box</u>				Date/Time: <u>1/8/19 1745</u>		Turn Around Time (Check)				Notes:	
Relinquished by: <u>TASMAN BGO</u>				Date/Time: <u>1/8/19 1800</u>		Received by: <u>[Signature]</u>				Date/Time: <u>1/8/19 1800</u>		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"/>					
Relinquished by:				Date/Time:		Received in Lab by:				Date/Time:		Sample Integrity: Temperature Upon Receipt: <u>5.4</u> Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>					

Sample Receipt Checklist

S2 Work Order 1901090

Client: Noble / Tasman Client Project ID: Thompson #3

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other P.U. Airbill #: _____

Matrix (check all that apply): Air ✓ Soil/Solid Water Other: _____
(Describe)

Temp (°C)	<u>5.4</u>
-----------	------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?	<u> ✓ </u>			
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<u> ✓ </u>			
Was adequate sample volume provided ⁽¹⁾ ?	<u> ✓ </u>			
If custody seals are present, are they intact ⁽¹⁾ ?			<u> ✓ </u>	
Are samples with holding times due within 48 hours sample due within 48 hours present?			<u> ✓ </u>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<u> ✓ </u>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<u> ✓ </u>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<u> ✓ </u>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<u> ✓ </u>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<u> ✓ </u>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<u> ✓ </u>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<u> ✓ </u>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			<u> ✓ </u>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

CP
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

1.8.19 1230
Date/Time



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/09/19 06:34

SS19@5.5'
1901090-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/08/19 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	1.1	0.20	mg/kg	100	1901086	01/08/19	01/09/19	EPA 8260B	
Toluene	9.6	0.50	"	"	"	"	"	"	
Ethylbenzene	1.9	0.50	"	"	"	"	"	"	
Xylenes (total)	24	1.0	"	"	"	"	"	"	
Naphthalene	0.13	0.010	"	1	"	"	"	"	
Gasoline Range Hydrocarbons	980	50	"	100	"	"	"	"	

Date Sampled: **01/08/19 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		121 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		90.8 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		122 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/08/19 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	150	50	mg/kg	1	1901087	01/08/19	01/08/19	EPA 8015M	

Date Sampled: **01/08/19 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		87.5 %	30-150		"	"	"	"	

DRAFT REPORT

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/09/19 06:34

SS20@5.5'
1901090-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/08/19 10:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	10	0.20	mg/kg	100	1901086	01/08/19	01/09/19	EPA 8260B	
Toluene	46	0.50	"	"	"	"	"	"	
Ethylbenzene	5.9	0.50	"	"	"	"	"	"	
Xylenes (total)	63	1.0	"	"	"	"	"	"	
Naphthalene	0.42	0.010	"	1	"	"	"	"	
Gasoline Range Hydrocarbons	2700	50	"	100	"	"	"	"	

Date Sampled: **01/08/19 10:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: 1,2-Dichloroethane-d4</i>		134 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		93.3 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		133 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/08/19 10:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	310	50	mg/kg	1	1901087	01/08/19	01/08/19	EPA 8015M	

Date Sampled: **01/08/19 10:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: o-Terphenyl</i>		85.3 %	30-150		"	"	"	"	

DRAFT REPORT

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/09/19 06:34

SS21@5.5'
1901090-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/08/19 10:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	8.9	0.20	mg/kg	100	1901086	01/08/19	01/09/19	EPA 8260B	
Toluene	60	0.50	"	"	"	"	"	"	
Ethylbenzene	9.2	0.50	"	"	"	"	"	"	
Xylenes (total)	90	1.0	"	"	"	"	"	"	
Naphthalene	0.54	0.010	"	1	"	"	"	"	
Gasoline Range Hydrocarbons	3500	50	"	100	"	"	"	"	

Date Sampled: **01/08/19 10:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: 1,2-Dichloroethane-d4</i>		141 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		95.2 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		140 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/08/19 10:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	600	50	mg/kg	1	1901087	01/08/19	01/08/19	EPA 8015M	

Date Sampled: **01/08/19 10:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: o-Terphenyl</i>		96.2 %	30-150		"	"	"	"	

DRAFT REPORT

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/09/19 06:34

SS22@5.5'
1901090-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/08/19 10:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	0.014	0.0020	mg/kg	1	1901086	01/08/19	01/08/19	EPA 8260B	
Toluene	0.045	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0065	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.12	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/08/19 10:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: 1,2-Dichloroethane-d4</i>		112 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		97.5 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		101 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/08/19 10:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1901087	01/08/19	01/08/19	EPA 8015M	

Date Sampled: **01/08/19 10:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: o-Terphenyl</i>		92.8 %	30-150		"	"	"	"	

DRAFT REPORT

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/09/19 06:34

SS23@5.5'
1901090-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/08/19 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0080	0.0020	mg/kg	1	1901086	01/08/19	01/08/19	EPA 8260B	
Toluene	0.022	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0053	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.094	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/08/19 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		112 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		96.4 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		99.9 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/08/19 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1901087	01/08/19	01/09/19	EPA 8015M	

Date Sampled: **01/08/19 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		89.0 %	30-150		"	"	"	"	

DRAFT REPORT

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Bruns

Reported:

01/09/19 06:34

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 1901087 - EPA 3550A

Blank (1901087-BLK1)

Prepared: 01/08/19 Analyzed: 01/09/19

C10-C28 (DRO) ND 50 mg/kg

LCS (1901087-BS1)

Prepared: 01/08/19 Analyzed: 01/09/19

C10-C28 (DRO) 504 50 mg/kg 500 101 70-130

Matrix Spike (1901087-MS1)

Source: 1901084-01

Prepared: 01/08/19 Analyzed: 01/09/19

C10-C28 (DRO) 215 50 mg/kg 500 34.1 36.3 70-130 QM-07

Matrix Spike Dup (1901087-MSD1)

Source: 1901084-01

Prepared: 01/08/19 Analyzed: 01/09/19

C10-C28 (DRO) 216 50 mg/kg 500 34.1 36.4 70-130 0.434 20 QM-07

DRAFT REPORT

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/09/19 06:34

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
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

DRAFT REPORT

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.

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 10, 2019

Brandon Bruns

Tasman Geosciences

6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - Thompson #3

Enclosed are the results of analyses for samples received by Summit Scientific on 01/09/19 17:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/10/19 06:34

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS24@5.5'	1901103-01	Soil	01/09/19 13:15	01/09/19 17:50
SS26@5.5'	1901103-02	Soil	01/09/19 13:25	01/09/19 17:50
SS27@5.5'	1901103-03	Soil	01/09/19 13:35	01/09/19 17:50

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.

Summit Scientific

S₂

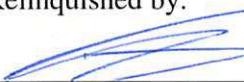
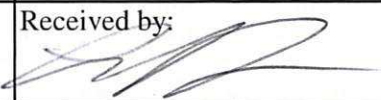
1901103

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: Noble / Tasman Project Manager: Brandon Bruns, Invoice: Howard Samola
Address: 6899 Pecos Street E-Mail: Bbruns@tasman-geo.com
City/State/Zip: Denver / CO/ 80221
Phone: 303-487-1228 Project Name: Thompson 3
Sampler Name: J. Whritenour Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR				
1	SS 24 @ 5.5'	1-9-19	1315	1			X			X				X	X					
2	SS 26 @ 5.5'		1325	1																
3	SS 27 @ 5.5'		1335	1																
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Relinquished by: 	Date/Time: 1/9/19 1453	Received by: Tasman's Lock Box	Date/Time: 1/9/19 1453	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours ___ 24 hours ___ Standard ___ 48 hours ___ Sample Integrity: Temperature Upon Receipt: <u>5.6</u> Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 1750	Received by: 	Date/Time: 1/9/19 1750		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Sample Receipt Checklist

S2 Work Order 1901103

Client: Noble/Tasman

Client Project ID: Thompson 3

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other P.U. Airbill #: _____

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____ (Describe)

Temp (°C)	<u>5.6</u>
-----------	------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Custodian Printed Name or Initials GP

Signature of Custodian [Signature]

Date/Time 1.9.19 1815



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/10/19 06:34

SS24@5.5'
1901103-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/19 13:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	1.7	0.20	mg/kg	100	1901109	01/09/19	01/09/19	EPA 8260B	
Toluene	9.5	0.50	"	"	"	"	"	"	
Ethylbenzene	1.1	0.50	"	"	"	"	"	"	
Xylenes (total)	15	1.0	"	"	"	"	"	"	
Naphthalene	0.40	0.010	"	1	"	"	"	"	
Gasoline Range Hydrocarbons	540	50	"	100	"	"	"	"	

Date Sampled: **01/09/19 13:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		132 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/19 13:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	140	50	mg/kg	1	1901110	01/09/19	01/09/19	EPA 8015M	

Date Sampled: **01/09/19 13:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		88.0 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/10/19 06:34

SS26@5.5'
1901103-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/19 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	3.4	0.20	mg/kg	100	1901109	01/09/19	01/10/19	EPA 8260B	
Toluene	19	0.50	"	"	"	"	"	"	
Ethylbenzene	5.5	0.50	"	"	"	"	"	"	
Xylenes (total)	67	1.0	"	"	"	"	"	"	
Naphthalene	0.44	0.010	"	1	"	"	"	"	
Gasoline Range Hydrocarbons	2000	50	"	100	"	"	"	"	

Date Sampled: **01/09/19 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		118 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		139 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/19 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	600	50	mg/kg	1	1901110	01/09/19	01/09/19	EPA 8015M	

Date Sampled: **01/09/19 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.3 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/10/19 06:34

SS27@5.5'
1901103-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/19 13:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1901109	01/09/19	01/09/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	0.11	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	57	50	"	"	"	"	"	"	

Date Sampled: **01/09/19 13:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		91.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		260 %	20-170		"	"	"	"	S-02
Surrogate: 4-Bromofluorobenzene		183 %	21-167		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/19 13:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	70	50	mg/kg	1	1901110	01/09/19	01/09/19	EPA 8015M	

Date Sampled: **01/09/19 13:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		91.4 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/10/19 06:34

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1901109 - EPA 5030 Soil MS

Blank (1901109-BLK1)

Prepared: 01/09/19 Analyzed: 01/10/19

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0403		"	0.0400		101	23-173			
Surrogate: Toluene-d8	0.0390		"	0.0400		97.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0416		"	0.0400		104	21-167			

LCS (1901109-BS1)

Prepared: 01/09/19 Analyzed: 01/10/19

Benzene	0.109	0.0020	mg/kg	0.100		109	70-130			
Toluene	0.107	0.0050	"	0.100		107	70-130			
Ethylbenzene	0.120	0.0050	"	0.100		120	70-130			
m,p-Xylene	0.230	0.010	"	0.200		115	70-130			
o-Xylene	0.107	0.0050	"	0.100		107	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0385		"	0.0400		96.2	23-173			
Surrogate: Toluene-d8	0.0409		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0410		"	0.0400		103	21-167			

Matrix Spike (1901109-MS1)

Source: 1901103-03

Prepared: 01/09/19 Analyzed: 01/10/19

Benzene	0.110	0.0020	mg/kg	0.100	ND	110	70-130			
Toluene	0.108	0.0050	"	0.100	ND	108	70-130			
Ethylbenzene	0.120	0.0050	"	0.100	ND	120	70-130			
m,p-Xylene	0.231	0.010	"	0.200	ND	115	70-130			
o-Xylene	0.107	0.0050	"	0.100	ND	107	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0394		"	0.0400		98.5	23-173			
Surrogate: Toluene-d8	0.0382		"	0.0400		95.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0408		"	0.0400		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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Bruns

Reported:

01/10/19 06:34

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 1901109 - EPA 5030 Soil MS

Matrix Spike Dup (1901109-MSD1)	Source: 1901103-03			Prepared: 01/09/19 Analyzed: 01/10/19						
Benzene	0.0936	0.0020	mg/kg	0.100	ND	93.6	70-130	15.8	30	
Toluene	0.0938	0.0050	"	0.100	ND	93.8	70-130	14.5	30	
Ethylbenzene	0.103	0.0050	"	0.100	ND	103	70-130	15.1	30	
m,p-Xylene	0.201	0.010	"	0.200	ND	100	70-130	13.8	30	
o-Xylene	0.0920	0.0050	"	0.100	ND	92.0	70-130	15.5	30	
Surrogate: 1,2-Dichloroethane-d4	0.0413		"	0.0400		103	23-173			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/10/19 06:34

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1901110 - EPA 3550A

Blank (1901110-BLK1)

Prepared: 01/09/19 Analyzed: 01/10/19

C10-C28 (DRO) ND 50 mg/kg

LCS (1901110-BS1)

Prepared: 01/09/19 Analyzed: 01/10/19

C10-C28 (DRO) 586 50 mg/kg 500 117 70-130

Matrix Spike (1901110-MS1)

Source: 1901103-01

Prepared: 01/09/19 Analyzed: 01/10/19

C10-C28 (DRO) 651 50 mg/kg 500 145 101 70-130

Matrix Spike Dup (1901110-MSD1)

Source: 1901103-01

Prepared: 01/09/19 Analyzed: 01/10/19

C10-C28 (DRO) 635 50 mg/kg 500 145 98.1 70-130 2.45 20

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/10/19 06:34

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.
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

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 14, 2019

Brandon Bruns

Tasman Geosciences

6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - Thompson #3

Enclosed are the results of analyses for samples received by Summit Scientific on 01/11/19 16:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/14/19 06:20

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS28@5.5'	1901157-01	Soil	01/11/19 13:30	01/11/19 16:40
SS29@5.5'	1901157-02	Soil	01/11/19 13:35	01/11/19 16:40
SS30@5.5'	1901157-03	Soil	01/11/19 13:40	01/11/19 16:40
SS31@5.5'	1901157-04	Soil	01/11/19 13:45	01/11/19 16:40
SS32@5.5'	1901157-05	Soil	01/11/19 13:50	01/11/19 16:40
SS33@5.5'	1901157-06	Soil	01/11/19 13:55	01/11/19 16:40
SS34@5.5'	1901157-07	Soil	01/11/19 14:00	01/11/19 16:40
SS35@5.5'	1901157-08	Soil	01/11/19 14:15	01/11/19 16:40

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.

Summit Scientific

S₂

741 Corporate Circle, Suite J ♦ Golden, Colorado 80401

303-277-9310 ♦ 303-374-5933

Page 1 of 1

Client: Noble / Tasman

Project Manager: Brandon Bruns, Invoice: Jacob Evans

Address: —

E-Mail: BBruns@tasman-geo.com

City/State/Zip: —

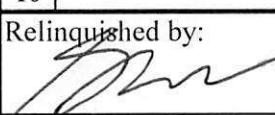

Phone: 917-766-9608 Fax: —

Project Name: Thompson #3

Sampler Name: GB

Project Number: —

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions	
					HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	8260 B	GBTEXN	8015	DRO						
1	SS28 @ 5.5'	1/11/19	1330	1			X			X			X	X								
2	SS29 @ 5.5'	↓	1335	↓			↓			↓			↓	↓								
3	SS30 @ 5.5'	↓	1340	↓			↓			↓			↓	↓								
4	SS31 @ 5.5'	↓	1345	↓			↓			↓			↓	↓								
5	SS32 @ 5.5'	↓	1350	↓			↓			↓			↓	↓								
6	SS33 @ 5.5'	↓	1355	↓			↓			↓			↓	↓								
7	SS34 @ 5.5'	↓	1400	↓			↓			↓			↓	↓								
8	SS35 @ 5.5'	↓	1415	↓			↓			↓			↓	↓								
9																						
10																						

Relinquished by: 	Date/Time: 1640 1/11/19	Received by: TASMANT BOX	Date/Time: 1-11-19 16:40	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours — 24 hours — Standard — 48 hours —	Notes:
Relinquished by: Tasman Box	Date/Time: 1640 1/11/19	Received by: 	Date/Time: 1-11-19 16:40	Sample Integrity:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 2 Intact: <input checked="" type="checkbox"/> Yes No	

Sample Receipt Checklist

S2 Work Order: 1901157

Client: NOBLE/TASMAN Client Project ID: THOMPSON #3

Shipped Via: P.O. Airbill #: _____
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Matrix (check all that apply): Air X Soil/Solid Water Other: _____
(Describe)

Temp (°C)	<u>.2</u>
-----------	-----------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?				
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<u>X</u>			
Were all samples received intact ⁽¹⁾ ?	<u>X</u>			
Was adequate sample volume provided ⁽¹⁾ ?	<u>X</u>			
If custody seals are present, are they intact ⁽¹⁾ ?			<u>X</u>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<u>X</u>			
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<u>X</u>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<u>X</u>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<u>X</u>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<u>X</u>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<u>X</u>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?				
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			<u>X</u>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			<u>X</u>	
If dissolved metals are requested, were samples field filtered?			<u>X</u>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Nuri
Custodian Printed Name or Initials

LA 1-11-19
Signature or Initials of Custodian

17:25
Date/Time



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/14/19 06:20

SS28@5.5'
1901157-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/11/19 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	1.0	0.20	mg/kg	100	1901154	01/11/19	01/12/19	EPA 8260B	
Toluene	13	0.50	"	"	"	"	"	"	
Ethylbenzene	4.4	0.50	"	"	"	"	"	"	
Xylenes (total)	70	1.0	"	"	"	"	"	"	
Naphthalene	2.8	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	990	500	"	10	"	"	"	"	

Date Sampled: **01/11/19 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: 1,2-Dichloroethane-d4</i>		113 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		99.5 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		118 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/11/19 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	620	50	mg/kg	1	1901155	"	01/11/19	EPA 8015M	

Date Sampled: **01/11/19 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: o-Terphenyl</i>		94.3 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/14/19 06:20

SS29@5.5'
1901157-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/11/19 13:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	4.1	0.20	mg/kg	100	1901154	01/11/19	01/12/19	EPA 8260B	
Toluene	26	0.50	"	"	"	"	"	"	
Ethylbenzene	3.4	0.50	"	"	"	"	"	"	
Xylenes (total)	49	1.0	"	"	"	"	"	"	
Naphthalene	2.7	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	840	500	"	10	"	"	"	"	

Date Sampled: **01/11/19 13:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: 1,2-Dichloroethane-d4</i>		116 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		100 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		109 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/11/19 13:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	140	50	mg/kg	1	1901155	"	01/11/19	EPA 8015M	

Date Sampled: **01/11/19 13:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: o-Terphenyl</i>		94.5 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/14/19 06:20

SS30@5.5'
1901157-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/11/19 13:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	5.9	0.20	mg/kg	100	1901154	01/11/19	01/12/19	EPA 8260B	
Toluene	34	0.50	"	"	"	"	"	"	
Ethylbenzene	5.7	0.50	"	"	"	"	"	"	
Xylenes (total)	86	1.0	"	"	"	"	"	"	
Naphthalene	2.8	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1400	500	"	10	"	"	"	"	

Date Sampled: **01/11/19 13:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: 1,2-Dichloroethane-d4</i>		115 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.0 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		115 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/11/19 13:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	760	50	mg/kg	1	1901155	"	01/11/19	EPA 8015M	

Date Sampled: **01/11/19 13:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: o-Terphenyl</i>		89.6 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/14/19 06:20

SS31@5.5'
1901157-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/11/19 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	2.0	0.20	mg/kg	100	1901154	01/11/19	01/12/19	EPA 8260B	
Toluene	8.6	0.50	"	"	"	"	"	"	
Ethylbenzene	1.7	0.50	"	"	"	"	"	"	
Xylenes (total)	24	1.0	"	"	"	"	"	"	
Naphthalene	2.5	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	440	50	"	1	"	"	"	"	

Date Sampled: **01/11/19 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: 1,2-Dichloroethane-d4</i>		108 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		97.0 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		106 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/11/19 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	160	50	mg/kg	1	1901155	"	01/11/19	EPA 8015M	

Date Sampled: **01/11/19 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: o-Terphenyl</i>		93.8 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/14/19 06:20

SS32@5.5'
1901157-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/11/19 13:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1901154	01/11/19	01/12/19	EPA 8260B	
Toluene	0.0081	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0077	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.073	0.010	"	"	"	"	"	"	
Naphthalene	0.021	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/11/19 13:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.4 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/11/19 13:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1901155	"	01/11/19	EPA 8015M	

Date Sampled: **01/11/19 13:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		90.3 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/14/19 06:20

SS33@5.5'
1901157-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/11/19 13:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	5.1	0.20	mg/kg	100	1901154	01/11/19	01/12/19	EPA 8260B	
Toluene	42	0.50	"	"	"	"	"	"	
Ethylbenzene	4.7	0.50	"	"	"	"	"	"	
Xylenes (total)	72	1.0	"	"	"	"	"	"	
Naphthalene	2.5	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1200	500	"	10	"	"	"	"	

Date Sampled: **01/11/19 13:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: 1,2-Dichloroethane-d4</i>		107 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		100 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		113 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/11/19 13:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	290	50	mg/kg	1	1901155	"	01/11/19	EPA 8015M	

Date Sampled: **01/11/19 13:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: o-Terphenyl</i>		96.4 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/14/19 06:20

SS34@5.5'
1901157-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/11/19 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	14	0.20	mg/kg	100	1901154	01/11/19	01/12/19	EPA 8260B	
Toluene	31	0.50	"	"	"	"	"	"	
Ethylbenzene	9.0	0.50	"	"	"	"	"	"	
Xylenes (total)	120	1.0	"	"	"	"	"	"	
Naphthalene	4.3	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2100	500	"	10	"	"	"	"	

Date Sampled: **01/11/19 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: 1,2-Dichloroethane-d4</i>		116 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		100 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		126 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/11/19 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	580	50	mg/kg	1	1901155	"	01/12/19	EPA 8015M	

Date Sampled: **01/11/19 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: o-Terphenyl</i>		94.0 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/14/19 06:20

SS35@5.5'
1901157-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/11/19 14:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	7.3	0.20	mg/kg	100	1901154	01/11/19	01/12/19	EPA 8260B	
Toluene	33	0.50	"	"	"	"	"	"	
Ethylbenzene	3.1	0.50	"	"	"	"	"	"	
Xylenes (total)	45	1.0	"	"	"	"	"	"	
Naphthalene	2.5	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	810	500	"	10	"	"	"	"	

Date Sampled: **01/11/19 14:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		99.8 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		106 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/11/19 14:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	120	50	mg/kg	1	1901155	"	01/12/19	EPA 8015M	

Date Sampled: **01/11/19 14:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: o-Terphenyl</i>		90.3 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/14/19 06:20

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1901154 - EPA 5030 Soil MS

Blank (1901154-BLK1)

Prepared: 01/11/19 Analyzed: 01/12/19

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0412		"	0.0400		103	23-173			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0379		"	0.0400		94.7	21-167			

LCS (1901154-BS1)

Prepared: 01/11/19 Analyzed: 01/12/19

Benzene	0.119	0.0020	mg/kg	0.100		119	70-130			
Toluene	0.110	0.0050	"	0.100		110	70-130			
Ethylbenzene	0.127	0.0050	"	0.100		127	70-130			
m,p-Xylene	0.174	0.010	"	0.200		87.1	70-130			
o-Xylene	0.120	0.0050	"	0.100		120	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0443		"	0.0400		111	23-173			
Surrogate: Toluene-d8	0.0420		"	0.0400		105	20-170			
Surrogate: 4-Bromofluorobenzene	0.0377		"	0.0400		94.2	21-167			

Matrix Spike (1901154-MS1)

Source: 1901157-05

Prepared: 01/11/19 Analyzed: 01/12/19

Benzene	0.121	0.0020	mg/kg	0.100	ND	121	70-130			
Toluene	0.138	0.0050	"	0.100	0.00807	130	70-130			
Ethylbenzene	0.134	0.0050	"	0.100	0.00771	126	70-130			
m,p-Xylene	0.300	0.010	"	0.200	0.0531	123	70-130			
o-Xylene	0.138	0.0050	"	0.100	0.0195	118	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0446		"	0.0400		111	23-173			
Surrogate: Toluene-d8	0.0424		"	0.0400		106	20-170			
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.8	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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Brunns

Reported:

01/14/19 06:20

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 1901154 - EPA 5030 Soil MS

Matrix Spike Dup (1901154-MSD1)		Source: 1901157-05			Prepared: 01/11/19 Analyzed: 01/12/19						
Benzene	0.115	0.0020	mg/kg	0.100	ND	115	70-130	4.87	30		
Toluene	0.136	0.0050	"	0.100	0.00807	128	70-130	1.90	30		
Ethylbenzene	0.133	0.0050	"	0.100	0.00771	125	70-130	0.742	30		
m,p-Xylene	0.304	0.010	"	0.200	0.0531	125	70-130	1.43	30		
o-Xylene	0.133	0.0050	"	0.100	0.0195	114	70-130	3.21	30		
Surrogate: 1,2-Dichloroethane-d4	0.0435		"	0.0400		109	23-173				
Surrogate: Toluene-d8	0.0405		"	0.0400		101	20-170				
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.5	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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/14/19 06:20

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1901155 - EPA 3550A

Blank (1901155-BLK1)

Prepared & Analyzed: 01/11/19

C10-C28 (DRO) ND 50 mg/kg

LCS (1901155-BS1)

Prepared & Analyzed: 01/11/19

C10-C28 (DRO) 523 50 mg/kg 500 105 70-130

Matrix Spike (1901155-MS1)

Source: 1901157-05

Prepared & Analyzed: 01/11/19

C10-C28 (DRO) 629 50 mg/kg 500 14.5 123 70-130

Matrix Spike Dup (1901155-MSD1)

Source: 1901157-05

Prepared & Analyzed: 01/11/19

C10-C28 (DRO) 617 50 mg/kg 500 14.5 121 70-130 1.85 20

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/14/19 06:20

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 16, 2019

Brandon Bruns

Tasman Geosciences

6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - Thompson #3

Enclosed are the results of analyses for samples received by Summit Scientific on 01/15/19 17:58. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/16/19 06:14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS36@5'	1901181-01	Soil	01/15/19 11:05	01/15/19 17:58
SS37@5'	1901181-02	Soil	01/15/19 11:08	01/15/19 17:58
SS38@5'	1901181-03	Soil	01/15/19 11:12	01/15/19 17:58
SS39@5'	1901181-04	Soil	01/15/19 11:15	01/15/19 17:58
SS40@5'	1901181-05	Soil	01/15/19 11:20	01/15/19 17:58
SS41@5'	1901181-06	Soil	01/15/19 14:45	01/15/19 17:58
SS42@5'	1901181-07	Soil	01/15/19 14:50	01/15/19 17:58

Summit Scientific

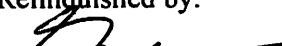

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

S_2

741 Corporate Circle, Suite J ♦ Golden, Colorado 80401

303-277-9310 ♦ 303-374-5933

Project Number: —

Relinquished by: 	Date/Time: 1620 1/15/19	Received by: TASMAN BOX	Date/Time: 1620 1.15.19	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: Tasman BOX	Date/Time: 1759 1/15/19	Received by: 	Date/Time: 1.15.19 1759	Sample Integrity:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 3.4 Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Sample Receipt Checklist

S2 Work Order: 1901181

Client: Noble / Tasman Client Project ID: Thompson #3

Shipped Via: P.U. Airbill #: _____
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Matrix (check all that apply): Air ☒ Soil/Solid Water Other: _____
(Describe)

Temp (°C)	<u>3.4</u>
-----------	------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

WP
Custodian Printed Name or Initials

[Signature]
Signature or Initials of Custodian

1.15.19 1845
Date/Time



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/16/19 06:14

SS36@5'
1901181-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/15/19 11:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1901186	01/15/19	01/15/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/15/19 11:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/15/19 11:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1901187	01/15/19	01/16/19	EPA 8015M	

Date Sampled: **01/15/19 11:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		98.9 %	30-150		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/16/19 06:14

SS37@5'
1901181-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/15/19 11:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1901186	01/15/19	01/15/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/15/19 11:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/15/19 11:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1901187	01/15/19	01/16/19	EPA 8015M	

Date Sampled: **01/15/19 11:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		92.0 %	30-150		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/16/19 06:14

SS38@5'
1901181-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/15/19 11:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1901186	01/15/19	01/15/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/15/19 11:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		154 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		92.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		232 %	21-167		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/15/19 11:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1901187	01/15/19	01/16/19	EPA 8015M	

Date Sampled: **01/15/19 11:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		96.2 %	30-150		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Bruns

Reported:
01/16/19 06:14

SS39@5'
1901181-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/15/19 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	3.5	0.020	mg/kg	10	1901186	01/15/19	01/16/19	EPA 8260B	
Toluene	10	0.050	"	"	"	"	"	"	
Ethylbenzene	1.7	0.050	"	"	"	"	"	"	
Xylenes (total)	15	0.10	"	"	"	"	"	"	
Naphthalene	0.19	0.010	"	1	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	10	"	"	"	"	

Date Sampled: **01/15/19 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		150 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		92.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		166 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/15/19 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	89	50	mg/kg	1	1901187	01/15/19	01/15/19	EPA 8015M	

Date Sampled: **01/15/19 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.7 %	30-150		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/16/19 06:14

SS40@5'
1901181-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/15/19 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	3.6	0.020	mg/kg	10	1901186	01/15/19	01/16/19	EPA 8260B	
Toluene	7.1	0.050	"	"	"	"	"	"	
Ethylbenzene	2.9	0.050	"	"	"	"	"	"	
Xylenes (total)	18	0.10	"	"	"	"	"	"	
Naphthalene	0.19	0.010	"	1	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	10	"	"	"	"	

Date Sampled: **01/15/19 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		75.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		93.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		202 %	21-167		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/15/19 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	89	50	mg/kg	1	1901187	01/15/19	01/15/19	EPA 8015M	

Date Sampled: **01/15/19 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		97.8 %	30-150		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/16/19 06:14

SS41@5'
1901181-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/15/19 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.86	0.020	mg/kg	10	1901186	01/15/19	01/16/19	EPA 8260B	
Toluene	1.4	0.050	"	"	"	"	"	"	
Ethylbenzene	0.75	0.050	"	"	"	"	"	"	
Xylenes (total)	7.4	0.10	"	"	"	"	"	"	
Naphthalene	0.093	0.010	"	1	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	10	"	"	"	"	

Date Sampled: **01/15/19 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		121 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		91.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		151 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/15/19 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1901187	01/15/19	01/15/19	EPA 8015M	

Date Sampled: **01/15/19 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		99.0 %	30-150		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Bruns

Reported:
01/16/19 06:14

SS42@5'
1901181-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/15/19 14:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	0.090	0.0020	mg/kg	1	1901186	01/15/19	01/15/19	EPA 8260B	
Toluene	0.23	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.15	0.0050	"	"	"	"	"	"	
Xylenes (total)	1.4	0.010	"	"	"	"	"	"	
Naphthalene	0.021	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/15/19 14:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		156 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		192 %	21-167		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/15/19 14:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1901187	01/15/19	01/15/19	EPA 8015M	

Date Sampled: **01/15/19 14:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		95.7 %	30-150		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/16/19 06:14

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1901186 - EPA 5030 Soil MS

Blank (1901186-BLK1)

Prepared: 01/15/19 Analyzed: 01/16/19

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0343		"	0.0400		85.6	23-173			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0375		"	0.0400		93.7	21-167			

LCS (1901186-BS1)

Prepared: 01/15/19 Analyzed: 01/16/19

Benzene	0.0947	0.0020	mg/kg	0.100		94.7	70-130			
Toluene	0.0906	0.0050	"	0.100		90.6	70-130			
Ethylbenzene	0.0999	0.0050	"	0.100		99.9	70-130			
m,p-Xylene	0.185	0.010	"	0.200		92.3	70-130			
o-Xylene	0.0990	0.0050	"	0.100		99.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0364		"	0.0400		91.1	23-173			
Surrogate: Toluene-d8	0.0384		"	0.0400		95.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0418		"	0.0400		104	21-167			

Matrix Spike (1901186-MS1)

Source: 1901181-01

Prepared: 01/15/19 Analyzed: 01/16/19

Benzene	0.0913	0.0020	mg/kg	0.100	ND	91.3	70-130			
Toluene	0.0906	0.0050	"	0.100	ND	90.6	70-130			
Ethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130			
m,p-Xylene	0.202	0.010	"	0.200	ND	101	70-130			
o-Xylene	0.101	0.0050	"	0.100	ND	101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0352		"	0.0400		88.1	23-173			
Surrogate: Toluene-d8	0.0390		"	0.0400		97.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0414		"	0.0400		104	21-167			

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Bruns

Reported:

01/16/19 06:14

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 1901186 - EPA 5030 Soil MS

Matrix Spike Dup (1901186-MSD1)	Source: 1901181-01			Prepared: 01/15/19 Analyzed: 01/16/19						
Benzene	0.0943	0.0020	mg/kg	0.100	ND	94.3	70-130	3.20	30	
Toluene	0.0934	0.0050	"	0.100	ND	93.4	70-130	3.13	30	
Ethylbenzene	0.100	0.0050	"	0.100	ND	100	70-130	3.88	30	
m,p-Xylene	0.188	0.010	"	0.200	ND	94.2	70-130	6.83	30	
o-Xylene	0.0964	0.0050	"	0.100	ND	96.4	70-130	4.95	30	
Surrogate: 1,2-Dichloroethane-d4	0.0353		"	0.0400		88.4	23-173			
Surrogate: Toluene-d8	0.0384		"	0.0400		96.1	20-170			
Surrogate: 4-Bromofluorobenzene	0.0401		"	0.0400		100	21-167			

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/16/19 06:14

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1901187 - EPA 3550A

Blank (1901187-BLK1)

Prepared & Analyzed: 01/15/19

C10-C28 (DRO) ND 50 mg/kg

LCS (1901187-BS1)

Prepared & Analyzed: 01/15/19

C10-C28 (DRO) 476 50 mg/kg 500 95.1 70-130

Matrix Spike (1901187-MS1)

Source: 1901181-01

Prepared & Analyzed: 01/15/19

C10-C28 (DRO) 462 50 mg/kg 500 17.5 88.9 70-130

Matrix Spike Dup (1901187-MSD1)

Source: 1901181-01

Prepared & Analyzed: 01/15/19

C10-C28 (DRO) 451 50 mg/kg 500 17.5 86.6 70-130 2.48 20

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/16/19 06:14

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.
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

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 17, 2019

Brandon Bruns

Tasman Geosciences

6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - Thompson #3

Enclosed are the results of analyses for samples received by Summit Scientific on 01/16/19 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/17/19 06:15

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS43@5.5'	1901211-01	Soil	01/16/19 14:45	01/16/19 18:00
SS44@5.5'	1901211-02	Soil	01/16/19 14:47	01/16/19 18:00
SS45@5.5'	1901211-03	Soil	01/16/19 14:49	01/16/19 18:00
SS46@5.5'	1901211-04	Soil	01/16/19 14:51	01/16/19 18:00
SS47@5.5'	1901211-05	Soil	01/16/19 14:53	01/16/19 18:00
SS48@5.5'	1901211-06	Soil	01/16/19 14:55	01/16/19 18:00

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.

Summit Scientific

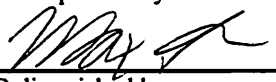

1901211

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

Page I of 4

Client: Noble/Tasman
Address: -
City/State/Zip: -
Phone: 979-255-4235 Fax: -
Sampler Name: Max Garza

Project Manager: Brandon Bruns, Invoice: Jacob Evans
E-Mail: Bbruns@tasman-geo.com
Project Name: Thompson #3
Project Number: N/A

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:								Special Instructions		
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR							
SS43@5.5'	1/16/19	1445	4			X			X					X	X							
SS44@5.5'		1447																				
SS45@5.5'		1449																				
SS46@5.5'		1451																				
SS47@5.5'		1453																				
SS48@5.5'		1455																				
<div>Relinquished by:  Date/Time: 1700 1/16/19</div> <div>Received by: Lock Box Date/Time: 1700 1/16/19</div> <div>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"/></div> <div>Notes:</div>																						
<div>Relinquished by: TASMAN BOO Date/Time: 1-16-19 1800</div> <div>Received by:  Date/Time: 1-16-19 1800</div> <div>Sample Integrity: Temperature Upon Receipt: 43 Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></div>																						
<div>Relinquished by: Date/Time:</div> <div>Received in Lab by: Date/Time:</div>																						

Sample Receipt Checklist

S2 Work Order: 1901211

Client: Noble/Tasman Client Project ID: Thompson #3

Shipped Via: P.V. Airbill #: _____
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Matrix (check all that apply): Air Soil/Solid Water Other: _____
(Describe)

Temp (°C)	<u>4.3</u>
-----------	------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

WP
Custodian Printed Name or Initials

[Signature]
Signature or Initials of Custodian

1.16.19 1835
Date/Time



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/17/19 06:15

SS43@5.5'
1901211-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/16/19 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.049	0.0020	mg/kg	1	1901203	01/16/19	01/16/19	EPA 8260B	
Toluene	0.0093	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.13	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/16/19 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.6 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/16/19 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1901204	01/16/19	01/16/19	EPA 8015M	

Date Sampled: **01/16/19 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		101 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Bruns

Reported:
01/17/19 06:15

SS44@5.5'
1901211-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/16/19 14:47**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1901203	01/16/19	01/16/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/16/19 14:47**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/16/19 14:47**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1901204	01/16/19	01/16/19	EPA 8015M	

Date Sampled: **01/16/19 14:47**

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

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Bruns

Reported:

01/17/19 06:15

SS45@5.5'
1901211-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/16/19 14:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1901203	01/16/19	01/16/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/16/19 14:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/16/19 14:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1901204	01/16/19	01/16/19	EPA 8015M	

Date Sampled: **01/16/19 14:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		105 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/17/19 06:15

SS46@5.5'
1901211-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/16/19 14:51**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1901203	01/16/19	01/16/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/16/19 14:51**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/16/19 14:51**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1901204	01/16/19	01/16/19	EPA 8015M	

Date Sampled: **01/16/19 14:51**

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

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/17/19 06:15

SS47@5.5'
1901211-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/16/19 14:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1901203	01/16/19	01/16/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/16/19 14:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/16/19 14:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1901204	01/16/19	01/16/19	EPA 8015M	

Date Sampled: **01/16/19 14:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		96.1 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/17/19 06:15

SS48@5.5'
1901211-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/16/19 14:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	16	0.20	mg/kg	100	1901203	01/16/19	01/16/19	EPA 8260B	
Toluene	120	0.50	"	"	"	"	"	"	E
Ethylbenzene	16	0.50	"	"	"	"	"	"	
Xylenes (total)	210	1.0	"	"	"	"	"	"	
Naphthalene	1.9	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2700	50	"	"	"	"	"	"	

Date Sampled: **01/16/19 14:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: 1,2-Dichloroethane-d4</i>		150 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		101 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		140 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/16/19 14:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	520	50	mg/kg	1	1901204	01/16/19	01/16/19	EPA 8015M	

Date Sampled: **01/16/19 14:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: o-Terphenyl</i>		102 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/17/19 06:15

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1901203 - EPA 5030 Soil MS

Blank (1901203-BLK1)

Prepared: 01/16/19 Analyzed: 01/17/19

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0353		"	0.0400		88.2	23-173			
Surrogate: Toluene-d8	0.0396		"	0.0400		98.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		99.9	21-167			

LCS (1901203-BS1)

Prepared: 01/16/19 Analyzed: 01/17/19

Benzene	0.0989	0.0020	mg/kg	0.100		98.9	70-130			
Toluene	0.0986	0.0050	"	0.100		98.6	70-130			
Ethylbenzene	0.0956	0.0050	"	0.100		95.6	70-130			
m,p-Xylene	0.194	0.010	"	0.200		97.0	70-130			
o-Xylene	0.0968	0.0050	"	0.100		96.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0319		"	0.0400		79.7	23-173			
Surrogate: Toluene-d8	0.0386		"	0.0400		96.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0348		"	0.0400		87.0	21-167			

Matrix Spike (1901203-MS1)

Source: 1901206-01

Prepared: 01/16/19 Analyzed: 01/17/19

Benzene	0.102	0.0020	mg/kg	0.100	ND	102	70-130			
Toluene	0.101	0.0050	"	0.100	ND	101	70-130			
Ethylbenzene	0.132	0.0050	"	0.100	0.0452	87.0	70-130			
m,p-Xylene	0.204	0.010	"	0.200	ND	102	70-130			
o-Xylene	0.105	0.0050	"	0.100	ND	105	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0322		"	0.0400		80.5	23-173			
Surrogate: Toluene-d8	0.0382		"	0.0400		95.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.4	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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Bruns

Reported:

01/17/19 06:15

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 1901203 - EPA 5030 Soil MS

Matrix Spike Dup (1901203-MSD1)	Source: 1901206-01			Prepared: 01/16/19 Analyzed: 01/17/19						
Benzene	0.104	0.0020	mg/kg	0.100	ND	104	70-130	1.72	30	
Toluene	0.104	0.0050	"	0.100	ND	104	70-130	2.99	30	
Ethylbenzene	0.132	0.0050	"	0.100	0.0452	86.3	70-130	0.523	30	
m,p-Xylene	0.196	0.010	"	0.200	ND	97.9	70-130	4.13	30	
o-Xylene	0.102	0.0050	"	0.100	ND	102	70-130	2.41	30	
Surrogate: 1,2-Dichloroethane-d4	0.0315		"	0.0400		78.8	23-173			
Surrogate: Toluene-d8	0.0399		"	0.0400		99.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0373		"	0.0400		93.2	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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/17/19 06:15

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1901204 - EPA 3550A

Blank (1901204-BLK1)

Prepared & Analyzed: 01/16/19

C10-C28 (DRO) ND 50 mg/kg

LCS (1901204-BS1)

Prepared & Analyzed: 01/16/19

C10-C28 (DRO) 516 50 mg/kg 500 103 70-130

Matrix Spike (1901204-MS1)

Source: 1901206-01

Prepared & Analyzed: 01/16/19

C10-C28 (DRO) 3360 50 mg/kg 500 1710 328 70-130 QM-07

Matrix Spike Dup (1901204-MSD1)

Source: 1901206-01

Prepared & Analyzed: 01/16/19

C10-C28 (DRO) 3680 50 mg/kg 500 1710 394 70-130 9.31 20 QM-07

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/17/19 06:15

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
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

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 18, 2019

Brandon Bruns

Tasman Geosciences

6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - Thompson #3

Enclosed are the results of analyses for samples received by Summit Scientific on 01/17/19 17:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/18/19 06:21

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS49@5.5'	1901232-01	Soil	01/17/19 14:00	01/17/19 17:50
SS50@5.5'	1901232-02	Soil	01/17/19 14:02	01/17/19 17:50
SS51@5.5'	1901232-03	Soil	01/17/19 14:04	01/17/19 17:50
SS52@5.5'	1901232-04	Soil	01/17/19 14:06	01/17/19 17:50
SS53@5.5'	1901232-05	Soil	01/17/19 14:08	01/17/19 17:50
SS54@5.5'	1901232-06	Soil	01/17/19 14:10	01/17/19 17:50

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.

Summit Scientific



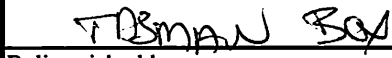

1901232

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: 979-255-4235 Fax: -
Sampler Name: Max Garza

Project Manager: Brandon Bruns, Invoice: Jacob Evans
E-Mail: Bbruns@tasman-geo.com
Project Name: Thompson #3^W
Project Number: N/A

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:								Special Instructions		
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR							
SS49 @ 5.5'	1/17/19	14 00	1			X			X					X	X							
SS50 @ 5.5'		14 02																				
SS51 @ 5.5'		14 04																				
SS52 @ 5.5'		14 06																				
SS53 @ 5.5'		14 08																				
SS54 @ 5.5'	↓	14 10	↓						↓					↓	↓							
Relinquished by: 				Date/Time: 1630 1/17/19		Received by: 				Date/Time: 1630 1/17/19		Turn Around Time (Check)								Notes:		
Relinquished by: 				Date/Time: 1.17.19 1750		Received by: 				Date/Time: 1.17.19 1750		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"/>										
Relinquished by:				Date/Time:		Received in Lab by:				Date/Time:		Sample Integrity: Temperature Upon Receipt: 4.6 Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>										

Sample Receipt Checklist

S2 Work Order 1901232

Client: Noble/Tasman Client Project ID: Thompson #3

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other P.U. Airbill #: _____

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)	<u>4.6</u>
-----------	------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

WP
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

1.17.19 1825
Date/Time



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/18/19 06:21

SS49@5.5'
1901232-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/17/19 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	34	0.20	mg/kg	100	1901211	01/17/19	01/18/19	EPA 8260B	
Toluene	86	0.50	"	"	"	"	"	"	
Ethylbenzene	13	0.50	"	"	"	"	"	"	
Xylenes (total)	160	1.0	"	"	"	"	"	"	
Naphthalene	1.2	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2600	50	"	"	"	"	"	"	

Date Sampled: **01/17/19 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		103 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		118 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/17/19 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	300	50	mg/kg	1	1901225	01/17/19	01/18/19	EPA 8015M	

Date Sampled: **01/17/19 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: o-Terphenyl</i>		99.7 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/18/19 06:21

SS50@5.5'
1901232-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/17/19 14:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	18	0.20	mg/kg	100	1901211	01/17/19	01/18/19	EPA 8260B	
Toluene	62	0.50	"	"	"	"	"	"	
Ethylbenzene	7.8	0.50	"	"	"	"	"	"	
Xylenes (total)	100	1.0	"	"	"	"	"	"	
Naphthalene	0.87	0.010	"	1	"	"	"	"	
Gasoline Range Hydrocarbons	1800	50	"	100	"	"	"	"	

Date Sampled: **01/17/19 14:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: 1,2-Dichloroethane-d4</i>		93.7 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		97.7 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		113 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/17/19 14:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	260	50	mg/kg	1	1901225	01/17/19	01/18/19	EPA 8015M	

Date Sampled: **01/17/19 14:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: o-Terphenyl</i>		102 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/18/19 06:21

SS51@5.5'
1901232-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/17/19 14:04**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	3.0	0.020	mg/kg	10	1901211	01/17/19	01/18/19	EPA 8260B	
Toluene	10	0.050	"	"	"	"	"	"	
Ethylbenzene	1.3	0.050	"	"	"	"	"	"	
Xylenes (total)	16	0.10	"	"	"	"	"	"	
Naphthalene	0.14	0.10	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	270	50	"	"	"	"	"	"	

Date Sampled: **01/17/19 14:04**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: 1,2-Dichloroethane-d4</i>		103 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		99.3 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		122 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/17/19 14:04**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	830	50	mg/kg	1	1901225	01/17/19	01/18/19	EPA 8015M	

Date Sampled: **01/17/19 14:04**

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

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/18/19 06:21

SS52@5.5'
1901232-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/17/19 14:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1901211	01/17/19	01/17/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/17/19 14:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		89.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/17/19 14:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1901225	01/17/19	01/18/19	EPA 8015M	

Date Sampled: **01/17/19 14:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		102 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/18/19 06:21

SS53@5.5'
1901232-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/17/19 14:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1901211	01/17/19	01/17/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/17/19 14:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		90.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.0 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/17/19 14:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1901225	01/17/19	01/18/19	EPA 8015M	

Date Sampled: **01/17/19 14:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		102 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/18/19 06:21

SS54@5.5'
1901232-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/17/19 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	0.35	0.0020		mg/kg	1	1901211	01/17/19	01/17/19	EPA 8260B	
Toluene	3.8	0.050		"	10	"	"	"	"	
Ethylbenzene	0.78	0.050		"	"	"	"	"	"	
Xylenes (total)	12	0.10		"	"	"	"	"	"	
Naphthalene	0.17	0.010		"	1	"	"	"	"	
Gasoline Range Hydrocarbons	190	50		"	10	"	"	"	"	

Date Sampled: **01/17/19 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<i>Surrogate: 1,2-Dichloroethane-d4</i>		108 %		23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		101 %		20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		118 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/17/19 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	150	50		mg/kg	1	1901225	01/17/19	01/18/19	EPA 8015M	

Date Sampled: **01/17/19 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<i>Surrogate: o-Terphenyl</i>		102 %		30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/18/19 06:21

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1901211 - EPA 5030 Soil MS

Blank (1901211-BLK1)

Prepared: 01/17/19 Analyzed: 01/18/19

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0337		"	0.0400		84.3	23-173			
Surrogate: Toluene-d8	0.0429		"	0.0400		107	20-170			
Surrogate: 4-Bromofluorobenzene	0.0408		"	0.0400		102	21-167			

LCS (1901211-BS1)

Prepared: 01/17/19 Analyzed: 01/18/19

Benzene	0.101	0.0020	mg/kg	0.100		101	70-130			
Toluene	0.105	0.0050	"	0.100		105	70-130			
Ethylbenzene	0.102	0.0050	"	0.100		102	70-130			
m,p-Xylene	0.215	0.010	"	0.200		107	70-130			
o-Xylene	0.102	0.0050	"	0.100		102	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0325		"	0.0400		81.2	23-173			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.1	20-170			
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0400		99.1	21-167			

Matrix Spike (1901211-MS1)

Source: 1901219-01

Prepared: 01/17/19 Analyzed: 01/18/19

Benzene	0.104	0.0020	mg/kg	0.100	ND	104	70-130			
Toluene	0.107	0.0050	"	0.100	0.00489	102	70-130			
Ethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130			
m,p-Xylene	0.198	0.010	"	0.200	0.0103	94.0	70-130			
o-Xylene	0.0970	0.0050	"	0.100	ND	97.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0329		"	0.0400		82.2	23-173			
Surrogate: Toluene-d8	0.0400		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0384		"	0.0400		95.9	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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/18/19 06:21

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 1901211 - EPA 5030 Soil MS

Matrix Spike Dup (1901211-MSD1)	Source: 1901219-01			Prepared: 01/17/19 Analyzed: 01/18/19						
Benzene	0.108	0.0020	mg/kg	0.100	ND	108	70-130	3.75	30	
Toluene	0.105	0.0050	"	0.100	0.00489	99.8	70-130	2.21	30	
Ethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130	2.60	30	
m,p-Xylene	0.209	0.010	"	0.200	0.0103	99.2	70-130	5.09	30	
o-Xylene	0.102	0.0050	"	0.100	ND	102	70-130	5.12	30	
Surrogate: 1,2-Dichloroethane-d4	0.0353		"	0.0400		88.2	23-173			
Surrogate: Toluene-d8	0.0417		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.4	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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/18/19 06:21

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1901225 - EPA 3550A

Blank (1901225-BLK1)

Prepared: 01/17/19 Analyzed: 01/18/19

C10-C28 (DRO) ND 50 mg/kg

LCS (1901225-BS1)

Prepared: 01/17/19 Analyzed: 01/18/19

C10-C28 (DRO) 482 50 mg/kg 500 96.3 70-130

Matrix Spike (1901225-MS1)

Source: 1901229-01

Prepared: 01/17/19 Analyzed: 01/18/19

C10-C28 (DRO) 534 50 mg/kg 500 10.8 105 70-130

Matrix Spike Dup (1901225-MSD1)

Source: 1901229-01

Prepared: 01/17/19 Analyzed: 01/18/19

C10-C28 (DRO) 506 50 mg/kg 500 10.8 99.1 70-130 5.28 20

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/18/19 06:21

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 22, 2019

Brandon Bruns

Tasman Geosciences

6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - Thompson #3

Enclosed are the results of analyses for samples received by Summit Scientific on 01/21/19 18:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/22/19 06:21

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS55@5.5'	1901254-01	Soil	01/21/19 10:10	01/21/19 18:50
SS56@5.5'	1901254-02	Soil	01/21/19 10:12	01/21/19 18:50
SS57@5.5'	1901254-03	Soil	01/21/19 10:14	01/21/19 18:50
SS58@5.5'	1901254-04	Soil	01/21/19 10:16	01/21/19 18:50
SS59@5.5'	1901254-05	Soil	01/21/19 10:18	01/21/19 18:50

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.

Summit Scientific

S₂

1901254

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: Noble / Tasman Project Manager: Brandon Bruns, Invoice: Jacob Evans
Address: 6899 Pecos Street E-Mail: Bbruns@tasman-geo.com
City/State/Zip: Denver / CO/ 80221
Phone: 979-255-4235 Project Name: Thompson #3
Sampler Name: Max Garza Project Number: N/A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR	
1	SS55 @ 5.5'	1/21/19	10 10	2			X			X				X	X		
2	SS56 @ 5.5'		10 12	1													
3	SS57 @ 5.5'		10 14														
4	SS58 @ 5.5'		10 16														
5	SS59 @ 5.5'		10 18														
6																	
7																	
8																	
9																	
10																	

Relinquished by: <u>Max &</u>	Date/Time: <u>16 30</u> <u>1/21/19</u>	Received by: <u>Tasman's Lock Box</u>	Date/Time: <u>16 30</u> <u>1/21/19</u>	Turn Around Time (Check) Same Day <u>X</u> 72 hours <u>—</u> 24 hours <u>—</u> Standard <u>—</u> 48 hours <u>—</u>	Notes:
Relinquished by: <u>Tasman's Lock Box</u>	Date/Time: <u>1-21-19</u> <u>1820</u>	Received by: <u>[Signature]</u>	Date/Time: <u>1-21-19</u> <u>1820</u>	Sample Integrity: Temperature Upon Receipt: <u>4.2</u> Samples Intact: <u>(Yes)</u> No	
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Sample Receipt Checklist

S2 Work Order 1901254

Client: Noble/Tasman Client Project ID: Thompson #3

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other P.U. Airbill #: _____

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)	<u>4.2</u>
-----------	------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

CP
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

1.21.18 1825
Date/Time



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/22/19 06:21

SS55@5.5'
1901254-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/21/19 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1901249	01/21/19	01/21/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/21/19 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		122 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/21/19 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1901248	01/21/19	01/21/19	EPA 8015M	

Date Sampled: **01/21/19 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		60.2 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/22/19 06:21

SS56@5.5'
1901254-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/21/19 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0067	0.0020	mg/kg	1	1901249	01/21/19	01/21/19	EPA 8260B	
Toluene	0.014	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/21/19 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		117 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/21/19 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1901248	01/21/19	01/21/19	EPA 8015M	

Date Sampled: **01/21/19 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		101 %	30-150		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/22/19 06:21

SS57@5.5'
1901254-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/21/19 10:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.56	0.0020	mg/kg	1	1901249	01/21/19	01/21/19	EPA 8260B	
Toluene	0.72	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.23	0.0050	"	"	"	"	"	"	
Xylenes (total)	2.7	0.010	"	"	"	"	"	"	
Naphthalene	0.031	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/21/19 10:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		130 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		93.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		118 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/21/19 10:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1901248	01/21/19	01/21/19	EPA 8015M	

Date Sampled: **01/21/19 10:14**

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

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/22/19 06:21

SS58@5.5'
1901254-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/21/19 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	19	0.20	mg/kg	100	1901249	01/21/19	01/22/19	EPA 8260B	
Toluene	150	0.50	"	"	"	"	"	"	E
Ethylbenzene	32	0.50	"	"	"	"	"	"	
Xylenes (total)	380	1.0	"	"	"	"	"	"	E
Naphthalene	4.8	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	6900	50	"	"	"	"	"	"	

Date Sampled: **01/21/19 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		149 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		179 %	21-167		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/21/19 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	570	50	mg/kg	1	1901248	01/21/19	01/21/19	EPA 8015M	

Date Sampled: **01/21/19 10:16**

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

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/22/19 06:21

SS59@5.5'
1901254-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 01/21/19 10:18

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	12	0.20	mg/kg	100	1901249	01/21/19	01/22/19	EPA 8260B	
Toluene	75	0.50	"	"	"	"	"	"	
Ethylbenzene	8.1	0.50	"	"	"	"	"	"	
Xylenes (total)	100	1.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2500	50	"	"	"	"	"	"	

Date Sampled: 01/21/19 10:18

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		118 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 01/21/19 10:18

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	56	50	mg/kg	1	1901248	01/21/19	01/21/19	EPA 8015M	

Date Sampled: 01/21/19 10:18

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		102 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/22/19 06:21

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1901249 - EPA 5030 Soil MS

Blank (1901249-BLK1)

Prepared & Analyzed: 01/21/19

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0430		"	0.0400		108	23-173			
Surrogate: Toluene-d8	0.0420		"	0.0400		105	20-170			
Surrogate: 4-Bromofluorobenzene	0.0409		"	0.0400		102	21-167			

LCS (1901249-BS1)

Prepared & Analyzed: 01/21/19

Benzene	0.107	0.0020	mg/kg	0.100		107	70-130			
Toluene	0.119	0.0050	"	0.100		119	70-130			
Ethylbenzene	0.118	0.0050	"	0.100		118	70-130			
m,p-Xylene	0.199	0.010	"	0.200		99.6	70-130			
o-Xylene	0.111	0.0050	"	0.100		111	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0385		"	0.0400		96.2	23-173			
Surrogate: Toluene-d8	0.0410		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	21-167			

Matrix Spike (1901249-MS1)

Source: 1901254-01

Prepared & Analyzed: 01/21/19

Benzene	0.115	0.0020	mg/kg	0.100	ND	115	70-130			
Toluene	0.129	0.0050	"	0.100	0.00462	125	70-130			
Ethylbenzene	0.125	0.0050	"	0.100	ND	125	70-130			
m,p-Xylene	0.211	0.010	"	0.200	0.00300	104	70-130			
o-Xylene	0.120	0.0050	"	0.100	ND	120	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0428		"	0.0400		107	23-173			
Surrogate: Toluene-d8	0.0414		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0400		99.0	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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Brun

Reported:

01/22/19 06:21

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 1901249 - EPA 5030 Soil MS

Matrix Spike Dup (1901249-MSD1)	Source: 1901254-01			Prepared & Analyzed: 01/21/19						
Benzene	0.116	0.0020	mg/kg	0.100	ND	116	70-130	1.04	30	
Toluene	0.132	0.0050	"	0.100	0.00462	127	70-130	2.16	30	
Ethylbenzene	0.125	0.0050	"	0.100	ND	125	70-130	0.0963	30	
m,p-Xylene	0.214	0.010	"	0.200	0.00300	106	70-130	1.75	30	
o-Xylene	0.122	0.0050	"	0.100	ND	122	70-130	1.82	30	
Surrogate: 1,2-Dichloroethane-d4	0.0454		"	0.0400		114	23-173			
Surrogate: Toluene-d8	0.0422		"	0.0400		106	20-170			
Surrogate: 4-Bromofluorobenzene	0.0413		"	0.0400		103	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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/22/19 06:21

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1901248 - EPA 3550A

Blank (1901248-BLK1)

Prepared: 01/21/19 Analyzed: 01/22/19

C10-C28 (DRO) ND 50 mg/kg

LCS (1901248-BS1)

Prepared: 01/21/19 Analyzed: 01/22/19

C10-C28 (DRO) 494 50 mg/kg 500 98.8 70-130

Matrix Spike (1901248-MS1)

Source: 1901254-01

Prepared: 01/21/19 Analyzed: 01/22/19

C10-C28 (DRO) 565 50 mg/kg 500 21.9 109 70-130

Matrix Spike Dup (1901248-MSD1)

Source: 1901254-01

Prepared: 01/21/19 Analyzed: 01/22/19

C10-C28 (DRO) 520 50 mg/kg 500 21.9 99.6 70-130 8.34 20

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/22/19 06:21

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

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 25, 2019

Brandon Bruns

Tasman Geosciences

6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - Thompson #3

Enclosed are the results of analyses for samples received by Summit Scientific on 01/23/19 18:31. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/25/19 06:48

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS60@5.5'	1901284-01	Soil	01/23/19 16:00	01/23/19 18:31
SS61@5.5'	1901284-02	Soil	01/23/19 16:05	01/23/19 18:31

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.

Summit Scientific

S₂



1901284

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: Noble / Tasman Project Manager: Brandon Bruns, Invoice: Jacob Evans
Address: 6899 Pecos Street E-Mail: Bbruns@tasman-geo.com
City/State/Zip: Denver / CO/ 80221
Phone: 979-255-4235 Project Name: Thompson #3
Sampler Name: Max Garza Project Number: N/A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested					Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR		
1	SS60 @ 5.5'	1/23/19	1600	1			X			X				X	X			
2	SS61 @ 5.5'	↓	1605	↓			X			X				X	X			
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Relinquished by: 	Date/Time: 1700 1/23/19	Received by: Tasman's Lock Box	Date/Time: 1700 1/23/19	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"/> Sample Integrity: Temperature Upon Receipt: 0.3 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 1.23.19 1750	Received by: 	Date/Time: 1.23.19 1750		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Sample Receipt Checklist

S2 Work Order 1901284

Client: Noble/Tasman Client Project ID: Thompson #3

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other P.U. Airbill #: _____

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)	0.3
-----------	-----

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

UP
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

1.25.19 1836
Date/Time



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/25/19 06:48

SS60@5.5'
1901284-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/23/19 16:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1901264	01/23/19	01/23/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/23/19 16:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.0 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/23/19 16:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	53	50	mg/kg	1	1901263	01/23/19	01/23/19	EPA 8015M	

Date Sampled: **01/23/19 16:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		115 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/25/19 06:48

SS61@5.5'
1901284-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/23/19 16:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1901264	01/23/19	01/23/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/23/19 16:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/23/19 16:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1901263	01/23/19	01/23/19	EPA 8015M	

Date Sampled: **01/23/19 16:05**

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

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/25/19 06:48

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1901264 - EPA 5030 Soil MS

Blank (1901264-BLK1)

Prepared: 01/23/19 Analyzed: 01/24/19

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0496		"	0.0400		124	23-173			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0438		"	0.0400		110	21-167			

LCS (1901264-BS1)

Prepared: 01/23/19 Analyzed: 01/24/19

Benzene	0.0925	0.0020	mg/kg	0.100		92.5	70-130			
Toluene	0.0941	0.0050	"	0.100		94.1	70-130			
Ethylbenzene	0.0847	0.0050	"	0.100		84.7	70-130			
m,p-Xylene	0.171	0.010	"	0.200		85.6	70-130			
o-Xylene	0.0854	0.0050	"	0.100		85.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0475		"	0.0400		119	23-173			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0401		"	0.0400		100	21-167			

Matrix Spike (1901264-MS1)

Source: 1901247-02

Prepared: 01/23/19 Analyzed: 01/24/19

Benzene	0.0586	0.0020	mg/kg	0.100	ND	58.6	70-130			QM-07
Toluene	0.0560	0.0050	"	0.100	ND	56.0	70-130			QM-07
Ethylbenzene	0.0533	0.0050	"	0.100	ND	53.3	70-130			QM-07
m,p-Xylene	0.109	0.010	"	0.200	ND	54.5	70-130			QM-07
o-Xylene	0.0640	0.0050	"	0.100	ND	64.0	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0496		"	0.0400		124	23-173			
Surrogate: Toluene-d8	0.0378		"	0.0400		94.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0554		"	0.0400		138	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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Bruns

Reported:

01/25/19 06:48

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 1901264 - EPA 5030 Soil MS

Matrix Spike Dup (1901264-MSD1)		Source: 1901247-02			Prepared: 01/23/19 Analyzed: 01/24/19					
Benzene	0.0730	0.0020	mg/kg	0.100	ND	73.0	70-130	21.8	30	
Toluene	0.0689	0.0050	"	0.100	ND	68.9	70-130	20.7	30	QM-07
Ethylbenzene	0.0628	0.0050	"	0.100	ND	62.8	70-130	16.4	30	QM-07
m,p-Xylene	0.142	0.010	"	0.200	ND	71.0	70-130	26.3	30	
o-Xylene	0.0739	0.0050	"	0.100	ND	73.9	70-130	14.4	30	
Surrogate: 1,2-Dichloroethane-d4	0.0469		"	0.0400		117	23-173			
Surrogate: Toluene-d8	0.0401		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0487		"	0.0400		122	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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/25/19 06:48

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1901263 - EPA 3550A

Blank (1901263-BLK1)

Prepared: 01/23/19 Analyzed: 01/24/19

C10-C28 (DRO) ND 50 mg/kg

LCS (1901263-BS1)

Prepared: 01/23/19 Analyzed: 01/24/19

C10-C28 (DRO) 541 50 mg/kg 500 108 70-130

Matrix Spike (1901263-MS1)

Source: 1901280-01

Prepared: 01/23/19 Analyzed: 01/24/19

C10-C28 (DRO) 523 50 mg/kg 500 21.3 100 70-130

Matrix Spike Dup (1901263-MSD1)

Source: 1901280-01

Prepared: 01/23/19 Analyzed: 01/24/19

C10-C28 (DRO) 536 50 mg/kg 500 21.3 103 70-130 2.42 20

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/25/19 06:48

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
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

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

February 05, 2019

Brandon Bruns

Tasman Geosciences

6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - Thompson #3

Enclosed are the results of analyses for samples received by Summit Scientific on 02/04/19 17:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to be 'P. Shrewsbury', written in a cursive style.

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
02/05/19 05:40

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS65@5.5'	1902015-01	Soil	02/04/19 14:30	02/04/19 17:50
SS66@5.5'	1902015-02	Soil	02/04/19 14:35	02/04/19 17:50
SS67@5.5'	1902015-03	Soil	02/04/19 14:40	02/04/19 17:50

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.

Summit Scientific

S₂

1902015

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 4

Client:	Noble / Tasman	Project Manager:	Brandon Bruns, Invoice:
Address:	6899 Pecos Street	E-Mail:	Bbruns@tasman-geo.com
City/State/Zip:	Denver / CO/ 80221		
Phone:	979-255-4235	Project Name:	Thompson #3
Sampler Name:	Max Garza	Project Number:	N/A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR				
1	SS65@5.5'	2/4/19	1430	1			X			X				X	X					
2	SS66@5.5'	↓	1435	↓			↓			↓				↓	↓					
3	SS67@5.5'	↓	1440	↓			↓			↓				↓	↓					
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes:
Max	1710 2/4/19	Tasman's Lock Box	1710 2/4/19	Same Day	X 72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	Standard	
Tasman's Lock Box	2.4.19 1800		2.4.19 1800	48 hours		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:		
				Temperature Upon Receipt: 3.1		
				Samples Intact: Yes No		

Sample Receipt Checklist

S2 Work Order 1902015

Client: Noble/Tasman Client Project ID: Thompson #3

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other P.U. Airbill #: _____

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)	3.1
-----------	-----

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

CP
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

2.4.19 1815
Date/Time



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
02/05/19 05:40

SS65@5.5'
1902015-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/04/19 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1902035	02/04/19	02/04/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **02/04/19 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		91.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.9 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/04/19 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1902034	02/04/19	02/04/19	EPA 8015M	

Date Sampled: **02/04/19 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		92.0 %	30-150		"	"	"	"	

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 St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
02/05/19 05:40

SS66@5.5'
1902015-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/04/19 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1902035	02/04/19	02/04/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **02/04/19 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		98.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.9 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/04/19 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1902034	02/04/19	02/04/19	EPA 8015M	

Date Sampled: **02/04/19 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		93.7 %	30-150		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
02/05/19 05:40

SS67@5.5'
1902015-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/04/19 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1902035	02/04/19	02/04/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **02/04/19 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		97.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/04/19 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1902034	02/04/19	02/04/19	EPA 8015M	

Date Sampled: **02/04/19 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		90.3 %	30-150		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
02/05/19 05:40

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1902035 - EPA 5030 Soil MS

Blank (1902035-BLK1)

Prepared & Analyzed: 02/04/19

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0366		"	0.0400		91.5	23-173			
Surrogate: Toluene-d8	0.0396		"	0.0400		99.1	20-170			
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.8	21-167			

LCS (1902035-BS1)

Prepared & Analyzed: 02/04/19

Benzene	0.0874	0.0020	mg/kg	0.100		87.4	70-130			
Toluene	0.0887	0.0050	"	0.100		88.7	70-130			
Ethylbenzene	0.0952	0.0050	"	0.100		95.2	70-130			
m,p-Xylene	0.183	0.010	"	0.200		91.7	70-130			
o-Xylene	0.0911	0.0050	"	0.100		91.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0373		"	0.0400		93.2	23-173			
Surrogate: Toluene-d8	0.0415		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400		101	21-167			

Matrix Spike (1902035-MS1)

Source: 1902007-01

Prepared & Analyzed: 02/04/19

Benzene	0.0842	0.0020	mg/kg	0.100	0.00318	81.0	70-130			
Toluene	0.680	0.0050	"	0.100	0.615	65.1	70-130			QM-07
Ethylbenzene	0.640	0.0050	"	0.100	0.451	189	70-130			QM-07
m,p-Xylene	4.16	0.010	"	0.200	2.38	888	70-130			E, QM-07
o-Xylene	2.85	0.0050	"	0.100	2.02	831	70-130			E, QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0376		"	0.0400		93.9	23-173			
Surrogate: Toluene-d8	0.0385		"	0.0400		96.3	20-170			
Surrogate: 4-Bromofluorobenzene	0.177		"	0.0400		443	21-167			S-02

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]

Project Manager: Brandon Brun

Reported:

02/05/19 05:40

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 1902035 - EPA 5030 Soil MS

Matrix Spike Dup (1902035-MSD1)	Source: 1902007-01			Prepared & Analyzed: 02/04/19						
Benzene	0.103	0.0020	mg/kg	0.100	0.00318	100	70-130	20.3	30	
Toluene	0.759	0.0050	"	0.100	0.615	144	70-130	11.0	30	QM-07
Ethylbenzene	0.617	0.0050	"	0.100	0.451	166	70-130	3.75	30	QM-07
m,p-Xylene	2.78	0.010	"	0.200	2.38	197	70-130	39.9	30	E, QM-07
o-Xylene	2.31	0.0050	"	0.100	2.02	297	70-130	20.7	30	E, QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0308		"	0.0400		77.0	23-173			
Surrogate: Toluene-d8	0.0410		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.147		"	0.0400		368	21-167			S-02

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
02/05/19 05:40

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1902034 - EPA 3550A

Blank (1902034-BLK1)

Prepared: 02/04/19 Analyzed: 02/05/19

C10-C28 (DRO) ND 50 mg/kg

LCS (1902034-BS1)

Prepared: 02/04/19 Analyzed: 02/05/19

C10-C28 (DRO) 496 50 mg/kg 500 99.1 70-130

Matrix Spike (1902034-MS1)

Source: 1902007-01

Prepared: 02/04/19 Analyzed: 02/05/19

C10-C28 (DRO) 1040 50 mg/kg 500 735 61.4 70-130 QM-07

Matrix Spike Dup (1902034-MSD1)

Source: 1902007-01

Prepared: 02/04/19 Analyzed: 02/05/19

C10-C28 (DRO) 1180 50 mg/kg 500 735 89.2 70-130 12.5 20 QM-07

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Thompson #3

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
02/05/19 05:40

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.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
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