

MOSIER 23-12F

HISTORIC RELEASE

API #: 05-123-16330

Remediation Project #: 10158

Spill/Release Point ID #: 448998

FIRST QUARTER 2018 Analytical Tables, Figures, and Laboratory Reports

January 30, 2018



Image: Google

PREPARED ON BEHALF OF

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



PREPARED BY

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



TABLE 1
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - MOSIER 23-12F OIL TANK RELEASE

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
BH01@1-2'	01/19/17	33	300	16	370	9,200	950	1.3
BH02@2-3'	01/19/17	0.55	0.34	0.057	0.56	<50	<50	<0.010
BH02@6-8'	01/19/17	0.76	4.4	1.8	14	99	150	0.34
BH03@2-3'	01/19/17	0.057	0.017	0.0053	0.054	<50	<50	<0.010
BH04@7-8'	01/19/17	5.2	36	3.2	58	2,000	130	<1.0
BH05@7-8'	01/19/17	1.2	19	2.2	42	1,700	120	0.16
BH06@7'	01/19/17	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH07@6-7'	01/19/17	0.015	0.013	<0.0050	0.024	<50	<50	<0.010
BH08@3-4'	01/19/17	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH09@6-7'	01/19/17	0.33	0.64	0.39	2.8	<50	<50	0.056
BH10@6'	01/19/17	3.4	46	7.0	120	6,600	110	0.64
BH11@5'	01/19/17	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH12@3-4'	01/19/17	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH19@5-6'	10/18/17	0.0074	0.017	<0.0050	0.023	<50	<50	<0.010
BH20@0-2'	10/18/17	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH21@5-7'	12/13/17	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH22@5-7'	12/13/17	0.014	0.029	<0.0050	0.032	<50	<50	<0.010
BH23@2-4'	12/13/17	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH24@0-2'	12/13/17	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH25@3-5'	12/13/17	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH26@2-4'	01/12/18	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.011
BH27@2-4'	01/12/18	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.012
BH28@0-2'	01/12/18	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.013
BH29@2-4'	01/12/18	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.014
BH30@2-4'	01/12/18	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.015

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

No soil samples were collected from borings BH13-BH18.

Soil standards referenced from COGCC Table 910-1

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

TABLE 2
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - MOSIER 23-12F OIL TANK RELEASE

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Standard		5	560	700	1,400
BH01	01/19/17	Not Sampled - 3.92' LNAPL Present			
BH01	02/21/17	Well Destroyed During Excavation			
BH02	01/19/17	Not Sampled - 3.31' LNAPL Present			
BH02	02/21/17	Well Destroyed During Excavation			
BH04	01/19/17	Not Sampled - 4.12' LNAPL Present			
BH04	02/21/17	Well Destroyed During Excavation			
BH07	01/19/17	Not Sampled - 0.65' LNAPL Present			
BH07	02/21/17	Well Destroyed During Excavation			
BH09	01/19/17	Not Sampled - 0.08' LNAPL Present			
BH09	02/21/17	Well Destroyed During Excavation			
BH13	10/20/17	<1.0	<1.0	<1.0	<2.0
BH13	01/19/18	40	<1.0	<1.0	<2.0
BH14	10/20/17	<1.0	<1.0	<1.0	<2.0
BH14	01/19/18	<1.0	<1.0	<1.0	<2.0
BH15	10/20/17	5,900	5,800	340	2,900
BH15	01/19/18	6,800	4,300	440	5,200
BH16	10/20/17	1,600	1.6	9.9	<2.0
BH16	01/19/18	1,400	<1.0	7.3	<2.0
BH17	10/20/17	150	<1.0	<1.0	<2.0
BH17	01/19/18	270	1.2	1.2	2.2
BH18	10/20/17	<1.0	<1.0	<1.0	640
BH18	01/19/18	990	15	67	1700
BH19	10/20/17	51	<1.0	<1.0	460
BH19	01/19/18	470	990	32	560
BH20	10/20/17	<1.0	<1.0	<1.0	<2.0
BH20	01/19/18	<1.0	<1.0	<1.0	<2.0
BH21	12/18/17	31	<1.0	<1.0	<2.0
BH21	01/19/18	4.0	<1.0	<1.0	<2.0
BH22	12/18/17	6800	15000	510	8000
BH22	01/19/18	5100	8400	320	4500
BH23	12/18/17	510	4.2	<1.0	3.7
BH23	01/19/18	310	<1.0	210	420
BH24	12/18/17	<1.0	<1.0	<1.0	<2.0
BH24	01/19/18	<1.0	<1.0	<1.0	<2.0
BH25	12/18/17	29	<1.0	<1.0	<2.0
BH25	01/19/18	240	<1.0	<1.0	<2.0
BH26	01/19/18	<1.0	<1.0	<1.0	<2.0
BH27	01/19/18	<1.0	<1.0	<1.0	<2.0
BH28	01/19/18	<1.0	<1.0	<1.0	<2.0
BH29	01/19/18	<1.0	<1.0	<1.0	<2.0
BH30	01/19/18	<1.0	<1.0	<1.0	<2.0

TABLE 2
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - MOSIER 23-12F OIL TANK RELEASE

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

Soil borings BH03, BH05, BH06, BH08, BH10-BH12 were not converted to monitoring wells.

TABLE 3
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - MOSIER 23-12F OIL TANK RELEASE

Monitoring Well ID	Date	Top of Casing Elevation (ft. AMSL)	Total Depth (ft. BTOC)	Depth to Water (ft. BTOC)	Depth to LNAPL (ft. BTOC)	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
BH01	01/19/17	NM	13.57	12.57	8.65	3.92	NM
BH01	02/21/17	Well Destroyed During Excavation					
BH02	01/19/17	NM	NM	14.47	11.16	3.31	NM
BH02	02/21/17	Well Destroyed During Excavation					
BH04	01/19/17	NM	NM	15.53	11.41	4.12	NM
BH04	02/21/17	Well Destroyed During Excavation					
BH07	01/19/17	NM	NM	11.36	10.71	0.65	NM
BH07	02/21/17	Well Destroyed During Excavation					
BH09	01/19/17	NM	NM	11.65	11.57	0.08	NM
BH09	02/21/17	Well Destroyed During Excavation					
BH13	10/20/17	4729.82	11.29	6.00	ND	ND	4723.82
BH13	01/19/18	4729.82	11.24	7.40	ND	ND	4722.42
BH14	10/20/17	4729.82	14.76	6.00	ND	ND	4723.82
BH14	01/19/18	4729.82	14.64	7.40	ND	ND	4722.42
BH15	10/20/17	4730.14	11.22	6.43	ND	ND	4723.71
BH15	01/19/18	4730.14	11.20	7.85	ND	ND	4722.29
BH16	10/20/17	4729.88	11.21	6.21	ND	ND	4723.67
BH16	01/19/18	4729.88	11.13	7.57	ND	ND	4722.31
BH17	10/20/17	4729.71	11.24	6.02	ND	ND	4723.69
BH17	01/19/18	4729.71	11.20	7.39	ND	ND	4722.32
BH18	10/20/17	4729.50	11.62	5.77	ND	ND	4723.73
BH18	01/19/18	4729.50	11.47	7.15	ND	ND	4722.35
BH19	10/20/17	4729.73	11.40	5.94	ND	ND	4723.79
BH19	01/19/18	4729.73	11.35	7.32	ND	ND	4722.41
BH20	10/20/17	4731.78	13.52	7.96	ND	ND	4723.82
BH20	01/19/18	4731.78	13.44	9.34	ND	ND	4722.44
BH21	12/18/17	4730.34	14.25	7.78	ND	ND	4722.56
BH21	01/19/18	4730.34	14.26	8.12	ND	ND	4722.22
BH22	12/18/17	4729.78	15.55	7.16	ND	ND	4722.62
BH22	01/19/18	4729.78	15.45	7.52	ND	ND	4722.26
BH23	12/18/17	4732.23	18.86	9.62	ND	ND	4722.61
BH23	01/19/18	4732.23	18.85	9.99	ND	ND	4722.24
BH24	12/18/17	4732.40	17.75	9.69	ND	ND	4722.71
BH24	01/19/18	4732.40	17.79	10.09	ND	ND	4722.31
BH25	12/18/17	4732.80	18.84	10.26	ND	ND	4722.54
BH25	01/19/18	4732.80	18.80	10.62	ND	ND	4722.18
BH26	01/19/18	4729.59	15.41	7.40	ND	ND	4722.19
BH27	01/19/18	4730.27	14.42	8.12	ND	ND	4722.15
BH28	01/19/18	4731.71	14.01	9.64	ND	ND	4722.07
BH29	01/19/18	4732.48	14.69	10.41	ND	ND	4722.07
BH30	01/19/18	4732.25	14.46	10.07	ND	ND	4722.18

TABLE 3
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - MOSIER 23-12F OIL TANK RELEASE

Monitoring Well ID	Date	Top of Casing Elevation (ft. AMSL)	Total Depth (ft. BTOC)	Depth to Water (ft. BTOC)	Depth to LNAPL (ft. BTOC)	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
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NOTES:

ft. = Feet

AMSL = Above mean sea level

BTOC = Below top of casing

LNAPL = Light non-aqueous phase liquid

ND = Not Detected

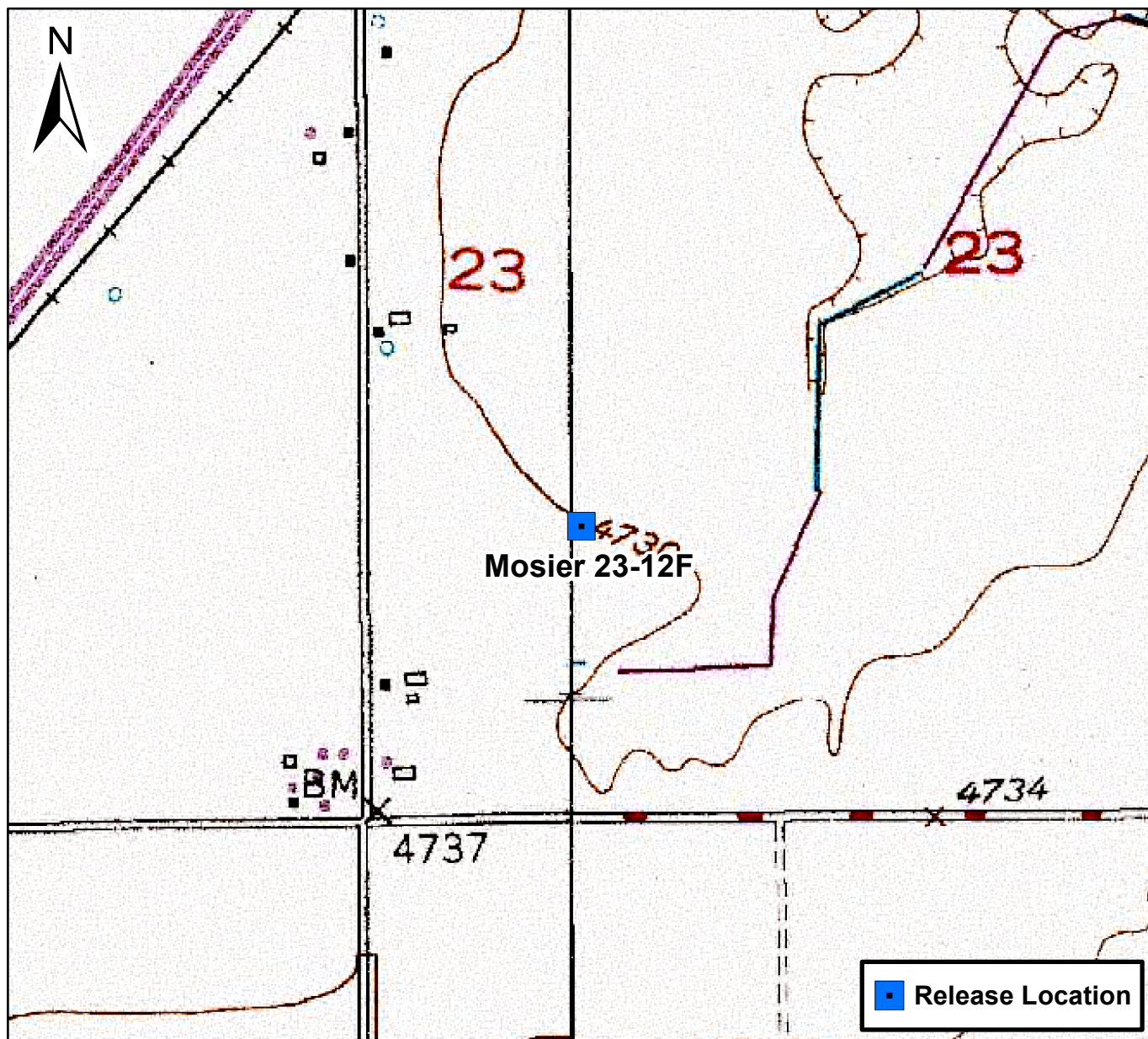
NM = Not Measured

Soil borings BH03, BH05, BH06, BH08, BH10-BH12 were not converted to monitoring wells.

* Groundwater elevation was corrected for product thickness (when present) using the following calculation:

Groundwater elevation = (TOC Elevation - Measured Depth to Water)+(LNAPL Thickness in Well x LNAPL Relative Density)

LNAPL relative density was estimated to be 0.75



0 750 1,500 Feet

Figure 1

Site Location Map
Mosier 23-12F Oil Tank Release
NWSW S23 T4N R66W Weld
County, Colorado





Legend

X

Release Location

[Dashed Line]

Excavation Extent (March 2017) -
(Collected via Trimble GPS)

[Blue Crosshair]

Monitoring Well Location -
(Collected via Trimble GPS)

[Grey Crosshair]

Monitoring Well – Destroyed

Notes

1) All locations are approximate unless
otherwise noted.

GPS – Global Positioning System

0 ft.20 ft.40 ft.

Image Source: Google Earth; 2016 Google
Projection: WGS 84 UTM Zone 13 North

N

DATE:	01/30/2018
DESIGNED BY:	DA
DRAWN BY:	GB



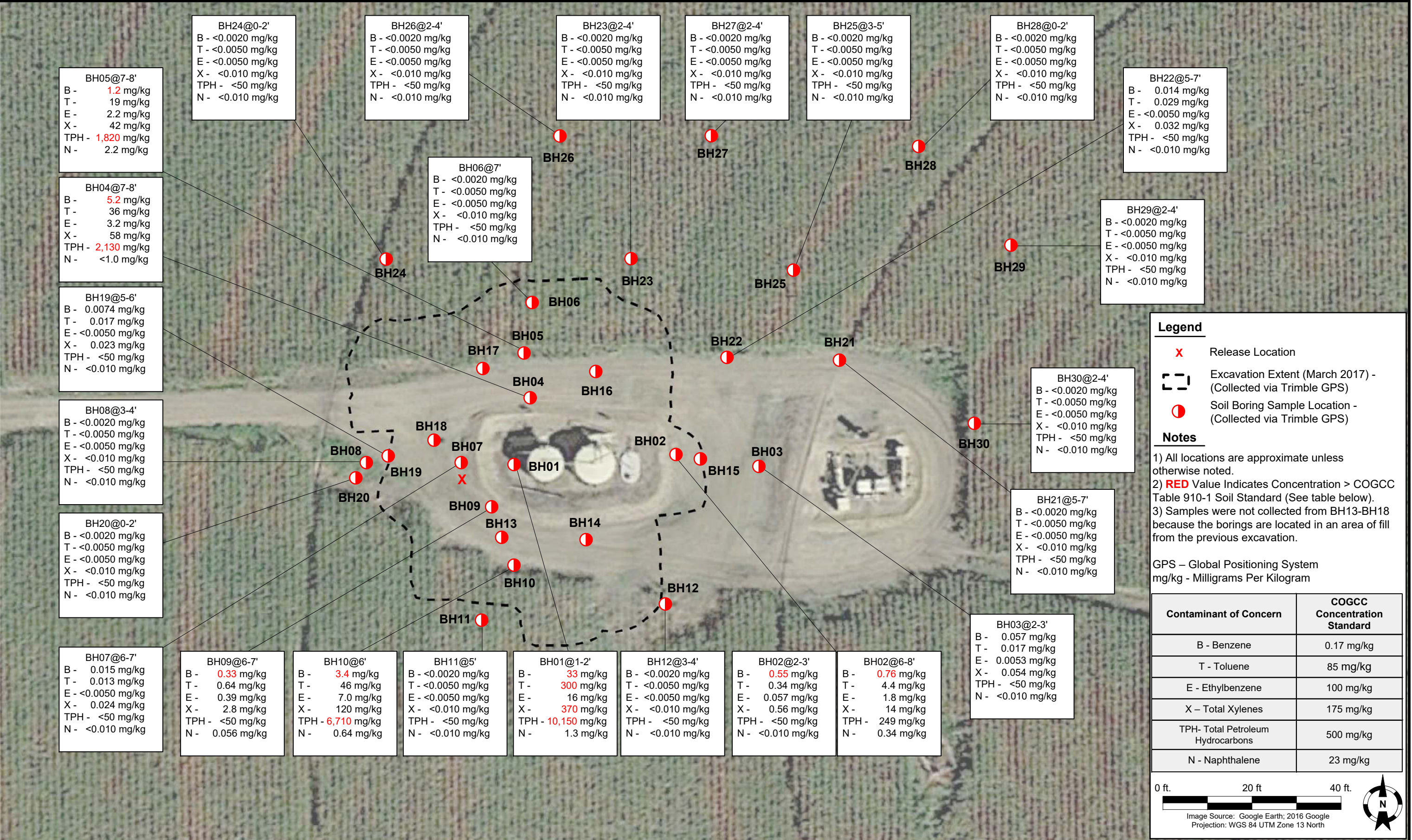
TASMAN
GEOSCIENCES

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

Noble Energy, Inc. – DJ Basin
Mosier 23-12F Oil Tank Release
NWSW, Section 23, Township 4 North, Range 66 West
Weld County, Colorado

Site Overview Map

FIGURE
2



DATE:	01/30/2018
DESIGNED BY:	DA
DRAWN BY:	GB



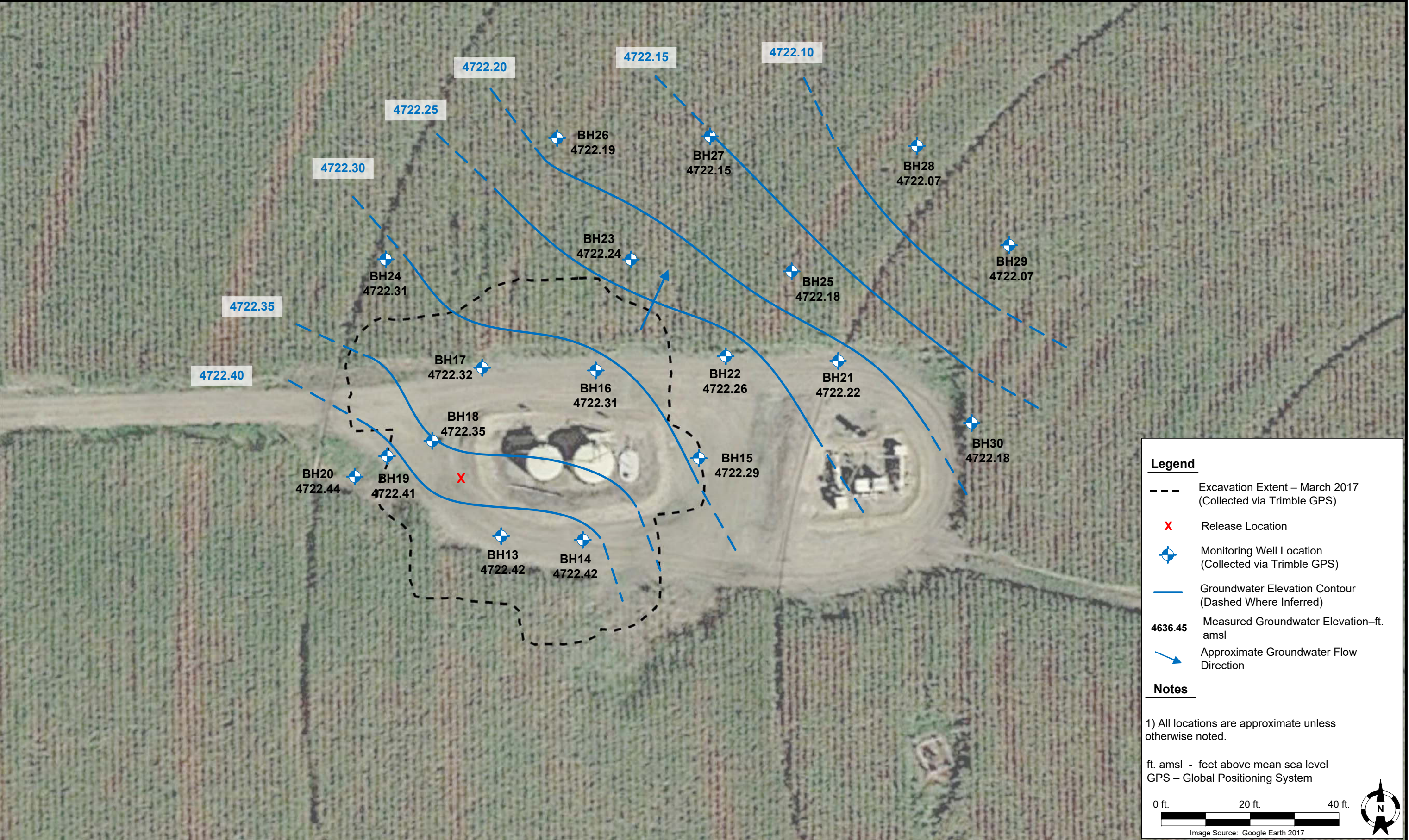
TASMAN
GEOSCIENCES

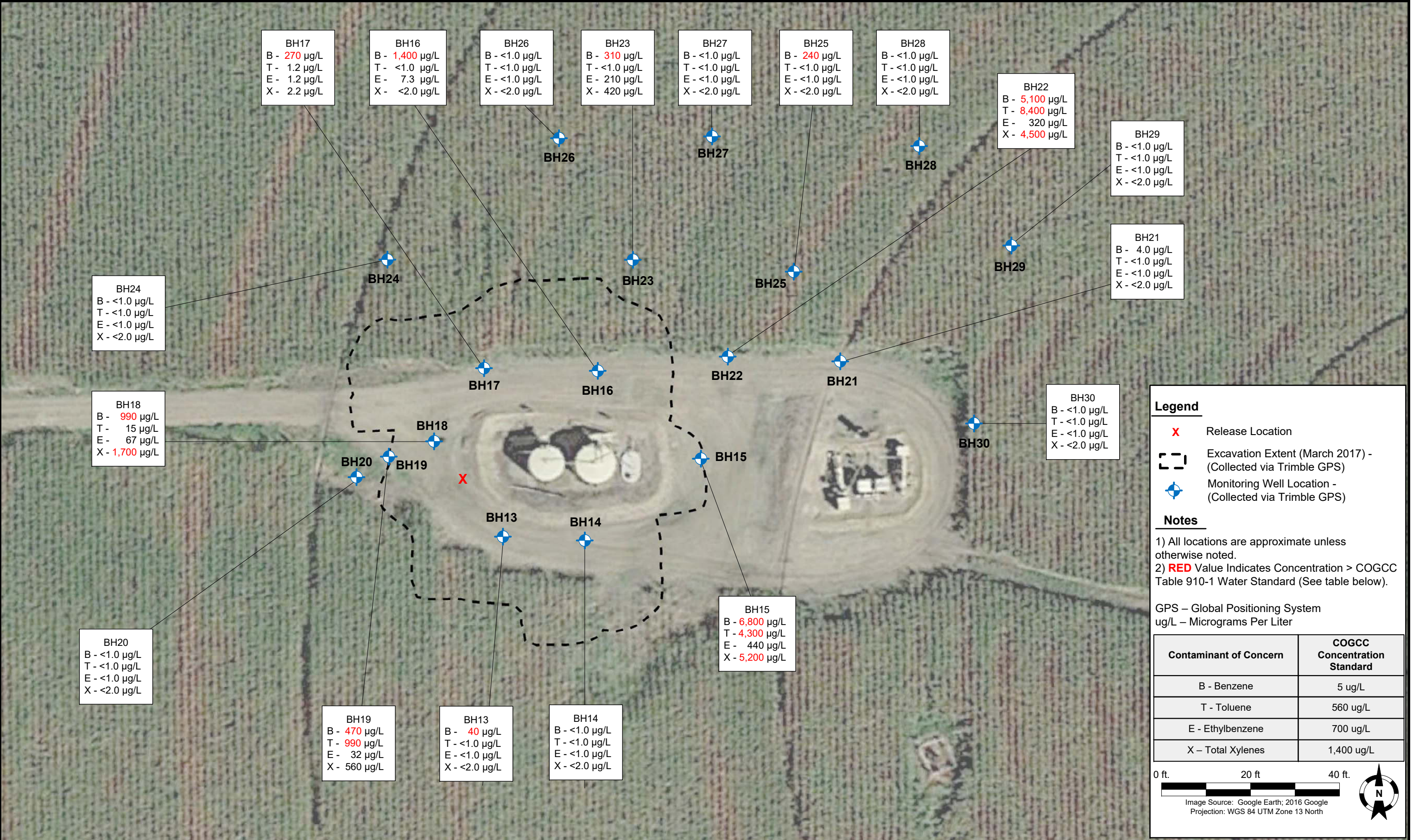
Tasman Geosciences, Inc.
6899 Pecos Street – Unit C
Denver, CO 80221

Noble Energy, Inc. – DJ Basin
Mosier 23-12F Oil Tank Release
NWSW, Section 23, Township 4 North, Range 66 West
Weld County, Colorado

Borehole Soil Analytical
Results Map
(01/19/17, 10/18/17, 12/13/17, 1/12/18)

FIGURE
3





DATE:	01/30/2018
DESIGNED BY:	DA
DRAWN BY:	GB



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GEOSCIENCES

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

Noble Energy, Inc. – DJ Basin
Mosier 23-12F Oil Tank Release
NWSW, Section 23, Township 4 North, Range 66 West
Weld County, Colorado

Groundwater Analytical Figure
(01/19/18)

FIGURE
5

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 24, 2017

Brandon Bruns
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: Mosier 23-12F

Enclosed are the results of analyses for samples received by Summit Scientific on 10/18/17 17:00. 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 Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/24/17 09:34

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH19@5-6'	1710205-01	Soil	10/18/17 13:14	10/18/17 17:00
BH20@0-2'	1710205-02	Soil	10/18/17 13:40	10/18/17 17:00

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.

1710205

Page 1 of 1

Project Manager:	Brandon Bruns, Invoice: Jacob Evans
E-Mail:	Bbruns@tasman-geo.com
Project Name:	Mosier 23-12F
Project Number:	—

www.s2scientific.com

1710205

Sample Receipt Checklist

S2 Work Order: _____

Client: Tasman Client Project ID: Mosier 23-DFShipped Via: P/U
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

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

Cooler ID					
Temp (°C)	3.2°C				

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.	✓			on ice
Were all samples received intact ⁽¹⁾ ?	✓			
Was adequate sample volume provided ⁽¹⁾ ?	✓			
If custody seals are present, are they intact ⁽¹⁾ ?	✓			
Are short holding time analytes or samples with HTs due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	✓			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	✓			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	✓			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	✓			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			✓	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			✓	
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.				
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

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

Eric H
Custodian Printed Name

[Signature]
Signature or Initials of Custodian

10-18-17 17:00
Date/Time



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/24/17 09:34

BH19@5-6'
1710205-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/18/17 13:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1710201	10/19/17	10/21/17	8015M	

Date Sampled: **10/18/17 13:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		107 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/18/17 13:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1710200	10/19/17	10/21/17	EPA 8260B	
Benzene	0.0074	0.0020	"	"	"	"	"	"	
Toluene	0.017	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.023	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **10/18/17 13:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/24/17 09:34

BH20@0-2'
1710205-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/18/17 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1710201	10/19/17	10/21/17	8015M	

Date Sampled: **10/18/17 13:40**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/18/17 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1710200	10/19/17	10/21/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **10/18/17 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/24/17 09:34

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 1710201 - EPA 3550A

Blank (1710201-BLK1)

Prepared: 10/19/17 Analyzed: 10/21/17

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 13.3 " 12.5 106 30-150

LCS (1710201-BS1)

Prepared: 10/19/17 Analyzed: 10/21/17

C10-C28 (DRO) 515 50 mg/kg 499 103 73-134

Surrogate: o-Terphenyl 14.8 " 12.5 118 30-150

Matrix Spike (1710201-MS1)

Source: 1710203-01

Prepared: 10/19/17 Analyzed: 10/21/17

C10-C28 (DRO) 495 50 mg/kg 499 10.6 97.0 50-148

Surrogate: o-Terphenyl 14.4 " 12.5 115 30-150

Matrix Spike Dup (1710201-MSD1)

Source: 1710203-01

Prepared: 10/19/17 Analyzed: 10/21/17

C10-C28 (DRO) 500 50 mg/kg 499 10.6 98.1 50-148 1.05 20

Surrogate: o-Terphenyl 13.7 " 12.5 110 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 Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/24/17 09:34

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 1710200 - EPA 5030 Soil MS

Blank (1710200-BLK1)

Prepared: 10/19/17 Analyzed: 10/21/17

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0400		102	23-173			
Surrogate: Toluene-d8	0.0397		"	0.0400		99.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0402		"	0.0400		100	21-167			

LCS (1710200-BS1)

Prepared: 10/19/17 Analyzed: 10/21/17

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.110	0.0020	"	0.100		110	58-130			
Toluene	0.110	0.0050	"	0.100		110	61-134			
Ethylbenzene	0.129	0.0050	"	0.0992		130	74-139			
m,p-Xylene	0.241	0.010	"	0.200		121	73-137			
o-Xylene	0.118	0.0050	"	0.0980		120	73-141			
Surrogate: 1,2-Dichloroethane-d4	0.0423		"	0.0400		106	23-173			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	21-167			

Matrix Spike (1710200-MS1)

Source: 1710203-01

Prepared: 10/19/17 Analyzed: 10/21/17

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.109	0.0020	"	0.100	ND	109	30-131			
Toluene	0.111	0.0050	"	0.100	ND	111	30-134			
Ethylbenzene	0.126	0.0050	"	0.0992	ND	127	22-153			
m,p-Xylene	0.236	0.010	"	0.200	ND	118	10-159			
o-Xylene	0.118	0.0050	"	0.0980	ND	121	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0439		"	0.0400		110	23-173			
Surrogate: Toluene-d8	0.0401		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	21-167			

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/24/17 09:34

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 1710200 - EPA 5030 Soil MS

Matrix Spike Dup (1710200-MSD1)		Source: 1710203-01			Prepared: 10/19/17		Analyzed: 10/21/17			
Naphthalene	ND	0.010	mg/kg		ND		10-158			42
Benzene	0.110	0.0020	"	0.100	ND	110	30-131	1.04		34
Toluene	0.114	0.0050	"	0.100	ND	114	30-134	2.80		30
Ethylbenzene	0.130	0.0050	"	0.0992	ND	131	22-153	3.07		24
m,p-Xylene	0.244	0.010	"	0.200	ND	122	10-159	3.04		68
o-Xylene	0.120	0.0050	"	0.0980	ND	122	31-151	1.01		38
Surrogate: 1,2-Dichloroethane-d4		0.0434	"	0.0400		109	23-173			
Surrogate: Toluene-d8		0.0399	"	0.0400		99.7	20-170			
Surrogate: 4-Bromofluorobenzene		0.0409	"	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 Street
Denver CO, 80221

Project: Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/24/17 09:34

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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 27, 2017

Brandon Bruns
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: Mosier 23-12F

Enclosed are the results of analyses for samples received by Summit Scientific on 10/20/17 15:30. 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 Street
Denver CO, 80221

Project: Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/27/17 14:47

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH13	1710225-01	Water	10/20/17 12:10	10/20/17 15:30
BH14	1710225-02	Water	10/20/17 11:45	10/20/17 15:30
BH15	1710225-03	Water	10/20/17 12:15	10/20/17 15:30
BH16	1710225-04	Water	10/20/17 11:45	10/20/17 15:30
BH17	1710225-05	Water	10/20/17 12:04	10/20/17 15:30
BH18	1710225-06	Water	10/20/17 12:20	10/20/17 15:30
BH19	1710225-07	Water	10/20/17 12:20	10/20/17 15:30
BH20	1710225-08	Water	10/20/17 12:20	10/20/17 15:30

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

1710225

741 Corporate Circle Suite I ♦ Golden, Colorado 80401


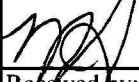
303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 1

Client: Noble/Tasman
 Address: -
 City/State/Zip: -
 Phone: 303-487-1228 Fax: -
 Sampler Name: GB

Project Manager: Brandon Bruns, Invoice: Jacob Evans
 E-Mail: Bbruns@tasman-geo.com
 Project Name: Mosier 23-12F
 Project Number:

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							
BH13	10/20/17	1210	3			X		X					X									
BH14		1145	3			X		X					X									
BH15		1215	3			X		X					X									
BH16		1145	3			X		X					X									
BH17		1204	3			X		X					X									
BH18		1220	3			X		X					X									
BH19		1220	3			X		X					X									
BH20		1220	3			X		X					X									

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time (Check)	Notes:
	10/20/17 1530		10/20/17 1530	Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 Hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity: Temperature Upon Receipt: 4.10C Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:		

1710225

Sample Receipt Checklist

S2 Work Order: _____

Client: Noble/TasmanClient Project ID: Mosier 23-12FShipped Via: P/V

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

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

Cooler ID					
Temp (°C)	4.1				

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.				
Were all samples received intact ⁽¹⁾ ?	✓			
Was adequate sample volume provided ⁽¹⁾ ?	✓			
If custody seals are present, are they intact ⁽¹⁾ ?			✓	
Are short holding time analytes or samples with HTs due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	✓			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	✓			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	✓			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	✓			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.		✓		
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			✓	
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.				
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

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

Nakha
Custodian Printed Name

[Signature]
Signature or Initials of Custodian

10/20/17 1620
Date/Time



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/27/17 14:47

BH13
1710225-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/20/17 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1710229	10/24/17	10/24/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **10/20/17 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		92.9 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		98.2 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	45-146		"	"	"	"	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/27/17 14:47

BH14
1710225-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/20/17 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1710229	10/24/17	10/24/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **10/20/17 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		88.7 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		101 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	45-146		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/27/17 14:47

BH15
1710225-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/20/17 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	5900	100	ug/l	100	1710229	10/24/17	10/26/17	EPA 8260B	
Toluene	5800	100	"	"	"	"	"	"	
Ethylbenzene	340	100	"	"	"	"	"	"	
Xylenes (total)	2900	200	"	"	"	"	"	"	

Date Sampled: **10/20/17 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		85.7 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		96.8 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		103 %	45-146		"	"	"	"	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/27/17 14:47

BH16
1710225-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/20/17 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	1600	10	ug/l	10	1710229	10/24/17	10/25/17	EPA 8260B	
Toluene	1.6	1.0	"	1	"	"	10/25/17	"	
Ethylbenzene	9.9	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	10/25/17	"	

Date Sampled: **10/20/17 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		74.3 %	37-154		"	"	10/25/17	"	
<i>Surrogate: Toluene-d8</i>		99.5 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		99.5 %	45-146		"	"	"	"	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/27/17 14:47

BH17
1710225-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/20/17 12:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	150	1.0	ug/l	1	1710229	10/24/17	10/24/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **10/20/17 12:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		91.3 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		90.8 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	45-146		"	"	"	"	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/27/17 14:47

BH18
1710225-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/20/17 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1710229	10/24/17	10/26/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	10/26/17	"	
Ethylbenzene	ND	1.0	"	"	"	"	10/26/17	"	
Xylenes (total)	640	2.0	"	"	"	"	"	"	

Date Sampled: **10/20/17 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		97.0 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.3 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		113 %	45-146		"	"	"	"	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/27/17 14:47

BH19
1710225-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/20/17 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	51	1.0	ug/l	1	1710229	10/24/17	10/24/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	460	2.0	"	"	"	"	"	"	

Date Sampled: **10/20/17 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.2 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		98.9 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %	45-146		"	"	"	"	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/27/17 14:47

BH20
1710225-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/20/17 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1710229	10/24/17	10/24/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **10/20/17 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		80.9 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		98.2 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.7 %	45-146		"	"	"	"	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/27/17 14:47

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 1710229 - EPA 5030 Water MS

Blank (1710229-BLK1)

Prepared & Analyzed: 10/24/17

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	10.6		"	13.3		79.6	37-154			
Surrogate: Toluene-d8	13.1		"	13.3		98.0	45-149			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.1	45-146			

LCS (1710229-BS1)

Prepared & Analyzed: 10/24/17

Benzene	21.2	1.0	ug/l	33.3		63.7	51-132			
Toluene	25.7	1.0	"	33.3		77.2	51-138			
Ethylbenzene	29.6	1.0	"	33.1		89.5	58-146			
m,p-Xylene	60.2	2.0	"	66.5		90.4	57-144			
o-Xylene	29.6	1.0	"	32.7		90.8	53-146			
Surrogate: 1,2-Dichloroethane-d4	11.5		"	13.3		86.6	37-154			
Surrogate: Toluene-d8	13.1		"	13.3		98.4	45-149			
Surrogate: 4-Bromofluorobenzene	12.7		"	13.3		95.5	45-146			

Matrix Spike (1710229-MS1)

Source: 1710201-01

Prepared & Analyzed: 10/24/17

Benzene	21.4	1.0	ug/l	33.3	ND	64.1	34-141			
Toluene	25.9	1.0	"	33.3	ND	77.7	27-151			
Ethylbenzene	29.7	1.0	"	33.1	ND	89.8	29-160			
m,p-Xylene	59.4	2.0	"	66.5	ND	89.2	20-166			
o-Xylene	29.6	1.0	"	32.7	ND	90.6	33-159			
Surrogate: 1,2-Dichloroethane-d4	11.6		"	13.3		87.3	37-154			
Surrogate: Toluene-d8	13.0		"	13.3		97.7	45-149			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.9	45-146			

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/27/17 14:47

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 1710229 - EPA 5030 Water MS

Matrix Spike Dup (1710229-MSD1)	Source: 1710201-01			Prepared & Analyzed: 10/24/17						
Benzene	21.1	1.0	ug/l	33.3	ND	63.4	34-141	1.13	32	
Toluene	25.9	1.0	"	33.3	ND	77.6	27-151	0.116	25	
Ethylbenzene	29.9	1.0	"	33.1	ND	90.4	29-160	0.638	50	
m,p-Xylene	60.7	2.0	"	66.5	ND	91.2	20-166	2.22	36	
o-Xylene	30.0	1.0	"	32.7	ND	91.9	33-159	1.41	26	
Surrogate: 1,2-Dichloroethane-d4	11.7		"	13.3		87.7	37-154			
Surrogate: Toluene-d8	13.0		"	13.3		97.4	45-149			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.4	45-146			

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/27/17 14:47

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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 19, 2017

Brandon Bruns
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: Mosier 23-12F

Enclosed are the results of analyses for samples received by Summit Scientific on 12/14/17 09:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury For Ben Shrewsbury
Laboratory Manager



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/19/17 07:59

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH21@5-7'	1712179-01	Soil	12/13/17 13:33	12/14/17 09:45
BH22@5-7'	1712179-02	Soil	12/13/17 11:50	12/14/17 09:45
BH23@2-4'	1712179-03	Soil	12/13/17 11:07	12/14/17 09:45
BH24@0-2'	1712179-04	Soil	12/13/17 10:30	12/14/17 09:45
BH25@3-5'	1712179-05	Soil	12/13/17 14:02	12/14/17 09:45

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

1712179

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: 303-487-1228 Fax: —
Sampler Name: GB

Project Manager: Brandon Bruns, Invoice: Jacob Evans
E-Mail: Bbruns@tasman-geo.com
Project Name: Mosier 23-12F
Project Number: —

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					
BH21 @ 5-7'	12/13/17	1333	1			X			X				X	X						
BH22 @ 5-7'	12/13/17	1150	1			X			X				X	X						
BH23 @ 2-4'	12/13/17	1107	1			X			X				X	X						
BH24 @ 0-2'	12/13/17	1030	1			X			X				X	X						
BH25 @ 3-5'	12/13/17	1402	1			X			X				X	X						
Relinquished by: <u>[Signature]</u> Date/Time: <u>12/14/17</u>				Received by: <u>[Signature]</u> Date/Time: <u>12-14-17 9.45</u>				Turn Around Time (Check) Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 Hours <input type="checkbox"/>												Notes:
Relinquished by: <u> </u> Date/Time: <u> </u>				Received by: <u> </u> Date/Time: <u> </u>				Sample Integrity: Temperature Upon Receipt: <u>.1</u> Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>												
Relinquished by: <u> </u> Date/Time: <u> </u>				Received in Lab by: <u> </u> Date/Time: <u> </u>																

Sample Receipt Checklist

S2 Work Order: _____

Client: Noble Hasman

Client Project ID: Mosier 23-12F

Shipped Via:

P.V.

Airbill #: _____

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

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

Cooler ID					
Temp (°C)	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.	X			
Were all samples received intact ⁽¹⁾ ?	X			
Was adequate sample volume provided ⁽¹⁾ ?	X			
If custody seals are present, are they intact ⁽¹⁾ ?			X	
Are short holding time analytes or samples with HTs due within 48 hours present?			X	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	X			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	✓			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	X			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	X			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			X	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?				
Note the type of preservative in the Comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , ect			✓	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			✓	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

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

Muri P.
Custodian Printed Name

12-14-17
Signature or Initials of Custodian

10:15
Date/Time



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
12/19/17 07:59

BH21@5-7'
1712179-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/13/17 13:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1712182	12/15/17	12/16/17	8015M	

Date Sampled: **12/13/17 13:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		130 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/13/17 13:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1712181	12/15/17	12/16/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **12/13/17 13:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		94.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.0 %	21-167		"	"	"	"	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/19/17 07:59

BH22@5-7'
1712179-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/13/17 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1712182	12/15/17	12/16/17	8015M	

Date Sampled: **12/13/17 11:50**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/13/17 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1712181	12/15/17	12/16/17	EPA 8260B	
Benzene	0.014	0.0020	"	"	"	"	"	"	
Toluene	0.029	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.032	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **12/13/17 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		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 Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/19/17 07:59

BH23@2-4'
1712179-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/13/17 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1712182	12/15/17	12/16/17	8015M	

Date Sampled: **12/13/17 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		140 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/13/17 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1712181	12/15/17	12/16/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **12/13/17 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		94.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.8 %	21-167		"	"	"	"	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/19/17 07:59

BH24@0-2'
1712179-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/13/17 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1712182	12/15/17	12/16/17	8015M	

Date Sampled: **12/13/17 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		129 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/13/17 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1712181	12/15/17	12/16/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **12/13/17 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		91.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.7 %	21-167		"	"	"	"	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
12/19/17 07:59

BH25@3-5'
1712179-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/13/17 14:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1712182	12/15/17	12/16/17	8015M	

Date Sampled: **12/13/17 14:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		129 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/13/17 14:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1712181	12/15/17	12/16/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **12/13/17 14:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		91.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.8 %	21-167		"	"	"	"	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/19/17 07:59

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 1712182 - EPA 3550A

Blank (1712182-BLK1)

Prepared: 12/15/17 Analyzed: 12/16/17

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 15.4 " 12.5 123 30-150

LCS (1712182-BS1)

Prepared: 12/15/17 Analyzed: 12/16/17

C10-C28 (DRO) 603 50 mg/kg 499 121 73-134

Surrogate: o-Terphenyl 16.7 " 12.5 134 30-150

Matrix Spike (1712182-MS1)

Source: 1712163-01

Prepared: 12/15/17 Analyzed: 12/16/17

C10-C28 (DRO) 598 50 mg/kg 499 18.2 116 50-148

Surrogate: o-Terphenyl 19.4 " 12.5 155 30-150

S-02

Matrix Spike Dup (1712182-MSD1)

Source: 1712163-01

Prepared: 12/15/17 Analyzed: 12/16/17

C10-C28 (DRO) 429 50 mg/kg 499 18.2 82.2 50-148 33.0 20 QM-07

Surrogate: o-Terphenyl 13.0 " 12.5 104 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 Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/19/17 07:59

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 1712181 - EPA 5030 Soil MS

Blank (1712181-BLK1)

Prepared & Analyzed: 12/15/17

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0363</i>		<i>"</i>	<i>0.0400</i>		<i>90.8</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0410</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0379</i>		<i>"</i>	<i>0.0400</i>		<i>94.8</i>	<i>21-167</i>			

LCS (1712181-BS1)

Prepared & Analyzed: 12/15/17

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.103	0.0020	"	0.100		103	58-130			
Toluene	0.0975	0.0050	"	0.100		97.5	61-134			
Ethylbenzene	0.104	0.0050	"	0.0992		105	74-139			
m,p-Xylene	0.200	0.010	"	0.200		100	73-137			
o-Xylene	0.0995	0.0050	"	0.0980		102	73-141			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0370</i>		<i>"</i>	<i>0.0400</i>		<i>92.6</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0409</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0382</i>		<i>"</i>	<i>0.0400</i>		<i>95.5</i>	<i>21-167</i>			

Matrix Spike Dup (1712181-MSD1)

Source: 1712163-01

Prepared & Analyzed: 12/15/17

Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0919	0.0020	"	0.100	ND	91.9	30-131		34	
Toluene	0.0777	0.0050	"	0.100	ND	77.7	30-134		30	
Ethylbenzene	0.0831	0.0050	"	0.0992	ND	83.7	22-153		24	
m,p-Xylene	0.162	0.010	"	0.200	ND	81.1	10-159		68	
o-Xylene	0.0825	0.0050	"	0.0980	ND	84.2	31-151		38	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0384</i>		<i>"</i>	<i>0.0400</i>		<i>95.9</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0399</i>		<i>"</i>	<i>0.0400</i>		<i>99.7</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0373</i>		<i>"</i>	<i>0.0400</i>		<i>93.2</i>	<i>21-167</i>			

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/19/17 07:59

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.
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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 25, 2017

Brandon Bruns
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: Mosier 23-12F

Enclosed are the results of analyses for samples received by Summit Scientific on 12/18/17 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury For Ben Shrewsbury
Laboratory Manager



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/25/17 16:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH21	1712205-01	Water	12/18/17 14:04	12/18/17 17:00
BH22	1712205-02	Water	12/18/17 14:10	12/18/17 17:00
BH23	1712205-03	Water	12/18/17 13:57	12/18/17 17:00
BH24	1712205-04	Water	12/18/17 13:55	12/18/17 17:00
BH25	1712205-05	Water	12/18/17 14:05	12/18/17 17:00

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

1712205



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: 303-487-1228 Fax: —
 Sampler Name: GB

Project Manager: Brandon Bruns, Invoice: Jacob Evans
 E-Mail: Bbruns@tasman-geo.com
 Project Name: Mosier 23-12F
 Project Number: —

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										
BH21	12/18/17	1404	3	X				X					X												
BH22	↓	1410	↓	X				X					X												
BH23	↓	1357	↓	X				X					X												
BH24	↓	1355	↓	X				X					X												
BH25	↓	1405	↓	X				X					X												
Relinquished by: 				Date/Time: <u>17:00</u> <u>12/18/17</u>				Received by:  <u>12-16-17</u>				Date/Time: <u>17:00</u>				Turn Around Time (Check)								Notes:	
Relinquished by:				Date/Time:				Received by:				Date/Time:				Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input checked="" 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"/>									

1712205

Sample Receipt Checklist

S2 Work Order: _____

Client: Noble / Tasman Client Project ID: Mosier 23-12 FShipped Via: P.V. Airbill #: _____
(UPS, FedEx, Hand Delivered, Pick-up, etc.)Matrix (check all that apply): Air Soil/Solid X Water Other: _____
(Describe)

Cooler ID					
Temp (°C)	5.4				

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.	X			
Were all samples received intact ⁽¹⁾ ?	X			
Was adequate sample volume provided ⁽¹⁾ ?	X			
If custody seals are present, are they intact ⁽¹⁾ ?			X	
Are short holding time analytes or samples with HTs due within 48 hours present?			X	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	X			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	X			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	X			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	X			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.		X		
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	X			HCL
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			X	
If dissolved metals are requested, were samples field filtered?			X	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

Muri P.
Custodian Printed Name12-18-17
Signature or Initials of Custodian17:30
Date/Time



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/25/17 16:55

BH21
1712205-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/18/17 14:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	31	1.0	ug/l	1	1712221	12/22/17	12/22/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/18/17 14:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		114 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		91.1 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	45-146		"	"	"	"	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/25/17 16:55

BH22
1712205-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/18/17 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	6800	100	ug/l	100	1712221	12/22/17	12/22/17	EPA 8260B	
Toluene	15000	100	"	"	"	"	"	"	
Ethylbenzene	510	100	"	"	"	"	"	"	
Xylenes (total)	8000	200	"	"	"	"	"	"	

Date Sampled: **12/18/17 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		111 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		92.4 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		112 %	45-146		"	"	"	"	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/25/17 16:55

BH23
1712205-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/18/17 13:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	510	10	ug/l	10	1712221	12/22/17	12/22/17	EPA 8260B	
Toluene	4.2	1.0	"	1	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	3.7	2.0	"	"	"	"	"	"	

Date Sampled: **12/18/17 13:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		116 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		96.5 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	45-146		"	"	"	"	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/25/17 16:55

BH24
1712205-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/18/17 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1712221	12/22/17	12/22/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/18/17 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		120 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		90.5 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		118 %	45-146		"	"	"	"	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/25/17 16:55

BH25
1712205-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/18/17 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	29	1.0	ug/l	1	1712221	12/22/17	12/22/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/18/17 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		117 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		94.2 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %	45-146		"	"	"	"	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/25/17 16:55

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 1712221 - EPA 5030 Water MS

Blank (1712221-BLK1)

Prepared & Analyzed: 12/19/17

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	11.9		"	13.3		89.3	37-154			
Surrogate: Toluene-d8	12.8		"	13.3		96.2	45-149			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.0	45-146			

LCS (1712221-BS1)

Prepared & Analyzed: 12/19/17

Benzene	34.4	1.0	ug/l	33.3		103	51-132			
Toluene	34.2	1.0	"	33.3		103	51-138			
Ethylbenzene	39.1	1.0	"	33.1		118	58-146			
m,p-Xylene	72.6	2.0	"	66.5		109	57-144			
o-Xylene	37.0	1.0	"	32.7		113	53-146			
Surrogate: 1,2-Dichloroethane-d4	12.8		"	13.3		96.4	37-154			
Surrogate: Toluene-d8	13.1		"	13.3		98.2	45-149			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.7	45-146			

Matrix Spike (1712221-MS1)

Source: 1712211-01

Prepared & Analyzed: 12/19/17

Benzene	35.3	1.0	ug/l	33.3	ND	106	34-141			
Toluene	34.8	1.0	"	33.3	1.93	98.6	27-151			
Ethylbenzene	40.2	1.0	"	33.1	9.81	92.1	29-160			
m,p-Xylene	75.0	2.0	"	66.5	74.6	0.616	20-166			QM-07
o-Xylene	38.4	1.0	"	32.7	5.74	99.9	33-159			
Surrogate: 1,2-Dichloroethane-d4	13.0		"	13.3		97.7	37-154			
Surrogate: Toluene-d8	12.9		"	13.3		96.8	45-149			
Surrogate: 4-Bromofluorobenzene	12.6		"	13.3		94.5	45-146			

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/25/17 16:55

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 1712221 - EPA 5030 Water MS

Matrix Spike Dup (1712221-MSD1)	Source: 1712211-01			Prepared & Analyzed: 12/19/17						
Benzene	35.2	1.0	ug/l	33.3	ND	106	34-141	0.255	32	
Toluene	35.3	1.0	"	33.3	1.93	100	27-151	1.43	25	
Ethylbenzene	40.3	1.0	"	33.1	9.81	92.2	29-160	0.124	50	
m,p-Xylene	75.2	2.0	"	66.5	74.6	0.977	20-166	0.319	36	QM-07
o-Xylene	38.8	1.0	"	32.7	5.74	101	33-159	1.19	26	
Surrogate: 1,2-Dichloroethane-d4	13.2		"	13.3		98.9	37-154			
Surrogate: Toluene-d8	13.1		"	13.3		98.4	45-149			
Surrogate: 4-Bromofluorobenzene	12.7		"	13.3		95.0	45-146			

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/25/17 16:55

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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

January 18, 2018

Brandon Bruns
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: Mosier 23-12F

Enclosed are the results of analyses for samples received by Summit Scientific on 01/12/18 16:45. 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 Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/18/18 07:28

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH26@2-4'	1801147-01	Soil	01/12/18 09:20	01/12/18 16:45
BH27@2-4'	1801147-02	Soil	01/12/18 10:10	01/12/18 16:45
BH28@0-2'	1801147-03	Soil	01/12/18 10:55	01/12/18 16:45
BH29@2-4'	1801147-04	Soil	01/12/18 11:16	01/12/18 16:45
BH30@2-4'	1801147-05	Soil	01/12/18 12:10	01/12/18 16:45

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



1801147

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: 303-487-1228 Fax: -
Sampler Name: GB

Project Manager: Brandon Bruns, Invoice: Jacob Evans
E-Mail: Bbruns@tasman-geo.com
Project Name: Mosier 23-12 F
Project Number: -

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						
BH26@2-4	1/12/18	0920	1			X			X				X	X							
BH27@2-4	↓	1010	1			X			X				X	X							
BH28@0-2	↓	1055	1			X			X				X	X							
BH29@2-4	↓	1116	1			X			X				X	X							
BH30@2-4	↓	1210	1			X			X				X	X							
Relinquished by: 	Date/Time: 1/12/18 10:45	Received by: 	Date/Time: 1-12-18 10:45	Turn Around Time (Check)																Notes:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day		72 Hours		Standard	<input checked="" type="checkbox"/>												
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 Hours		48 Hours															
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	Sample Integrity: 3.7																	
				Temperature Upon Receipt: 3.7																	
				Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																	

1801147

Sample Receipt Checklist

S2 Work Order: _____

Client: Noble/Tasman Client Project ID: Mosier 23-12FShipped Via: P.U. Airbill #: _____
(UPS, FedEx, Hand Delivered, Pick-up, etc.)Matrix (check all that apply): Air X Soil/Solid Water Other: _____
(Describe)

Cooler ID					
Temp (°C)	3.7				

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.	X			
Were all samples received intact ⁽¹⁾ ?	X			
Was adequate sample volume provided ⁽¹⁾ ?	X			
If custody seals are present, are they intact ⁽¹⁾ ?			X	
Are short holding time analytes or samples with HTs due within 48 hours present?			X	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	X			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	X			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	X			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	X			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			X	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?				
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			X	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			X	
Record the pH in Comments.			X	
If dissolved metals are requested, were samples field filtered?			X	
Additional Comments (if any):				

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

Murip.
Custodian Printed Name1-12-18
Signature or Initials of Custodian17:30
Date/Time



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/18/18 07:28

BH26@2-4'
1801147-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/18 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1801137	01/15/18	01/16/18	8015M	

Date Sampled: **01/12/18 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		122 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/18 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1801138	01/16/18	01/16/18	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/12/18 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		87.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.5 %	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 Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/18/18 07:28

BH27@2-4'
1801147-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/18 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1801137	01/15/18	01/16/18	8015M	

Date Sampled: **01/12/18 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		120 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/18 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1801138	01/16/18	01/16/18	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/12/18 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		92.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.8 %	21-167		"	"	"	"	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/18/18 07:28

BH28@0-2'
1801147-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/18 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1801137	01/15/18	01/16/18	8015M	

Date Sampled: **01/12/18 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		113 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/18 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1801138	01/16/18	01/16/18	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/12/18 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		89.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		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 Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/18/18 07:28

BH29@2-4'
1801147-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/18 11:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1801137	01/15/18	01/16/18	8015M	

Date Sampled: **01/12/18 11:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		120 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/18 11:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1801138	01/16/18	01/16/18	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/12/18 11:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		91.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.9 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/18/18 07:28

BH30@2-4'
1801147-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/18 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1801137	01/15/18	01/16/18	8015M	

Date Sampled: **01/12/18 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		119 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/18 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1801138	01/16/18	01/16/18	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/12/18 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		90.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.5 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/18/18 07:28

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 1801137 - EPA 3550A

Blank (1801137-BLK1)

Prepared: 01/15/18 Analyzed: 01/16/18

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	10.4		"	12.5		83.1	30-150			

LCS (1801137-BS1)

Prepared: 01/15/18 Analyzed: 01/16/18

C10-C28 (DRO)	576	50	mg/kg	499		115	73-134			
Surrogate: o-Terphenyl	14.9		"	12.5		119	30-150			

Matrix Spike (1801137-MS1)

Source: 1801137-01

Prepared: 01/15/18 Analyzed: 01/16/18

C10-C28 (DRO)	1120	50	mg/kg	499	875	48.2	50-148			QM-07
Surrogate: o-Terphenyl	29.8		"	12.5		239	30-150			S-02

Matrix Spike Dup (1801137-MSD1)

Source: 1801137-01

Prepared: 01/15/18 Analyzed: 01/16/18

C10-C28 (DRO)	1020	50	mg/kg	499	875	28.2	50-148	9.36	20	QM-07
Surrogate: o-Terphenyl	28.7		"	12.5		230	30-150			S-02

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/18/18 07:28

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 1801138 - EPA 5030 Soil MS

Blank (1801138-BLK1)

Prepared & Analyzed: 01/16/18

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0357		"	0.0400		89.3	23-173			
Surrogate: Toluene-d8	0.0397		"	0.0400		99.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.2	21-167			

LCS (1801138-BS1)

Prepared & Analyzed: 01/16/18

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.108	0.0020	"	0.100		108	58-130			
Toluene	0.111	0.0050	"	0.100		111	61-134			
Ethylbenzene	0.124	0.0050	"	0.0992		125	74-139			
m,p-Xylene	0.235	0.010	"	0.200		118	73-137			
o-Xylene	0.116	0.0050	"	0.0980		119	73-141			
Surrogate: 1,2-Dichloroethane-d4	0.0356		"	0.0400		89.0	23-173			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.4	21-167			

Matrix Spike (1801138-MS1)

Source: 1801145-01

Prepared & Analyzed: 01/16/18

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.106	0.0020	"	0.100	ND	106	30-131			
Toluene	0.109	0.0050	"	0.100	ND	109	30-134			
Ethylbenzene	0.122	0.0050	"	0.0992	ND	123	22-153			
m,p-Xylene	0.234	0.010	"	0.200	ND	117	10-159			
o-Xylene	0.117	0.0050	"	0.0980	ND	119	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0363		"	0.0400		90.8	23-173			
Surrogate: Toluene-d8	0.0399		"	0.0400		99.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0388		"	0.0400		97.0	21-167			

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/18/18 07:28

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 1801138 - EPA 5030 Soil MS

Matrix Spike Dup (1801138-MSD1)		Source: 1801145-01			Prepared & Analyzed: 01/16/18					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.112	0.0020	"	0.100	ND	112	30-131	6.24	34	
Toluene	0.115	0.0050	"	0.100	ND	115	30-134	4.77	30	
Ethylbenzene	0.127	0.0050	"	0.0992	ND	128	22-153	3.82	24	
m,p-Xylene	0.243	0.010	"	0.200	ND	122	10-159	3.79	68	
o-Xylene	0.120	0.0050	"	0.0980	ND	122	31-151	2.61	38	
Surrogate: 1,2-Dichloroethane-d4		0.0376	"	0.0400		94.0	23-173			
Surrogate: Toluene-d8		0.0400	"	0.0400		99.9	20-170			
Surrogate: 4-Bromofluorobenzene		0.0397	"	0.0400		99.3	21-167			

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/18/18 07:28

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.
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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

January 23, 2018

Brandon Bruns
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: Mosier 23-12F

Enclosed are the results of analyses for samples received by Summit Scientific on 01/19/18 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury For Ben Shrewsbury
Laboratory Manager



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/23/18 16:21

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH13	1801214-01	Water	01/19/18 11:15	01/19/18 16:30
BH14	1801214-02	Water	01/19/18 11:00	01/19/18 16:30
BH15	1801214-03	Water	01/19/18 11:38	01/19/18 16:30
BH16	1801214-04	Water	01/19/18 11:26	01/19/18 16:30
BH17	1801214-05	Water	01/19/18 11:49	01/19/18 16:30
BH18	1801214-06	Water	01/19/18 11:58	01/19/18 16:30
BH19	1801214-07	Water	01/19/18 12:15	01/19/18 16:30
BH20	1801214-08	Water	01/19/18 12:32	01/19/18 16:30
BH21	1801214-09	Water	01/19/18 12:40	01/19/18 16:30
BH22	1801214-10	Water	01/19/18 11:44	01/19/18 16:30
BH23	1801214-11	Water	01/19/18 12:20	01/19/18 16:30
BH24	1801214-12	Water	01/19/18 12:08	01/19/18 16:30
BH25	1801214-13	Water	01/19/18 12:25	01/19/18 16:30
BH26	1801214-14	Water	01/19/18 11:30	01/19/18 16:30
BH27	1801214-15	Water	01/19/18 11:55	01/19/18 16:30
BH28	1801214-16	Water	01/19/18 12:05	01/19/18 16:30
BH29	1801214-17	Water	01/19/18 12:10	01/19/18 16:30
BH30	1801214-18	Water	01/19/18 12:20	01/19/18 16:30

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

1801214.1

741 Corporate Circle Suite I ♦ Golden, Colorado 80401


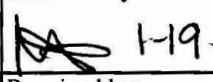
303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 2

Client: Noble/Tasman
 Address: -
 City/State/Zip: -
 Phone: 303-487-1228 Fax: -
 Sampler Name: GB

Project Manager: Brandon Bruns, Invoice: Jacob Evans
 E-Mail: Bbruns@tasman-geo.com
 Project Name: MUSIC 23-12F
 Project Number: -

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							
BH13	1/19/18	1115	3	X				X					X									
BH14		1100		X				X					X									
BH15		1138		X				X					X									
BH16		1126		X				X					X									
BH17		1149		X				X					X									
BH18		1158		X				X					X									
BH19		1215		X				X					X									
BH20		1232		X				X					X									
BH21		1240		X				X					X									
BH22		1144		X				X					X									

Relinquished by: 	Date/Time: 1/19/18 16:30	Received by: 	Date/Time: 1-19-18 16:30	Turn Around Time (Check): Same Day <input type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input checked="" type="checkbox"/>	72 Hours <input type="checkbox"/> Standard <input type="checkbox"/>	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity: Temperature Upon Receipt: 9.4 Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:			

Summit Scientific


1801214.2

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

Page 2 of 2

Client: Noble/Tasman
Address: -
City/State/Zip: -
Phone: 303-487-1228 Fax: -
Sampler Name: GB

Project Manager: Brandon Bruns, Invoice: Jacob Evans
E-Mail: Bbruns@tasman-geo.com
Project Name: Mosier 23-12F
Project Number: -

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						
B423	1/19/18	1220	3	X				X					X								
B424	↓	1208	1	X				X					X								
B425	↓	1225	1	X				X					X								
B426	↓	1130	1	X				X					X								
B427	↓	1155	1	X				X					X								
B428	↓	1205	1	X				X					X								
B429	↓	1210	1	X				X					X								
B430	↓	1220	1	X				X					X								
Relinquished by:  Date/Time: 1/19/18				Received by: _____ Date/Time: _____				Turn Around Time (Check) Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input type="checkbox"/> 48 Hours <input checked="" type="checkbox"/>												Notes:	
Relinquished by: _____ Date/Time: _____				Received by: _____ Date/Time: _____				Sample Integrity: Temperature Upon Receipt: 9.4 Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>													
Relinquished by: _____ Date/Time: _____				Received in Lab by: _____ Date/Time: _____																	

Sample Receipt Checklist

1801214

S2 Work Order: _____

Client: Noble/Tasman Client Project ID: Mosier 23-12F

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

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

Cooler ID					
Temp (°C)	9.4				

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.	X			
Were all samples received intact ⁽¹⁾ ?	X			
Was adequate sample volume provided ⁽¹⁾ ?	X			
If custody seals are present, are they intact ⁽¹⁾ ?			X	
Are short holding time analytes or samples with HTs due within 48 hours present?	X		X	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	X			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	X			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	X			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	X			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.		X		
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	X			HCL
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			X	
If dissolved metals are requested, were samples field filtered?			X	
Additional Comments (if any):				

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

Murip
Custodian Printed Name

ND 1-19-18
Signature or Initials of Custodian

17:30
Date/Time



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/23/18 16:21

BH13
1801214-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/19/18 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	40	1.0	ug/l	1	1801221	01/21/18	01/21/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/19/18 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		115 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.6 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	45-146		"	"	"	"	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/23/18 16:21

BH14
1801214-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/19/18 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1801221	01/21/18	01/21/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/19/18 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		96.5 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	45-146		"	"	"	"	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/23/18 16:21

BH15
1801214-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/19/18 11:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	6800	100	ug/l	100	1801221	01/21/18	01/21/18	EPA 8260B	
Toluene	4300	100	"	"	"	"	"	"	
Ethylbenzene	440	100	"	"	"	"	"	"	
Xylenes (total)	5200	200	"	"	"	"	"	"	

Date Sampled: **01/19/18 11:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		100 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		104 %	45-146		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/23/18 16:21

BH16
1801214-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/19/18 11:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	1400	100	ug/l	100	1801221	01/21/18	01/21/18	EPA 8260B	
Toluene	ND	1.0	"	1	"	"	"	"	
Ethylbenzene	7.3	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/19/18 11:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		99.0 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	45-146		"	"	"	"	

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Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/23/18 16:21

BH17
1801214-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/19/18 11:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	270	1.0	ug/l	1	1801221	01/21/18	01/21/18	EPA 8260B	
Toluene	1.2	1.0	"	"	"	"	"	"	
Ethylbenzene	1.2	1.0	"	"	"	"	"	"	
Xylenes (total)	2.2	2.0	"	"	"	"	"	"	

Date Sampled: **01/19/18 11:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		108 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.0 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		103 %	45-146		"	"	"	"	

Summit Scientific

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Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/23/18 16:21

BH18
1801214-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/19/18 11:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	990	100	ug/l	100	1801221	01/21/18	01/21/18	EPA 8260B	
Toluene	15	1.0	"	1	"	"	"	"	
Ethylbenzene	67	1.0	"	"	"	"	"	"	
Xylenes (total)	1700	200	"	100	"	"	"	"	

Date Sampled: **01/19/18 11:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.3 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		104 %	45-146		"	"	"	"	

Summit Scientific

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Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/23/18 16:21

BH19
1801214-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/19/18 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	470	10	ug/l	10	1801221	01/21/18	01/21/18	EPA 8260B	
Toluene	990	10	"	"	"	"	"	"	
Ethylbenzene	32	10	"	"	"	"	"	"	
Xylenes (total)	560	20	"	"	"	"	"	"	

Date Sampled: **01/19/18 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		99.5 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		101 %	45-146		"	"	"	"	

Summit Scientific

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6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/23/18 16:21

BH20
1801214-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/19/18 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1801221	01/21/18	01/21/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/19/18 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		95.9 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	45-146		"	"	"	"	

Summit Scientific

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Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/23/18 16:21

BH21
1801214-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/19/18 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	4.0	1.0	ug/l	1	1801221	01/21/18	01/21/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/19/18 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.1 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	45-146		"	"	"	"	

Summit Scientific

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Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/23/18 16:21

BH22
1801214-10 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/19/18 11:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	5100	100	ug/l	100	1801221	01/21/18	01/21/18	EPA 8260B	
Toluene	8400	100	"	"	"	"	"	"	
Ethylbenzene	320	100	"	"	"	"	"	"	
Xylenes (total)	4500	200	"	"	"	"	"	"	

Date Sampled: **01/19/18 11:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		99.5 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		101 %	45-146		"	"	"	"	

Summit Scientific

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Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/23/18 16:21

BH23
1801214-11 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/19/18 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	310	10	ug/l	10	1801221	01/21/18	01/21/18	EPA 8260B	
Toluene	ND	1.0	"	1	"	"	"	"	
Ethylbenzene	210	1.0	"	"	"	"	"	"	
Xylenes (total)	420	2.0	"	"	"	"	"	"	

Date Sampled: **01/19/18 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		100 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	45-146		"	"	"	"	

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Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/23/18 16:21

BH24
1801214-12 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/19/18 12:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1801221	01/23/18	01/23/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/19/18 12:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		96.2 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	45-146		"	"	"	"	

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Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/23/18 16:21

BH25
1801214-13 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/19/18 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	240	1.0	ug/l	1	1801221	01/21/18	01/21/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/19/18 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		119 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		102 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	45-146		"	"	"	"	

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Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/23/18 16:21

BH26
1801214-14 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/19/18 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1801221	01/21/18	01/21/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/19/18 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		95.6 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	45-146		"	"	"	"	

Summit Scientific

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6899 Pecos Street
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Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/23/18 16:21

BH27
1801214-15 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/19/18 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1801221	01/21/18	01/21/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/19/18 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		95.8 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	45-146		"	"	"	"	

Summit Scientific

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6899 Pecos Street
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Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/23/18 16:21

BH28
1801214-16 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/19/18 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1801221	01/21/18	01/21/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/19/18 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		98.3 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	45-146		"	"	"	"	

Summit Scientific

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6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/23/18 16:21

BH29
1801214-17 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/19/18 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1801221	01/21/18	01/21/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/19/18 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.8 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	45-146		"	"	"	"	

Summit Scientific

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6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/23/18 16:21

BH30
1801214-18 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/19/18 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1801221	01/21/18	01/21/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/19/18 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		112 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.7 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	45-146		"	"	"	"	

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/23/18 16:21

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 1801221 - EPA 5030 Water MS

Blank (1801221-BLK1)

Prepared & Analyzed: 01/21/18

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.4		"	13.3		101	37-154			
Surrogate: Toluene-d8	13.1		"	13.3		98.3	45-149			
Surrogate: 4-Bromofluorobenzene	13.9		"	13.3		104	45-146			

LCS (1801221-BS1)

Prepared & Analyzed: 01/21/18

Benzene	37.6	1.0	ug/l	33.3		113	51-132			
Toluene	38.3	1.0	"	33.3		115	51-138			
Ethylbenzene	40.9	1.0	"	33.1		124	58-146			
m,p-Xylene	78.9	2.0	"	66.5		119	57-144			
o-Xylene	38.8	1.0	"	32.7		119	53-146			
Surrogate: 1,2-Dichloroethane-d4	14.6		"	13.3		110	37-154			
Surrogate: Toluene-d8	13.2		"	13.3		99.2	45-149			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		100	45-146			

Matrix Spike (1801221-MS1)

Source: 1801214-01

Prepared & Analyzed: 01/21/18

Benzene	74.0	1.0	ug/l	33.3	40.4	101	34-141			
Toluene	39.0	1.0	"	33.3	ND	117	27-151			
Ethylbenzene	42.3	1.0	"	33.1	ND	128	29-160			
m,p-Xylene	81.6	2.0	"	66.5	ND	123	20-166			
o-Xylene	39.5	1.0	"	32.7	ND	121	33-159			
Surrogate: 1,2-Dichloroethane-d4	16.0		"	13.3		120	37-154			
Surrogate: Toluene-d8	13.3		"	13.3		100	45-149			
Surrogate: 4-Bromofluorobenzene	13.5		"	13.3		101	45-146			

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/23/18 16:21

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 1801221 - EPA 5030 Water MS

Matrix Spike Dup (1801221-MSD1)	Source: 1801214-01			Prepared & Analyzed: 01/21/18						
Benzene	77.4	1.0	ug/l	33.3	40.4	111	34-141	4.52	32	
Toluene	39.5	1.0	"	33.3	ND	119	27-151	1.22	25	
Ethylbenzene	42.8	1.0	"	33.1	ND	130	29-160	1.17	50	
m,p-Xylene	82.4	2.0	"	66.5	ND	124	20-166	1.01	36	
o-Xylene	40.4	1.0	"	32.7	ND	124	33-159	2.03	26	
Surrogate: 1,2-Dichloroethane-d4	15.7		"	13.3		118	37-154			
Surrogate: Toluene-d8	13.1		"	13.3		98.2	45-149			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.2	45-146			

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/23/18 16:21

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