

FOURTH QUARTER 2018

Mosier 23-12F

COGCC SPILL TRACKING # 448998
COGCC REMEDIATION # 10158

Prepared for:



2115 117th Avenue
Greeley, CO 80631

Prepared by:



6899 North Pecos Street, Unit C
Denver, CO 80221

TABLE 1
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - MOSIER 23-12F

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
BH13	04/18/18	55	<1.0	<1.0	<2.0
BH13	07/09/18	6	<1.0	<1.0	<2.0
BH13	10/05/18	1.1	<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
BH14	04/18/18	18	<1.0	<1.0	<2.0
BH14	07/09/18	4.5	<1.0	<1.0	<2.0
BH14	10/05/18	2.3	<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
BH15	04/18/18	7,100	3,000	490	5,900
BH15	07/09/18	11,000	520	710	7,200
BH15	10/05/18	6,000	66	16	4,900
BH16	10/20/17	1,600	1.6	9.9	<2.0
BH16	01/19/18	1,400	<1.0	7.3	<2.0
BH16	04/18/18	980	<1.0	<1.0	<2.0
BH16	07/09/18	900	<1.0	<1.0	<2.0
BH16	10/05/18	10	<1.0	<1.0	<2.0
BH17	10/20/17	150	<1.0	<1.0	<2.0
BH17	01/19/18	270	1.2	1.2	2.2
BH17	04/18/18	210	<1.0	<1.0	<2.0
BH17	07/09/18	120	<1.0	<1.0	<2.0
BH17	10/05/18	36	<1.0	<1.0	<2.0
BH18	10/20/17	<1.0	<1.0	<1.0	640
BH18	01/19/18	990	15	67	1,700
BH18	04/18/18	530	1.1	2.0	21
BH18	07/09/18	110	<1.0	8.1	66
BH18	10/05/18	19	<1.0	1.5	16
BH19	10/20/17	51	<1.0	<1.0	460
BH19	01/19/18	470	990	32	560

TABLE 1
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - MOSIER 23-12F

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Standard		5	560	700	1,400
BH19	04/18/18	87	340	9.8	170
BH19	07/09/18	51	63	4.5	62
BH19	10/05/18	41	69	3.3	57
BH20	10/20/17	<1.0	<1.0	<1.0	<2.0
BH20	01/19/18	<1.0	<1.0	<1.0	<2.0
BH20	04/18/18	<1.0	<1.0	<1.0	<2.0
BH20	07/09/18	<1.0	<1.0	<1.0	<2.0
BH20	10/05/18	<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
BH21	04/18/18	27	<1.0	<1.0	<2.0
BH21	07/09/18	7.4	<1.0	<1.0	<2.0
BH21	10/05/18	<1.0	<1.0	<1.0	<2.0
BH22	12/18/17	6800	15,000	510	8,000
BH22	01/19/18	5,100	8,400	320	4,500
BH22	04/18/18	5,900	7,000	340	4,200
BH22	07/09/18	2,100	1,900	110	6,000
BH22	10/05/18	25	18	1.2	13
BH23	12/18/17	510	4.2	<1.0	3.7
BH23	01/19/18	310	<1.0	210	420
BH23	04/18/18	21	3.8	<1.0	3.6
BH23	07/09/18	12	<1.0	<1.0	<2.0
BH23	10/05/18	1.0	1.4	<1.0	<2.0
BH24	12/18/17	<1.0	<1.0	<1.0	<2.0
BH24	01/19/18	<1.0	<1.0	<1.0	<2.0
BH24	04/18/18	<1.0	<1.0	<1.0	<2.0
BH24	07/09/18	<1.0	<1.0	<1.0	<2.0
BH24	10/05/18	<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
BH25	04/18/18	1,100	<1.0	<1.0	<2.0
BH25	07/09/18	3,800	<1.0	<1.0	13
BH25	10/05/18	3,800	1.1	<1.0	52
BH26	01/19/18	<1.0	<1.0	<1.0	<2.0
BH26	04/18/18	<1.0	<1.0	<1.0	<2.0
BH26	07/09/18	1.0	<1.0	<1.0	<2.0
BH26	10/05/18	<1.0	<1.0	<1.0	<2.0
BH27	01/19/18	<1.0	<1.0	<1.0	<2.0
BH27	04/18/18	14	<1.0	<1.0	<2.0
BH27	07/09/18	<1.0	<1.0	<1.0	<2.0
BH27	10/05/18	<1.0	<1.0	<1.0	<2.0
BH28	01/19/18	<1.0	<1.0	<1.0	<2.0

TABLE 1
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - MOSIER 23-12F

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Standard		5	560	700	1,400
BH28	04/18/18	<1.0	<1.0	<1.0	<2.0
BH28	07/09/18	<1.0	<1.0	<1.0	<2.0
BH28	10/05/18	<1.0	<1.0	<1.0	<2.0
BH29	01/19/18	<1.0	<1.0	<1.0	<2.0
BH29	04/18/18	<1.0	<1.0	<1.0	<2.0
BH29	07/09/18	<1.0	<1.0	<1.0	<2.0
BH29	10/05/18	<1.0	<1.0	<1.0	<2.0
BH30	01/19/18	<1.0	<1.0	<1.0	<2.0
BH30	04/18/18	<1.0	<1.0	<1.0	<2.0
BH30	07/09/18	<1.0	<1.0	<1.0	<2.0
BH30	10/05/18	<1.0	<1.0	<1.0	<2.0
BH31	07/09/18	<1.0	<1.0	<1.0	<2.0
BH31	10/05/18	<1.0	<1.0	<1.0	<2.0
BH32	07/09/18	<1.0	<1.0	<1.0	<2.0
BH32	10/05/18	<1.0	<1.0	<1.0	<2.0
BH33	07/09/18	<1.0	<1.0	<1.0	<2.0
BH33	10/05/18	<1.0	<1.0	<1.0	<2.0

Notes:

COGCC = Colorado Oil and Gas Conservation Commission

µg/L = Micrograms per liter

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

Groundwater standards referenced from COGCC Table 910-1

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

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

TABLE 2
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - MOSIER 23-12F

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
BH13	04/18/18	4729.82	11.23	8.95	ND	ND	4720.87
BH13	07/09/18	4729.82	11.32	8.28	ND	ND	4721.54
BH13	10/05/18	4729.82	11.31	7.75	ND	ND	4722.07
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
BH14	04/18/18	4729.82	14.63	8.94	ND	ND	4720.88
BH14	07/09/18	4729.82	14.48	8.28	ND	ND	4721.54
BH14	10/05/18	4729.82	14.44	7.70	ND	ND	4722.12
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
BH15	04/18/18	4730.14	11.22	9.37	ND	ND	4720.77
BH15	07/09/18	4730.14	11.26	8.69	ND	ND	4721.45
BH15	10/05/18	4730.14	11.24	8.16	ND	ND	4721.98
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
BH16	04/18/18	4729.88	11.14	9.15	ND	ND	4720.73
BH16	07/09/18	4729.88	11.30	8.46	ND	ND	4721.42
BH16	10/05/18	4729.88	11.27	7.92	ND	ND	4721.96
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
BH17	04/18/18	4729.71	11.20	8.98	ND	ND	4720.73
BH17	07/09/18	4729.71	11.23	8.27	ND	ND	4721.44
BH17	10/05/18	4729.71	11.21	7.74	ND	ND	4721.97
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
BH18	04/18/18	4729.50	11.39	8.70	ND	ND	4720.80
BH18	07/09/18	4729.50	11.53	8.03	ND	ND	4721.47
BH18	10/05/18	4729.50	11.50	7.48	ND	ND	4722.02
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

TABLE 2
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - MOSIER 23-12F

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)
BH19	04/18/18	4729.73	11.35	8.88	ND	ND	4720.85
BH19	07/09/18	4729.73	11.60	8.19	ND	ND	4721.54
BH19	10/05/18	4729.73	11.58	7.66	ND	ND	4722.07
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
BH20	04/18/18	4731.78	13.43	10.92	ND	ND	4720.86
BH20	07/09/18	4731.78	13.64	10.23	ND	ND	4721.55
BH20	10/05/18	4731.78	13.63	9.69	ND	ND	4722.09
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
BH21	04/18/18	4730.34	14.18	9.66	ND	ND	4720.68
BH21	07/09/18	4730.34	14.19	9.96	ND	ND	4720.38
BH21	10/05/18	4730.34	14.18	8.42	ND	ND	4721.92
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
BH22	04/18/18	4729.78	15.35	9.09	ND	ND	4720.69
BH22	07/09/18	4729.78	15.32	8.38	ND	ND	4721.40
BH22	10/05/18	4729.78	15.29	7.84	ND	ND	4721.94
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
BH23	04/18/18	4732.23	18.73	11.57	ND	ND	4720.66
BH23	07/09/18	4732.23	18.65	10.88	ND	ND	4721.35
BH23	10/05/18	4732.23	18.63	10.32	ND	ND	4721.91
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
BH24	04/18/18	4732.40	17.76	11.69	ND	ND	4720.71
BH24	07/09/18	4732.40	17.55	10.98	ND	ND	4721.42
BH24	10/05/18	4732.40	17.50	10.45	ND	ND	4721.95
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
BH25	04/18/18	4732.80	18.79	12.16	ND	ND	4720.64
BH25	07/09/18	4732.80	18.78	11.46	ND	ND	4721.34
BH25	10/05/18	4732.80	18.82	10.92	ND	ND	4721.88
BH26	01/19/18	4729.59	15.41	7.40	ND	ND	4722.19
BH26	04/18/18	4729.59	15.36	8.99	ND	ND	4720.60
BH26	07/09/18	4729.59	10.99	8.27	ND	ND	4721.32
BH26	10/05/18	4729.59	15.15	7.73	ND	ND	4721.86
BH27	01/19/18	4730.27	14.42	8.12	ND	ND	4722.15
BH27	04/18/18	4730.27	14.40	9.71	ND	ND	4720.56
BH27	07/09/18	4730.27	14.39	8.99	ND	ND	4721.28
BH27	10/05/18	4730.27	14.34	8.45	ND	ND	4721.82
BH28	01/19/18	4731.71	14.01	9.64	ND	ND	4722.07

TABLE 2
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - MOSIER 23-12F

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)
BH28	04/18/18	4731.71	14.59	11.17	ND	ND	4720.54
BH28	07/09/18	4731.71	14.62	10.47	ND	ND	4721.24
BH28	10/05/18	4731.71	14.59	9.92	ND	ND	4721.79
BH29	01/19/18	4732.48	14.69	10.41	ND	ND	4722.07
BH29	04/18/18	4732.48	14.66	11.91	ND	ND	4720.57
BH29	07/09/18	4732.48	14.74	11.18	ND	ND	4721.30
BH29	10/05/18	4732.48	14.70	10.65	ND	ND	4721.83
BH30	01/19/18	4732.25	14.46	10.07	ND	ND	4722.18
BH30	04/18/18	4732.25	14.41	11.59	ND	ND	4720.66
BH30	07/09/18	4732.25	14.49	10.87	ND	ND	4721.38
BH30	10/05/18	4732.25	14.48	10.35	ND	ND	4721.90
BH31	07/09/18	4732.56	17.67	10.94	ND	ND	4721.62
BH31	10/05/18	4732.56	17.60	10.41	ND	ND	4722.15
BH32	07/09/18	4732.49	17.81	10.93	ND	ND	4721.56
BH32	10/05/18	4732.49	17.77	10.41	ND	ND	4722.08
BH33	07/09/18	4730.34	15.49	8.88	ND	ND	4721.46
BH33	10/05/18	4730.34	15.44	8.35	ND	ND	4721.99

NOTES:

ft. = Feet

AMSL = Above mean sea level

BTOC = Below top of casing

LNAPL = Light non-aqueous phase liquid

ND = Not Detected

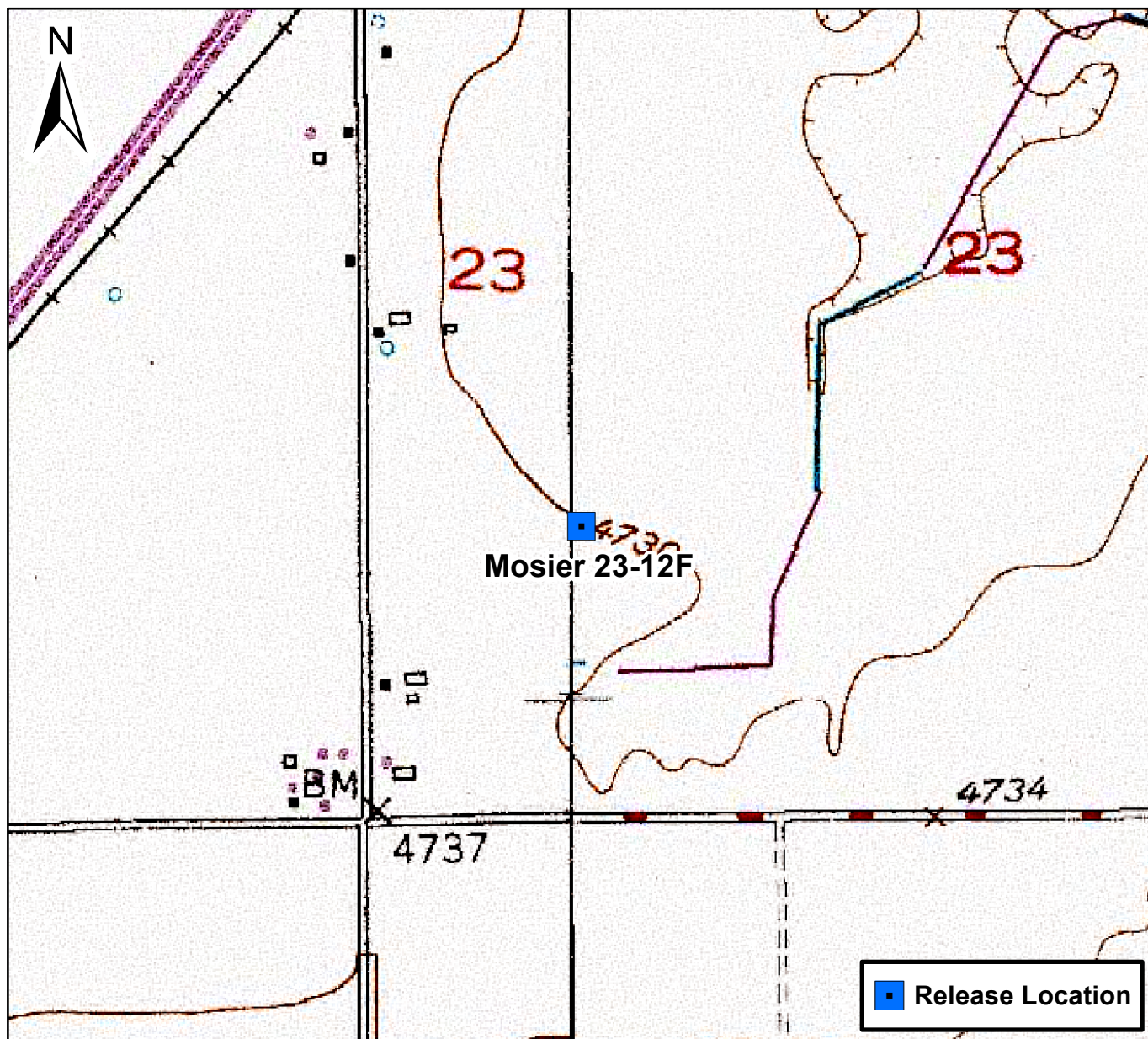
NM = Not Measured

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

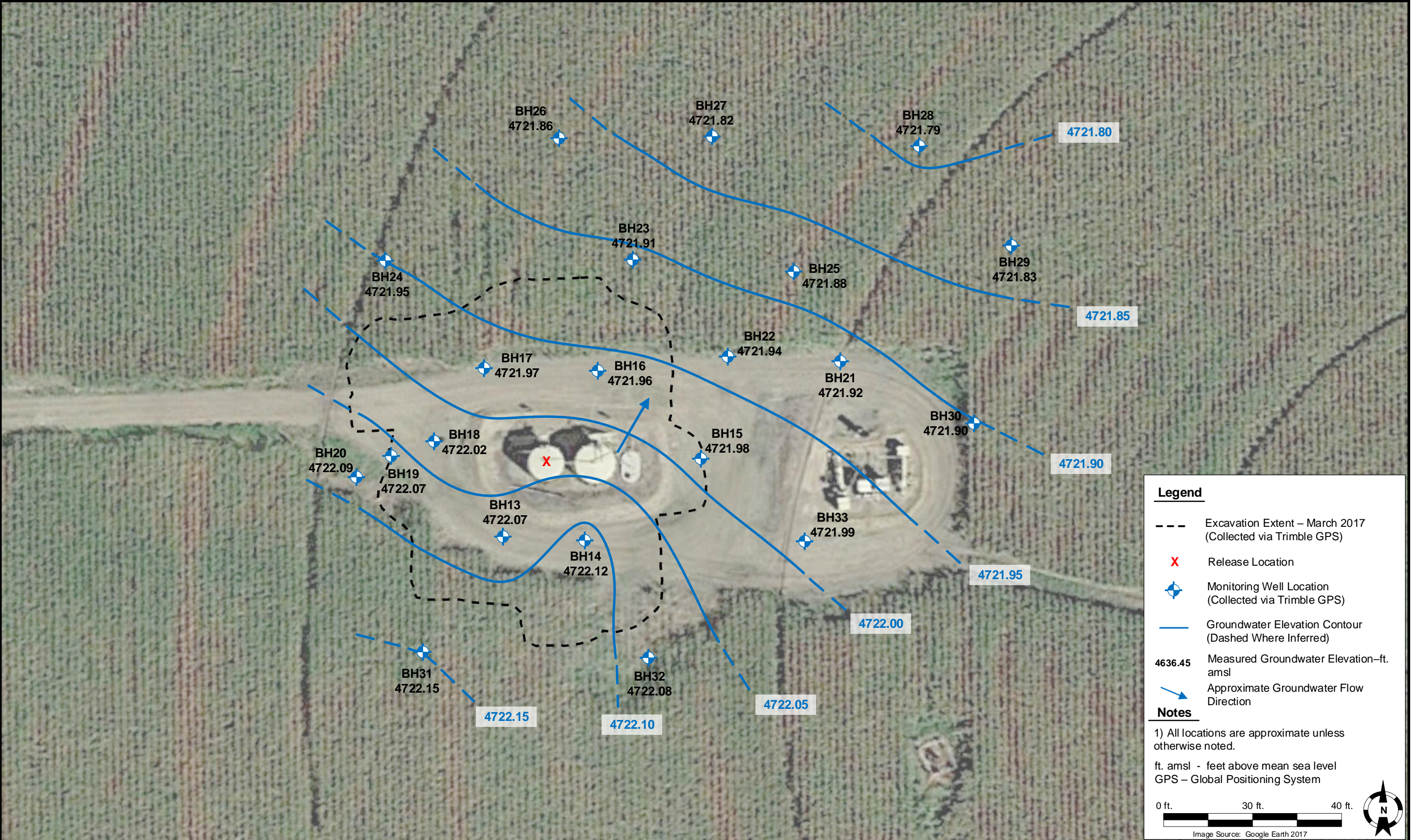
Figure 1

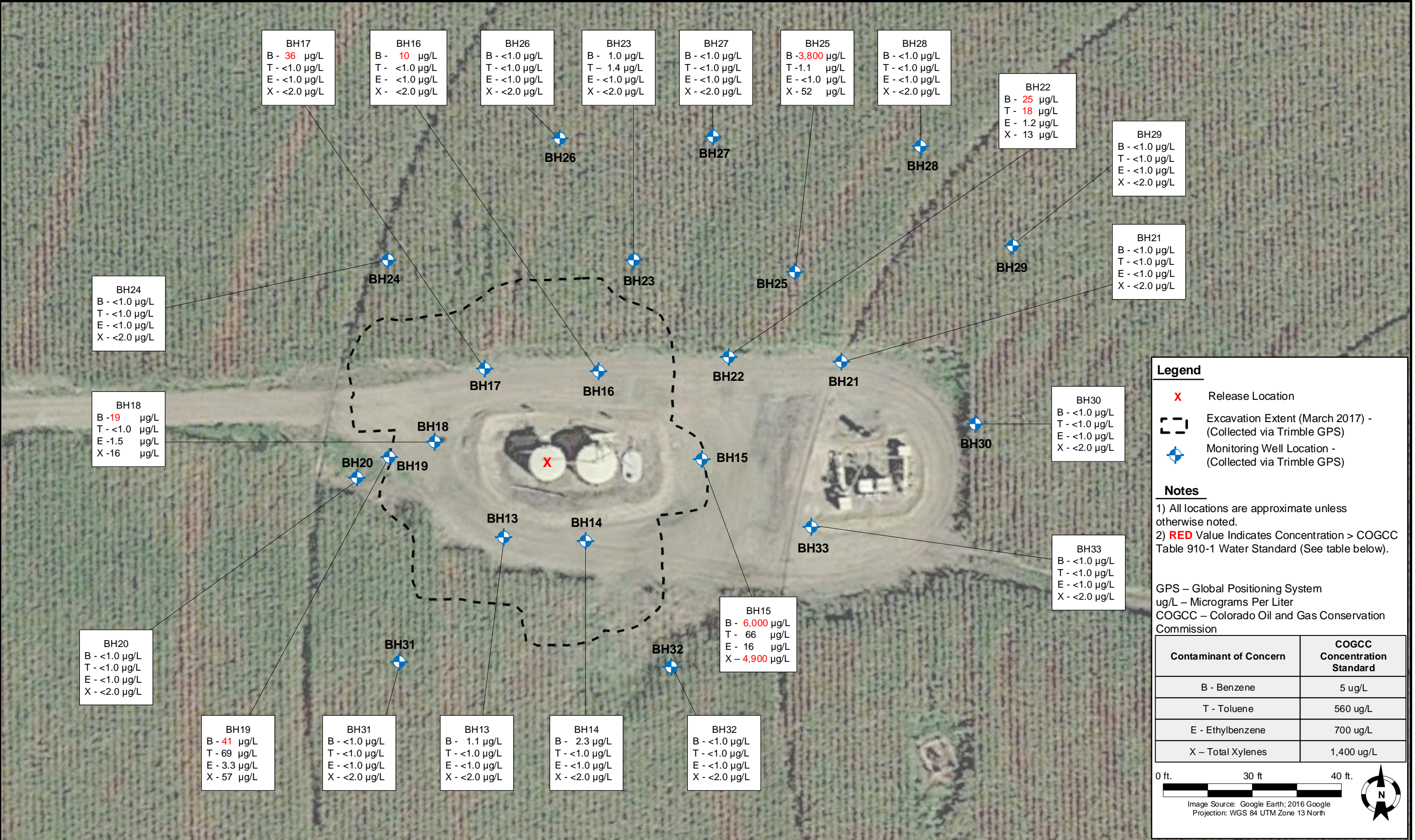
Site Location Map
Mosier 23-12F
NWSW S23 T4N R66W
Weld County, Colorado





DATE: 08/21/2018	 TASMAN GEOSCIENCES	Tasman Geosciences, Inc. 6899 Pecos Street – Unit C Denver, CO 80221	Noble Energy, Inc. – DJ Basin Mosier 23-12F NWSW, Section 23, Township 4 North, Range 66 West Weld County, Colorado	Site Overview Map	FIGURE 2
DESIGNED BY: DA					
DRAWN BY: TL					





DATE:	11/13/2018
DESIGNED BY:	B. Bruns
DRAWN BY:	J. Whitenour



TASMAN
GEOSCIENCES

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

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

Groundwater Analytical
Results Figure
(10/05/18)

FIGURE
4

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 12, 2018

Brandon Bruns

Tasman Geosciences

6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - Mosier 23-12F

Enclosed are the results of analyses for samples received by Summit Scientific on 10/05/18 18:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premier", is displayed on a light purple rectangular background.

Muri Premier For Ben Shrewsbury

Laboratory Manager



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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/18 16:57

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH13	1810099-01	Water	10/05/18 12:26	10/05/18 18:40
BH14	1810099-02	Water	10/05/18 12:23	10/05/18 18:40
BH15	1810099-03	Water	10/05/18 13:17	10/05/18 18:40
BH16	1810099-04	Water	10/05/18 12:59	10/05/18 18:40
BH17	1810099-05	Water	10/05/18 12:45	10/05/18 18:40
BH18	1810099-06	Water	10/05/18 12:50	10/05/18 18:40
BH19	1810099-07	Water	10/05/18 12:38	10/05/18 18:40
BH20	1810099-08	Water	10/05/18 12:20	10/05/18 18:40
BH21	1810099-09	Water	10/05/18 12:56	10/05/18 18:40
BH22	1810099-10	Water	10/05/18 13:13	10/05/18 18:40
BH23	1810099-11	Water	10/05/18 12:35	10/05/18 18:40
BH24	1810099-12	Water	10/05/18 11:29	10/05/18 18:40
BH25	1810099-13	Water	10/05/18 13:07	10/05/18 18:40
BH26	1810099-14	Water	10/05/18 11:41	10/05/18 18:40
BH27	1810099-15	Water	10/05/18 11:52	10/05/18 18:40
BH28	1810099-16	Water	10/05/18 12:02	10/05/18 18:40
BH29	1810099-17	Water	10/05/18 11:36	10/05/18 18:40
BH30	1810099-18	Water	10/05/18 11:23	10/05/18 18:40
BH31	1810099-19	Water	10/05/18 12:09	10/05/18 18:40
BH32	1810099-20	Water	10/05/18 11:58	10/05/18 18:40
BH33	1810099-21	Water	10/05/18 11:47	10/05/18 18:40

Summit Scientific

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

Summit Scientific

1810099.1

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

Page 1 of 3

Client: Noble/Tasman
Address: -
City/State/Zip: -
Phone: 303-487-1228 Fax: -
Sampler Name: Alison Dahl, Brian Gabel

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	10/5/2018	1220	3	X				X					X								
BH14		1223		X																	
BH15		1317				X															
BH16		1259		X																	
BH17		1245																			
BH18		1250																			
BH19		1238																			
BH20		1220																			
BH21		1256																			
BH22		1313																			

Relinquished by: <u>UP</u>	Date/Time: <u>10.5.18</u> <u>1840</u>	Received by: <u>[Signature]</u>	Date/Time: <u>10.5.18</u> <u>1840</u>	Turn Around Time (Check) Same Day <input type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/>	72 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/>	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:			
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:			

Sample Integrity: Temperature Upon Receipt: <u>6.3</u> Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--

Summit Scientific

1810099.2


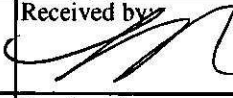
741 Corporate Circle Suite I ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933 Fax

Page 2 of 3

Client: Noble/Tasman
Address: _____
City/State/Zip: _____
Phone: 303-487-1228 Fax: _____
Sampler Name: Alien Dahl, Brian Gabel

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							
BH23	10/5/08	1235	3			X		X					X									
BH24		1129		X																		
BH25		1307																				
BH26		1141																				
BH27		1152																				
BH28		1202																				
BH29		1136																				
BH30		1123																				
BH31		1209																				
BH32		1158																				

Relinquished by: 	Date/Time: <u>10.5.18</u> <u>1840</u>	Received by: 	Date/Time: <u>10.5.18</u> <u>1840</u>	Turn Around Time (Check)	Notes:
				Same Day <input type="checkbox"/>	72 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/>
				24 Hours <input type="checkbox"/>	
				48 Hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	Temperature Upon Receipt: <u>6.3</u>	
				Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Summit Scientific

1810099.3

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

Page 3 of 3

Client: Noble/Tasman
Address: -
City/State/Zip: -
Phone: 303-487-1228 Fax: -
Sampler Name: Alison Dahl, Brian Gabel

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																				
BH 33	10/5/2018	1147	3	X				X				X																							
Relinquished by:				Date/Time: 10.5.18 1840		Received by:				Date/Time: 10.5.18 1840		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:				Date/Time:		Received by:				Date/Time:		Sample Integrity: Temperature Upon Receipt: <u>6.3</u> Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																							
Relinquished by:				Date/Time:		Received in Lab by:				Date/Time:																									

Sample Receipt Checklist

S2 Work Order 1810099

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

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

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

Temp (°C)	<u>6.3</u>
-----------	------------

Thermometer ID: 61857155-K

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

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

UP
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

10.5.18 1840
Date/Time



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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/18 16:57

BH13
1810099-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/18 12:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	1.1	1.0		ug/l	1	1810109	10/08/18	10/08/18	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **10/05/18 12:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		111 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		94.2 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.4 %		21-167		"	"	"	"	

Summit Scientific

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



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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/18 16:57

BH14
1810099-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/18 12:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	2.3	1.0	ug/l	1	1810109	10/08/18	10/08/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **10/05/18 12:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.7 %	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 St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/18 16:57

BH15
1810099-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/18 13:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	6000	100		ug/l	100	1810109	10/08/18	10/08/18	EPA 8260B	
Toluene	66	1.0		"	1	"	"	"	"	
Ethylbenzene	16	1.0		"	"	"	"	"	"	
Xylenes (total)	4900	200		"	100	"	"	"	"	

Date Sampled: **10/05/18 13:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		101 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		97.6 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.5 %		21-167		"	"	"	"	

Summit Scientific

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



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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/18 16:57

BH16
1810099-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/18 12:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	10	1.0		ug/l	1	1810109	10/08/18	10/08/18	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **10/05/18 12:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		99.8 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		98.5 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.2 %		21-167		"	"	"	"	

Summit Scientific

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



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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/18 16:57

BH17
1810099-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/18 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	36	1.0	ug/l	1	1810109	10/08/18	10/09/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **10/05/18 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.5 %	21-167		"	"	"	"	

Summit Scientific

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



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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/18 16:57

BH18
1810099-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/18 12:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	19	1.0	ug/l	1	1810109	10/08/18	10/09/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	1.5	1.0	"	"	"	"	"	"	
Xylenes (total)	16	2.0	"	"	"	"	"	"	

Date Sampled: **10/05/18 12:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		98.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.0 %	21-167		"	"	"	"	

Summit Scientific

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



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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/18 16:57

BH19
1810099-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/18 12:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	41	1.0	ug/l	1	1810109	10/08/18	10/09/18	EPA 8260B	
Toluene	69	1.0	"	"	"	"	"	"	
Ethylbenzene	3.3	1.0	"	"	"	"	"	"	
Xylenes (total)	57	2.0	"	"	"	"	"	"	

Date Sampled: **10/05/18 12:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.3 %	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 St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/18 16:57

BH20
1810099-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/18 12:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1810109	10/08/18	10/09/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **10/05/18 12:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.1 %	21-167		"	"	"	"	

Summit Scientific

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



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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Brun

Reported:
10/12/18 16:57

BH21
1810099-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/18 12:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1810109	10/08/18	10/09/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **10/05/18 12:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.6 %	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 St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/18 16:57

BH22
1810099-10 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/18 13:13**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	25	1.0	ug/l	1	1810109	10/08/18	10/09/18	EPA 8260B	
Toluene	18	1.0	"	"	"	"	"	"	
Ethylbenzene	1.2	1.0	"	"	"	"	"	"	
Xylenes (total)	13	2.0	"	"	"	"	"	"	

Date Sampled: **10/05/18 13:13**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.5 %	21-167		"	"	"	"	

Summit Scientific

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



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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/18 16:57

BH23
1810099-11 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/18 12:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	1.0	1.0		ug/l	1	1810109	10/08/18	10/09/18	EPA 8260B	
Toluene	1.4	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **10/05/18 12:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		104 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		97.2 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.3 %		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 St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/18 16:57

BH24
1810099-12 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/18 11:29**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1810109	10/08/18	10/09/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **10/05/18 11:29**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.7 %	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 St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/18 16:57

BH25
1810099-13 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/18 13:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	3800	100		ug/l	100	1810109	10/08/18	10/09/18	EPA 8260B	
Toluene	1.1	1.0		"	1	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	52	2.0		"	"	"	"	"	"	

Date Sampled: **10/05/18 13:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		102 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		98.8 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.1 %		21-167		"	"	"	"	

Summit Scientific

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



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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/18 16:57

BH26
1810099-14 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/18 11:41**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1810109	10/08/18	10/09/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **10/05/18 11:41**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.6 %	21-167		"	"	"	"	

Summit Scientific

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



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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/18 16:57

BH27
1810099-15 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/18 11:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1810109	10/08/18	10/09/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **10/05/18 11:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.9 %	21-167		"	"	"	"	

Summit Scientific

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



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

Project: Noble - Mosier 23-12F

Project Number: [none]

Project Manager: Brandon Bruns

Reported:
10/12/18 16:57

BH28
1810099-16 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/18 12:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1810109	10/08/18	10/09/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **10/05/18 12:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.9 %	21-167		"	"	"	"	

Summit Scientific

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



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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/18 16:57

BH29
1810099-17 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/18 11:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1810109	10/08/18	10/09/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **10/05/18 11:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.6 %	21-167		"	"	"	"	

Summit Scientific

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



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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/18 16:57

BH30
1810099-18 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/18 11:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1810109	10/08/18	10/09/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **10/05/18 11:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.1 %	21-167		"	"	"	"	

Summit Scientific

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



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

Project: Noble - Mosier 23-12F

Project Number: [none]

Project Manager: Brandon Bruns

Reported:
10/12/18 16:57

BH31
1810099-19 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/18 12:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1810109	10/08/18	10/09/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **10/05/18 12:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.6 %	21-167		"	"	"	"	

Summit Scientific

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



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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/18 16:57

BH32
1810099-20 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/18 11:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1810109	10/08/18	10/09/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **10/05/18 11:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		117 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.9 %	21-167		"	"	"	"	

Summit Scientific

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



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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/18 16:57

BH33
1810099-21 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/18 11:47**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1810109	10/08/18	10/09/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **10/05/18 11:47**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		118 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.1 %	21-167		"	"	"	"	

Summit Scientific

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



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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/18 16:57

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1810109 - EPA 5030 Water MS

Blank (1810109-BLK1)

Prepared & Analyzed: 10/08/18

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.5		"	13.2		102	23-173			
Surrogate: Toluene-d8	12.6		"	13.3		94.7	20-170			
Surrogate: 4-Bromofluorobenzene	12.5		"	13.3		93.9	21-167			

LCS (1810109-BS1)

Prepared & Analyzed: 10/08/18

Benzene	28.0	1.0	ug/l	33.3		84.0	70-130			
Toluene	30.5	1.0	"	33.3		91.4	70-130			
Ethylbenzene	30.3	1.0	"	33.3		90.9	70-130			
m,p-Xylene	57.3	2.0	"	66.7		85.9	70-130			
o-Xylene	29.0	1.0	"	33.3		87.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.1		"	13.2		98.9	23-173			
Surrogate: Toluene-d8	13.9		"	13.3		104	20-170			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.8	21-167			

Matrix Spike (1810109-MS1)

Source: 1810099-01

Prepared & Analyzed: 10/08/18

Benzene	31.0	1.0	ug/l	33.3	1.11	89.7	70-130			
Toluene	32.4	1.0	"	33.3	ND	97.1	70-130			
Ethylbenzene	34.0	1.0	"	33.3	ND	102	70-130			
m,p-Xylene	64.4	2.0	"	66.7	ND	96.6	70-130			
o-Xylene	32.2	1.0	"	33.3	ND	96.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	14.1		"	13.2		107	23-173			
Surrogate: Toluene-d8	13.3		"	13.3		99.5	20-170			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.0	21-167			

Summit Scientific

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



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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/18 16:57

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

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

Batch 1810109 - EPA 5030 Water MS

Matrix Spike Dup (1810109-MSD1)	Source: 1810099-01			Prepared & Analyzed: 10/08/18						
Benzene	30.0	1.0	ug/l	33.3	1.11	86.6	70-130	3.41	30	
Toluene	31.7	1.0	"	33.3	ND	95.2	70-130	1.94	30	
Ethylbenzene	34.1	1.0	"	33.3	ND	102	70-130	0.265	30	
m,p-Xylene	63.7	2.0	"	66.7	ND	95.6	70-130	1.06	30	
o-Xylene	32.0	1.0	"	33.3	ND	96.2	70-130	0.312	30	
Surrogate: 1,2-Dichloroethane-d4	14.0		"	13.2		106	23-173			
Surrogate: Toluene-d8	12.9		"	13.3		96.5	20-170			
Surrogate: 4-Bromofluorobenzene	12.5		"	13.3		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 St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/18 16:57

Notes and Definitions

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