

FIRST QUARTER 2019 SITE MONITORING DATA 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
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TABLE 1
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
BH13	01/03/19	4729.82	11.28	9.07	ND	ND	4720.75
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
BH14	01/03/19	4729.82	14.44	9.08	ND	ND	4720.74
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
BH15	01/03/19	4730.14	11.23	9.52	ND	ND	4720.62
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
BH16	01/03/19	4729.88	11.26	9.27	ND	ND	4720.61
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
BH17	01/03/19	4729.71	11.21	9.09	ND	ND	4720.62
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

TABLE 1
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)
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
BH18	01/03/19	4729.50	11.55	8.83	ND	ND	4720.67
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
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
BH19	01/03/19	4729.73	11.58	8.99	ND	ND	4720.74
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
BH20	01/03/19	4731.78	13.64	11.02	ND	ND	4720.76
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
BH21	01/03/19	4730.34	14.10	9.82	ND	ND	4720.52
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
BH22	01/03/19	4729.78	15.27	9.22	ND	ND	4720.56
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
BH23	01/03/19	4732.23	18.55	11.69	ND	ND	4720.54
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
BH24	01/03/19	4732.40	17.52	11.80	ND	ND	4720.60
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

TABLE 1
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)
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
BH25	01/03/19	4732.80	18.80	12.32	ND	ND	4720.48
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
BH26	01/03/19	4729.59	15.15	9.10	ND	ND	4720.49
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
BH27	01/03/19	4730.27	14.33	9.84	ND	ND	4720.43
BH28	01/19/18	4731.71	14.01	9.64	ND	ND	4722.07
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
BH28	01/03/19	4731.71	14.57	11.35	ND	ND	4720.36
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
BH29	01/03/19	4732.48	14.69	12.08	ND	ND	4720.40
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	4721.9
BH30	01/03/19	4732.25	14.42	11.78	ND	ND	4720.47
BH31	07/09/18	4732.56	17.67	10.94	ND	ND	4721.62
BH31	10/05/18	4732.56	17.6	10.41	ND	ND	4722.15
BH31	01/03/19	4732.56	17.58	11.73	ND	ND	4720.83
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
BH32	01/03/19	4732.49	17.75	11.75	ND	ND	4720.74
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
BH33	01/03/19	4730.34	15.35	9.72	ND	ND	4720.62

NOTES:

ft. = Feet

AMSL = Above mean sea level

TABLE 1
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)
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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

TABLE 2
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	<1.0	<1.0	<2.0
BH13	01/03/19	<1.0	<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
BH14	01/03/19	1.4	<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
BH15	01/03/19	15,000	2,200	21,000	7,600
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
BH16	01/03/19	420	<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
BH17	01/03/19	9.5	1.2	<1.0	<2.0
BH18	10/20/17	<1.0	<1.0	<1.0	640
BH18	01/19/18	990	15	67	1,700

TABLE 2
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
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
BH18	01/03/19	38	<1.0	<1.0	5.2
BH19	10/20/17	51	<1.0	<1.0	460
BH19	01/19/18	470	990	32	560
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
BH19	01/03/19	130	80	8.1	130
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
BH20	01/03/19	<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
BH21	01/03/19	2.8	<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
BH22	01/03/19	9,800	7,400	99	830
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
BH23	01/03/19	<1.0	<1.0	<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
BH24	01/03/19	<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

TABLE 2
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
BH25	07/09/18	3,800	<1.0	<1.0	13
BH25	10/05/18	3,800	1.1	<1.0	52
BH25	01/03/19	3,900	<1.0	860	7,600
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
BH26	01/03/19	<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
BH27	01/03/19	<1.0	<1.0	<1.0	<2.0
BH28	01/19/18	<1.0	<1.0	<1.0	<2.0
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
BH28	01/03/19	3.2	<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
BH29	01/03/19	<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
BH30	01/03/19	<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
BH31	01/03/19	<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
BH32	01/03/19	<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
BH33	01/03/19	<1.0	<1.0	<1.0	<2.0

TABLE 2
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

Notes:

COGCC = Colorado Oil and Gas Conservation Commission

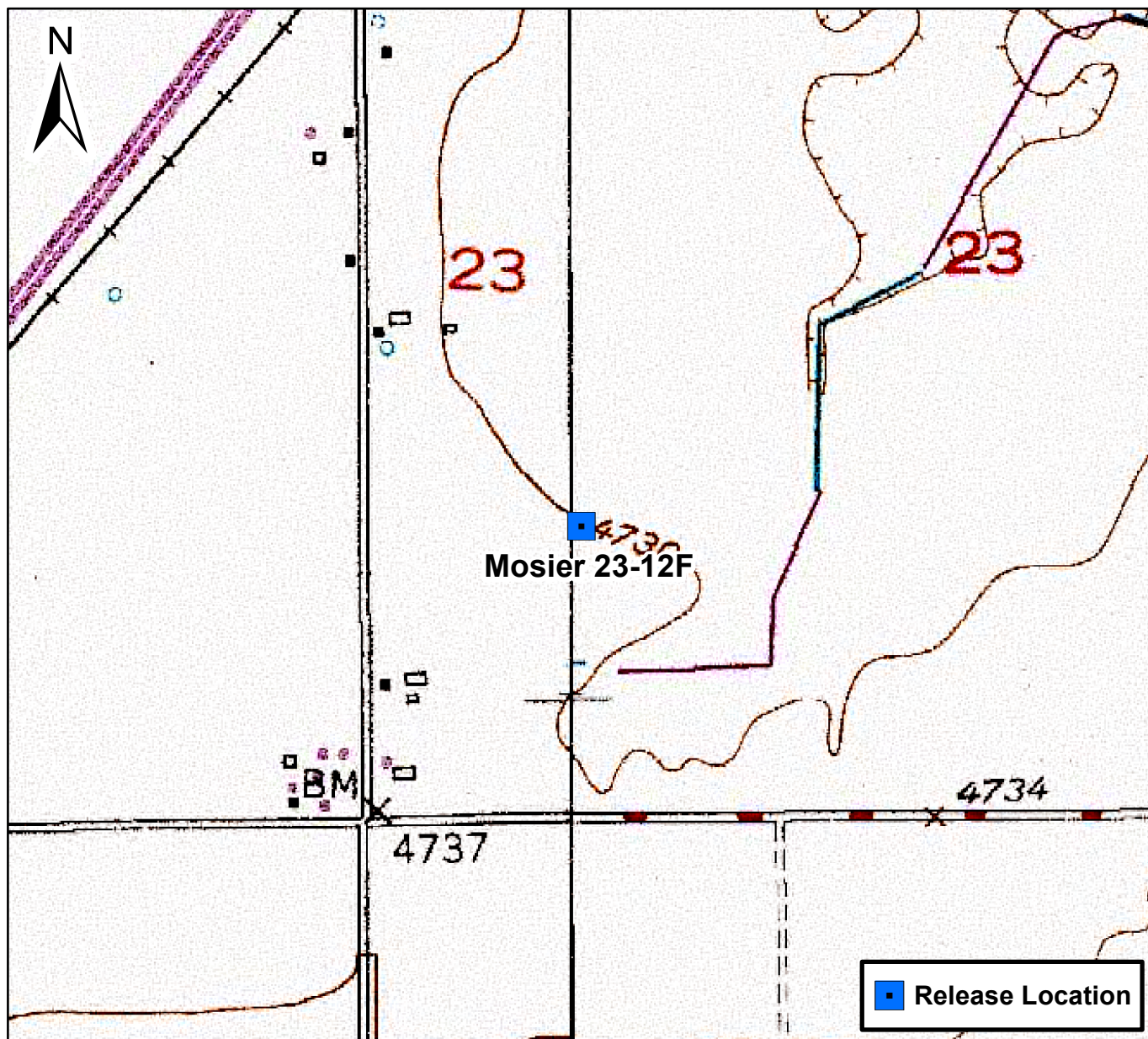
µg/L = Micrograms per liter

< = 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.



0 750 1,500 Feet

Figure 1

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





DATE:	08/21/2018
DESIGNED BY:	DA
DRAWN BY:	TL



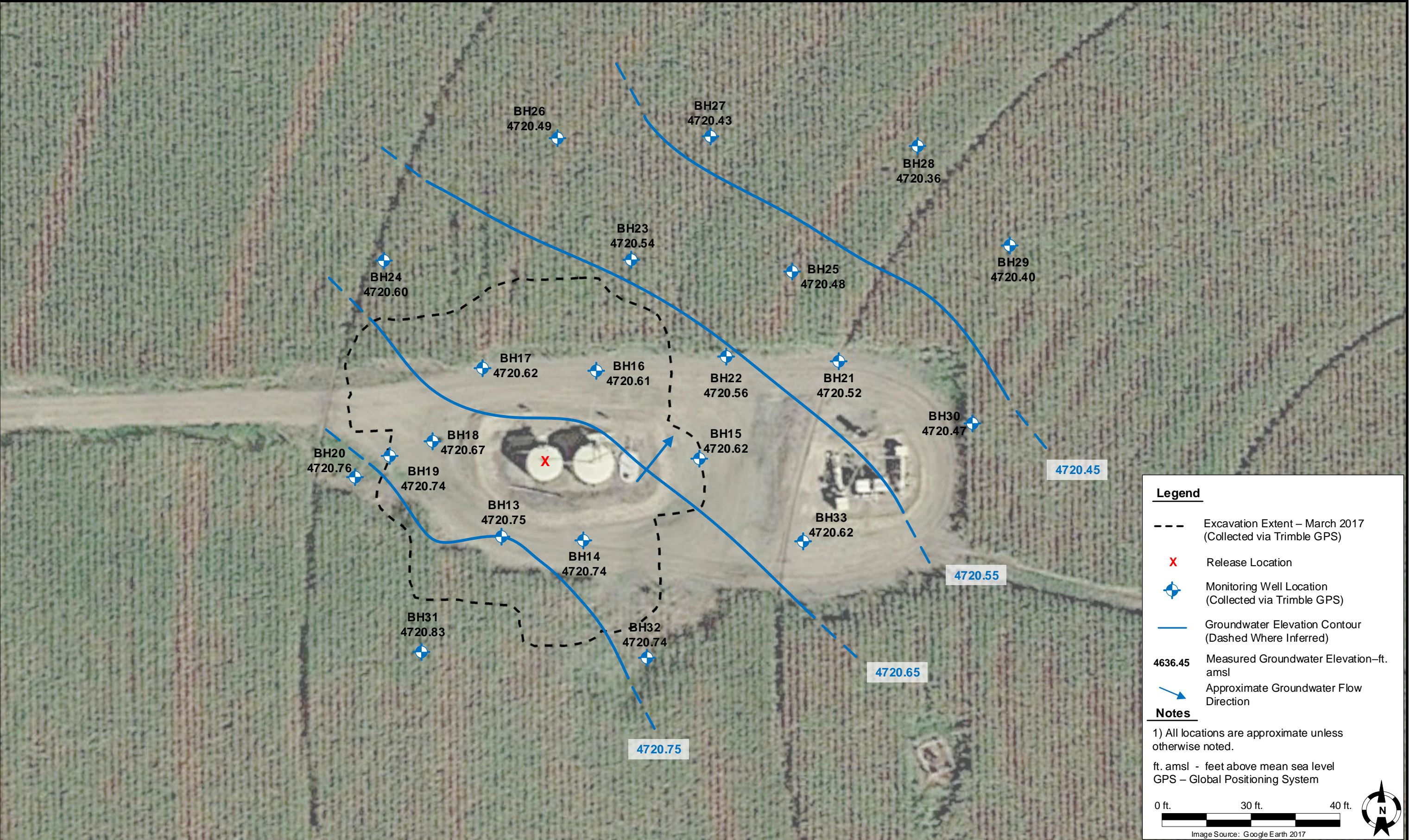
TASMAN
GEOSCIENCES

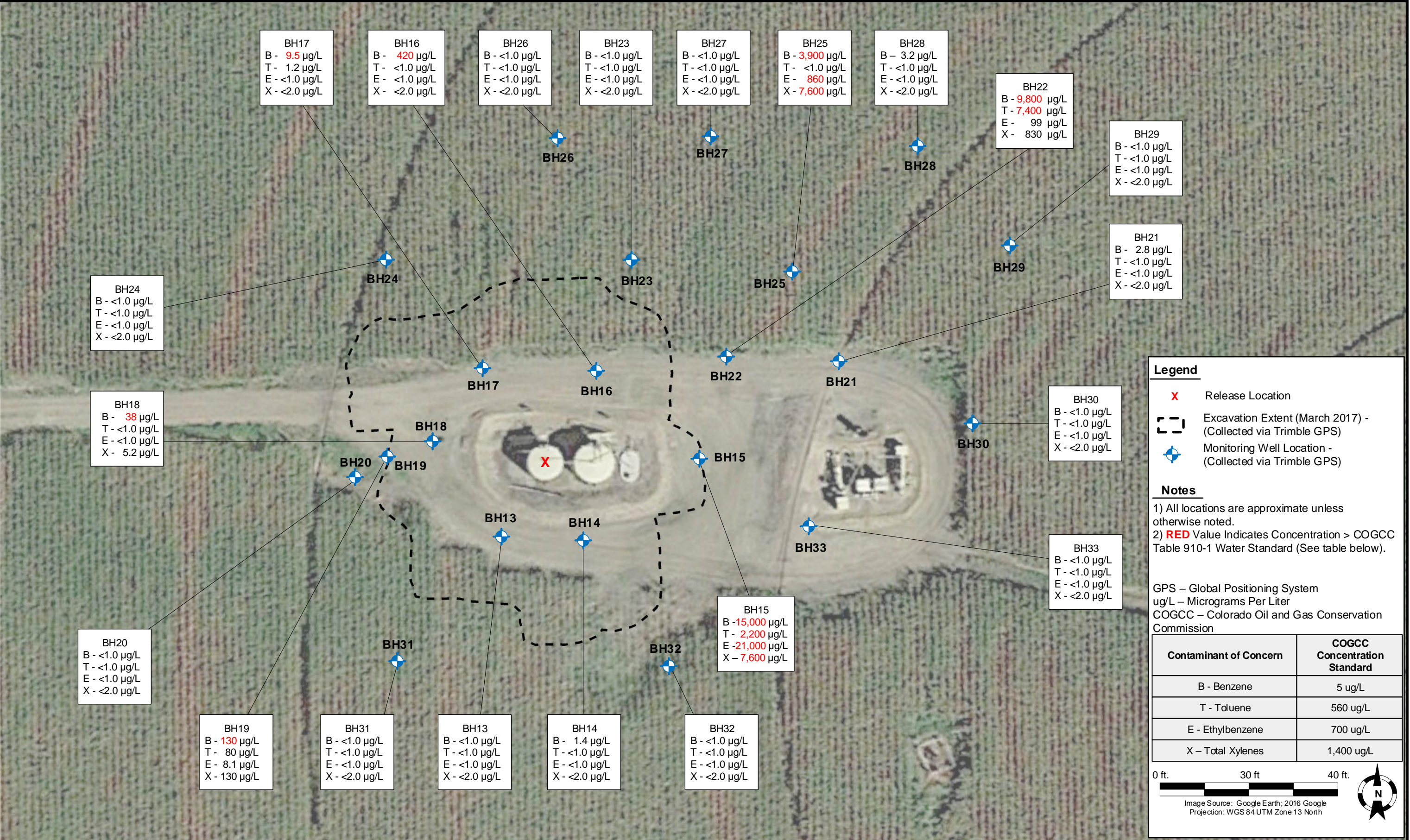
Tasman Geosciences, Inc.
6899 Pecos Street – Unit C
Denver, CO 80221

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





Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 10, 2019

Brandon Bruns

Tasman Geosciences

6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - Mosier 23-12F

Enclosed are the results of analyses for samples received by Summit Scientific on 01/03/19 17:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premier", on a light blue 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:
01/10/19 09:56

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH13	1901032-01	Water	01/03/19 11:42	01/03/19 17:10
BH14	1901032-02	Water	01/03/19 11:33	01/03/19 17:10
BH15	1901032-03	Water	01/03/19 13:03	01/03/19 17:10
BH16	1901032-04	Water	01/03/19 12:45	01/03/19 17:10
BH17	1901032-05	Water	01/03/19 12:44	01/03/19 17:10
BH18	1901032-06	Water	01/03/19 12:25	01/03/19 17:10
BH19	1901032-07	Water	01/03/19 12:33	01/03/19 17:10
BH20	1901032-08	Water	01/03/19 11:52	01/03/19 17:10
BH21	1901032-09	Water	01/03/19 12:25	01/03/19 17:10
BH22	1901032-10	Water	01/03/19 12:55	01/03/19 17:10
BH23	1901032-11	Water	01/03/19 12:34	01/03/19 17:10
BH24	1901032-12	Water	01/03/19 12:03	01/03/19 17:10
BH25	1901032-13	Water	01/03/19 12:57	01/03/19 17:10
BH26	1901032-14	Water	01/03/19 11:57	01/03/19 17:10
BH27	1901032-15	Water	01/03/19 11:47	01/03/19 17:10
BH28	1901032-16	Water	01/03/19 11:37	01/03/19 17:10
BH29	1901032-17	Water	01/03/19 11:27	01/03/19 17:10
BH30	1901032-18	Water	01/03/19 11:17	01/03/19 17:10
BH31	1901032-19	Water	01/03/19 11:12	01/03/19 17:10
BH32	1901032-20	Water	01/03/19 11:22	01/03/19 17:10
BH33	1901032-21	Water	01/03/19 11:07	01/03/19 17:10

Summit Scientific

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

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

Page 1 of 3

Client:	Noble / Tasman	
Address:	6899 N Pecos	
City/State/Zip:	Denver/CO/80221	
Phone:	303-487-1228	Fax:
Sampler Name:	Allison Dahl, Brian Gabel	

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

				Preservative				Matrix			Analyze For:										Special Instructions
Sample Description	Date Sampled	Time Sampled	Number of Containers	HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX									
BH13	1/3/2019	1142	3	X				X				X									
BH14		1133		X																	
BH15		1303				X															
BH16		1245		X																	
BH17		1244		X																	
BH18		1225		X																	
BH19		1233		X																	
BH20		1152		X																	
BH21		1225		X																	
BH22	✓	1255	✓	X				✓				✓									

Relinquished by: <i>Mr. Dahl</i>	Date/Time: 1/3/2019 1430	Received by: <i>Tasman Lock Box</i>	Date/Time: 1/3/2019 1430	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: <i>Tasman Lock Box</i>	Date/Time: 1-3-19 17:10	Received by: <i>[Signature]</i>	Date/Time: 1-3-19 17:10	Sample Integrity: Temperature Upon Receipt: <u>3.0</u> Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:		

1901032.2

Page 2 of 3

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

www.s2scientific.com

19010323

Page 3 of 3

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

www.s2scientific.com

Sample Receipt Checklist

S2 Work Order: 190032

Client: TASMAN NOBLE Client Project ID: MOSIER 23-12F

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

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

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

Thermometer ID: 61857155-K

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

Muri
Custodian Printed Name or Initials

KA
Signature or Initials of Custodian

1-3-19 17:45
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:
01/10/19 09:56

BH13
1901032-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/19 11:42**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	1901039	01/04/19	01/07/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/03/19 11:42**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		98.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		91.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		75.8 %	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 Brun

Reported:
01/10/19 09:56

BH14
1901032-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/19 11:33**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	1.4	1.0	ug/l	1	1901039	01/04/19	01/07/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/03/19 11:33**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		139 %	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:
01/10/19 09:56

BH15
1901032-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/19 13:03**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	15000	1000	ug/l	1000	1901039	01/04/19	01/07/19	EPA 8260B	
Toluene	2200	100	"	100	"	"	"	"	
Ethylbenzene	21000	100	"	"	"	"	"	"	
Xylenes (total)	7600	2000	"	1000	"	"	"	"	

Date Sampled: **01/03/19 13:03**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		128 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.7 %	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:
01/10/19 09:56

BH16
1901032-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/19 12:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	420	10		ug/l	10	1901039	01/04/19	01/07/19	EPA 8260B	
Toluene	ND	1.0		"	1	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **01/03/19 12:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		92.5 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.4 %		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:
01/10/19 09:56

BH17
1901032-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/19 12:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	9.5	1.0		ug/l	1	1901039	01/04/19	01/07/19	EPA 8260B	
Toluene	1.2	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **01/03/19 12:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		87.3 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		83.0 %		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:
01/10/19 09:56

BH18
1901032-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/19 12:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	38	1.0	ug/l	1	1901039	01/04/19	01/07/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	5.2	2.0	"	"	"	"	"	"	

Date Sampled: **01/03/19 12:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		84.0 %		23-173	"	"	"	"	
Surrogate: Toluene-d8		102 %		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:
01/10/19 09:56

BH19
1901032-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/19 12:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	130	1.0		ug/l	1	1901039	01/04/19	01/07/19	EPA 8260B	
Toluene	80	1.0		"	"	"	"	"	"	
Ethylbenzene	8.1	1.0		"	"	"	"	"	"	
Xylenes (total)	130	2.0		"	"	"	"	"	"	

Date Sampled: **01/03/19 12:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		89.8 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.0 %		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:
01/10/19 09:56

BH20
1901032-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/19 11:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1901039	01/04/19	01/07/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/03/19 11:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		83.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.2 %	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:
01/10/19 09:56

BH21
1901032-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/19 12:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	2.8	1.0	ug/l	1	1901039	01/04/19	01/07/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/03/19 12:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		97.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		84.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.2 %	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 Brun

Reported:
01/10/19 09:56

BH22
1901032-10 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/19 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	9800	50		ug/l	50	1901039	01/04/19	01/07/19	EPA 8260B	
Toluene	7400	50		"	"	"	"	"	"	
Ethylbenzene	99	1.0		"	1	"	"	"	"	
Xylenes (total)	830	2.0		"	"	"	"	"	"	

Date Sampled: **01/03/19 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		113 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		127 %		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:
01/10/19 09:56

BH23
1901032-11 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/19 12:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1901039	01/04/19	01/07/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/03/19 12:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		85.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		116 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.2 %	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:
01/10/19 09:56

BH24
1901032-12 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/19 12:03**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1901039	01/04/19	01/07/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/03/19 12:03**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		89.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		140 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		121 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/10/19 09:56

BH25
1901032-13 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/19 12:57**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	3900	100	ug/l	100	1901039	01/04/19	01/07/19	EPA 8260B	
Toluene	ND	1.0	"	1	"	"	"	"	
Ethylbenzene	860	100	"	100	"	"	"	"	
Xylenes (total)	7600	200	"	"	"	"	"	"	

Date Sampled: **01/03/19 12:57**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		98.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.6 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/10/19 09:56

BH26
1901032-14 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/19 11:57**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1901039	01/04/19	01/07/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/03/19 11:57**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		87.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.1 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/10/19 09:56

BH27
1901032-15 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/19 11:47**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1901039	01/04/19	01/07/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/03/19 11:47**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		66.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.7 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/10/19 09:56

BH28
1901032-16 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/19 11:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	3.2	1.0	ug/l	1	1901039	01/04/19	01/07/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/03/19 11:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		90.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		83.2 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/10/19 09:56

BH29
1901032-17 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/19 11:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1901039	01/04/19	01/07/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/03/19 11:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		91.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		80.3 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/10/19 09:56

BH30
1901032-18 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/19 11:17**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1901039	01/04/19	01/07/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/03/19 11:17**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		65.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		141 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		84.0 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/10/19 09:56

BH31
1901032-19 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/19 11:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1901039	01/04/19	01/07/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/03/19 11:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		83.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		165 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.5 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/10/19 09:56

BH32
1901032-20 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/19 11:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1901039	01/04/19	01/07/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/03/19 11:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		115 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/10/19 09:56

BH33
1901032-21 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/19 11:07**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1901042	01/04/19	01/05/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/03/19 11:07**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		93.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		84.9 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/10/19 09:56

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 1901039 - EPA 5030 Water MS

Blank (1901039-BLK1)

Prepared: 01/04/19 Analyzed: 01/06/19

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	12.1		"	13.3		90.9	23-173			
Surrogate: Toluene-d8	18.9		"	13.3		142	20-170			
Surrogate: 4-Bromofluorobenzene	11.5		"	13.3		86.0	21-167			

LCS (1901039-BS1)

Prepared: 01/04/19 Analyzed: 01/06/19

Benzene	56.4	1.0	ug/l	50.0		113	70-130			
Toluene	41.8	1.0	"	50.0		83.7	70-130			
Ethylbenzene	45.2	1.0	"	50.0		90.5	70-130			
m,p-Xylene	76.5	2.0	"	100		76.5	70-130			
o-Xylene	37.7	1.0	"	50.0		75.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	12.1		"	13.3		91.0	23-173			
Surrogate: Toluene-d8	14.4		"	13.3		108	20-170			
Surrogate: 4-Bromofluorobenzene	11.4		"	13.3		85.9	21-167			

Matrix Spike (1901039-MS1)

Source: 1901032-01

Prepared: 01/04/19 Analyzed: 01/06/19

Benzene	58.7	1.0	ug/l	50.0	ND	117	70-130			
Toluene	41.7	1.0	"	50.0	ND	83.4	70-130			
Ethylbenzene	45.4	1.0	"	50.0	ND	90.9	70-130			
m,p-Xylene	78.0	2.0	"	100	ND	78.0	70-130			
o-Xylene	39.1	1.0	"	50.0	ND	78.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	12.1		"	13.3		90.7	23-173			
Surrogate: Toluene-d8	14.0		"	13.3		105	20-170			
Surrogate: 4-Bromofluorobenzene	11.6		"	13.3		86.7	21-167			

Summit Scientific

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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/10/19 09:56

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 1901039 - EPA 5030 Water MS

Matrix Spike Dup (1901039-MSD1)				Source: 1901032-01		Prepared: 01/04/19 Analyzed: 01/06/19				
Benzene	58.4	1.0	ug/l	50.0	ND	117	70-130	0.530	30	
Toluene	42.2	1.0	"	50.0	ND	84.4	70-130	1.14	30	
Ethylbenzene	46.3	1.0	"	50.0	ND	92.5	70-130	1.81	30	
m,p-Xylene	78.7	2.0	"	100	ND	78.7	70-130	0.893	30	
o-Xylene	38.9	1.0	"	50.0	ND	77.8	70-130	0.487	30	
Surrogate: 1,2-Dichloroethane-d4	11.7		"	13.3		87.9	23-173			
Surrogate: Toluene-d8	14.3		"	13.3		107	20-170			
Surrogate: 4-Bromofluorobenzene	11.9		"	13.3		89.4	21-167			

Batch 1901042 - EPA 5030 Water MS

Blank (1901042-BLK1)				Prepared: 01/04/19 Analyzed: 01/05/19						
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		"	13.2		101	23-173			
Surrogate: Toluene-d8	12.8		"	13.3		95.8	20-170			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.6	21-167			

LCS (1901042-BS1)				Prepared: 01/04/19 Analyzed: 01/05/19						
Benzene	54.4	1.0	ug/l	50.0		109	70-130			
Toluene	54.2	1.0	"	50.0		108	70-130			
Ethylbenzene	61.7	1.0	"	50.0		123	70-130			
m,p-Xylene	103	2.0	"	100		103	70-130			
o-Xylene	47.6	1.0	"	50.0		95.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	14.9		"	13.2		113	23-173			
Surrogate: Toluene-d8	13.3		"	13.3		99.9	20-170			
Surrogate: 4-Bromofluorobenzene	13.3		"	13.3		99.5	21-167			

Summit Scientific

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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/10/19 09:56

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 1901042 - EPA 5030 Water MS

Matrix Spike (1901042-MS1)		Source: 1901037-01			Prepared: 01/04/19		Analyzed: 01/05/19			
Benzene	58.0	1.0	ug/l	50.0	ND	116	70-130			
Toluene	58.6	1.0	"	50.0	ND	117	70-130			
Ethylbenzene	43.6	1.0	"	50.0	ND	87.3	70-130			
m,p-Xylene	119	2.0	"	100	ND	119	70-130			
o-Xylene	54.9	1.0	"	50.0	ND	110	70-130			
Surrogate: 1,2-Dichloroethane-d4	12.6		"	13.2		95.3	23-173			
Surrogate: Toluene-d8	13.0		"	13.3		97.4	20-170			
Surrogate: 4-Bromofluorobenzene	13.5		"	13.3		101	21-167			
Matrix Spike Dup (1901042-MSD1)		Source: 1901037-01			Prepared: 01/04/19		Analyzed: 01/05/19			
Benzene	55.4	1.0	ug/l	50.0	ND	111	70-130	4.48	30	
Toluene	56.2	1.0	"	50.0	ND	112	70-130	4.08	30	
Ethylbenzene	59.1	1.0	"	50.0	ND	118	70-130	30.1	30	QR-02
m,p-Xylene	114	2.0	"	100	ND	114	70-130	4.60	30	
o-Xylene	53.2	1.0	"	50.0	ND	106	70-130	3.17	30	
Surrogate: 1,2-Dichloroethane-d4	12.7		"	13.2		96.5	23-173			
Surrogate: Toluene-d8	12.9		"	13.3		96.9	20-170			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.0	21-167			

Summit Scientific

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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/10/19 09:56

Notes and Definitions

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
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