

REMEDIAL EXCAVATION REPORT AND NO FURTHER ACTION REQUEST

FURROW USX AB15-99HZ

COGCC SPILL TRACKING # 470543
COGCC REMEDIATION # Not Assigned

Prepared for:



2115 117th Avenue
Greeley, CO 80631

Prepared by:



6855 W 119th Ave.
Broomfield, CO 80020

January 29, 2019

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

Subject: **Remedial Excavation Report and No Further Action Request**
 Furrow USX AB15-99HZ
 Spill/Release Point ID #: 470543
 Remediation Project #: Not Assigned
 SESE S15 T7N R64W
 Weld County, Colorado

Dear Mr. Aamold:

Below please find a copy of the above referenced Remedial Excavation Report and No Further Action Request (Report) for the Furrow USX AB15-99HZ site (Site) in Weld County, Colorado. The text below describes the remedial excavation and associated soil sampling activities (Excavation) guided by Tasman Geosciences, Inc. (Tasman), on behalf of Noble Energy, Inc. (Noble), between January 6, 2020 and January 10, 2020.

Introduction

The purpose of this document is to describe the results of excavation and soil sampling activities at the Site between January 6 and January 10, 2020. The activities described below were performed in response to the discovery of a release at the Furrow USX AB15-99HZ tank battery on January 5, 2020.

Facility Background

The Site is located approximately 4.4 miles northeast of the town of Galeton in Weld County, Colorado, as shown on Figure 1. The Site is surrounded by non-crop land, and the legal description is the southeast ¼ of the southeast¼ of Section 15, Township 7 North, Range 64 West, of the 6th Principal Meridian. The Site is approximately 70 feet west of Weld County Road 57 and has coordinates of 40.566355°, -104.526389°.

Remedial Excavation

On January 5, 2020, the release of oil occurred during fluid transfer operations at the Furrow USX AB1-99HZ tank battery. Noble and Iowa Tanklines (ITL) conducted an initial excavation to address visibly impacted soil in the area of the release. Noble and ITL removed approximately three inches of saturated soil from ground surface.

On January 6, 2020, an initial Form 19 was submitted to the Colorado Oil and Gas Conservation Commission (COGCC). The COGCC subsequently issued Spill/Release Point ID Number 470543 for

this event. Tasman was retained by Noble to collect confirmation samples in the excavated area of the release. Groundwater was not observed infiltrating the excavation. A total of 21 soil samples were collected from the base of the excavation. Soil samples were field screened for volatile organic compounds (VOCs) using a photoionization-detector (PID) and standard headspace sampling techniques. All 21 soil samples collected were submitted to Summit Scientific Laboratory (Summit) in Golden, Colorado for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene and Total Petroleum Hydrocarbons – Gasoline Range Organics (TPH-GRO) using United States Environmental Protection Agency (USEPA) Method 8260B, as well as Total Petroleum Hydrocarbons – Diesel Range Organics (TPH-DRO) using USEPA Method 8015. Additionally, all 21 soil samples were analyzed for Sodium Adsorption Ratio (SAR) using USEPA Method 6020 / United States Department of Agriculture (USDA) Method 60 6(2,3A) and Specific Conductance (EC) and pH via American Public Health Association (APHA)/American Society for Testing Materials (ASTM)/USEPA methods. Soil sample analytical results are summarized in Table 1. Sample locations, analytical results, and the remedial excavation extent are illustrated on Figure 2. The laboratory analytical report is included in Attachment A.

On January 7, 2020, vadose zone soil impacts in exceedance of applicable COGCC Table 910-1 standards were confirmed adjacent to the Furrow USX AB15-99HZ tank battery containment. On January 8, 2020 a supplemental Form 19 was submitted to the COGCC and approximate release location is illustrated on Figure 2. Tasman guided ITL in continued excavation activities on January 9 and January 10, 2020 to remove the remaining impacted soil.

On January 9, 2020 a total of 17 soil samples were collected from the base of the excavation at a depth of one foot below ground surface (ft. bgs). Soil samples were field screened for VOCs using a PID and standard headspace sampling techniques. All 17 soil samples collected were submitted to Summit for laboratory analysis of BTEX, naphthalene, and TPH-GRO using USEPA Method 8260B; TPH-DRO using USEPA Method 8015; and SAR, pH, and EC via APHA/ASTM/USEPA methods. Soil sample analytical results are summarized in Table 1. Sample locations, analytical results, and the remedial excavation extent are illustrated on Figure 3. The laboratory analytical report is included in Attachment A.

On January 10, 2020 a total of 27 soil samples were collected from excavation. Eight soil samples were collected from the base at a depth of one ft. bgs and 19 soil samples were collected from the sidewalls of the excavation at a depth of six inches bgs. Soil samples were field screened for VOCs using a PID and standard headspace sampling techniques. All 27 soil samples collected were submitted to Summit for laboratory analysis of BTEX, naphthalene, and TPH-GRO using USEPA Method 8260B; TPH-DRO using USEPA Method 8015; and SAR, pH, and EC via APHA/ASTM/USEPA methods. Soil sample analytical results are summarized in Table 1. Sample locations, analytical results, and the final remedial excavation extent are illustrated on Figure 4. The laboratory analytical report is included in Attachment A.

Approximately 230 cubic yards of material were removed from the Site between January 5 and January 10, 2020 and disposed of at the Pawnee Waste facility in Grover, Colorado. The final remedial excavation extent measured approximately 50 ft. by 120 ft. by 1 ft. bgs. The Excavation was backfilled with clean imported fill material and the Site was brought back to its original grade.

Results

Laboratory analytical results for the soil samples collected from the sidewalls and base of the final remedial excavation extent indicate petroleum hydrocarbon impacts have been successfully removed from the area.

No Further Action Request

Based on field and laboratory data collected during remedial activities presented herein, a No Further Action (NFA) designation is being requested from the COGCC for this project.

Remarks

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

Please contact me at (720) 431-1190 or bbruns@tasman-geo.com if you require additional information.

Sincerely,
Tasman Geosciences, Inc.



Brandon Bruns, PE
Project Manager

Attached:

Table 1 – Soil Analytical Data

Figure 1 – Site Location Map

Figure 2 – Remedial Excavation Soil Analytical Results Map (01/06/20)

Figure 3 – Remedial Excavation Soil Analytical Results Map (01/09/20)

Figure 4 – Remedial Excavation Soil Analytical Results Map (01/10/20)

Attachment A –Laboratory Analytical Data Reports

TABLE

TABLE 1
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - FURROW USX AB15-99HZ

Soil Sample ID	Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)
COGCC Standard		0.17	85	100	175	23	500	
SS01	01/06/20	2.9	19	8.8	31	4.7	1,800	280 ⁽⁴⁾
SS02	01/06/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS03	01/06/20	2.8	22	11	41	5.7	1,900	280
SS04	01/06/20	0.0054	0.056	0.044	0.25	0.25	<50	700
SS05	01/06/20	0.0036	0.099	0.082	0.35	0.14	<50	710
SS06	01/06/20	0.12	2.8	2.4	10	2.5	1,700	820
SS07	01/06/20	<0.0020	0.0070	<0.0050	0.015	0.023	<50	220
SS08	01/06/20	<0.0020	0.015	0.013	0.064	0.074	<50	260
SS09	01/06/20	0.013	0.10	0.11	0.67	0.78	170	550
SS10	01/06/20	0.0080	0.047	0.028	0.14	0.11	<50	<50
SS11 ⁽²⁾	01/06/20	0.016	0.35	3.2	16	4.4	1500 ⁽¹⁾	340
SS12	01/06/20	0.0056	0.020	0.015	0.074	0.062	<50	130
SS13	01/06/20	4.2	47	23	92	10	4,500	2,100
SS14	01/06/20	0.015	0.26	0.21	0.85	0.25	<50	1,200
SS15	01/06/20	0.0046	0.0097	<0.0050	<0.010	<0.010	<50	<50
SS16	01/06/20	0.0086	0.21	0.25	1.1	0.25	<50	850
SS17 ^(2,3)	01/06/20	14 ⁽¹⁾	23 ⁽¹⁾	14 ⁽¹⁾	54 ⁽¹⁾	2.4	910 ⁽¹⁾	21,000
SS18	01/06/20	0.015	0.052	0.014	0.051	0.022	<50	720
SS19	01/06/20	0.0038	0.016	0.0052	0.019	<0.010	<50	240
SS20	01/06/20	0.010	0.046	0.022	0.090	0.087	<50	200
SS21	01/06/20	0.015	0.14	0.11	0.42	0.10	<50	800
SS22@1'	01/09/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS23@1'	01/09/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS24@1'	01/09/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS25@1'	01/09/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS26@1'	01/09/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS27@1'	01/09/20	<0.0020	<0.0050	<0.0050	<0.010	0.014	<50	<50
SS28@1'	01/09/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS29@1'	01/09/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS30@1'	01/09/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	110
SS31@1'	01/09/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS32@1'	01/09/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS33@1'	01/09/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS34@1'	01/09/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS35@1'	01/09/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS36@1'	01/09/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS37@1'	01/09/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS38@1'	01/09/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS39@1'	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS40@1'	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS41@1'	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS42@1'	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50

TABLE 1
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - FURROW USX AB15-99HZ

Soil Sample ID	Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)
COGCC Standard		0.17	85	100	175	23	500	
SS43@6"	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS44@6"	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS45@6"	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS46@1'	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	0.020	<50	92
SS47@1'	01/10/20	<0.0020	<0.0050	<0.0050	0.020	0.014	<50	66
SS48@1'	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	0.013	<50	230
SS49@1'	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS50@6"	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS51@6"	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS52@6"	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	0.011	<50	<50
SS53@6"	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS54@6"	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS55@6"	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS56@6"	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	63
SS57@6"	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS58@6"	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS59@6"	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS60@6"	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS61@6"	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS62@6"	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS63@6"	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	61
SS64@6"	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS65@6"	01/10/20	<0.0020	<0.0050	<0.0050	<0.010	0.014	<50	170

Soil Sample ID	Date	SAR	pH	EC (mmhos/cm)
COGCC Standard		<12	6-9	<4mmhos/cm
SS01	01/06/20	1.11	8.72	0.349
SS02	01/06/20	0.641	7.88	0.480
SS03	01/06/20	0.933	8.68	0.292
SS04	01/06/20	0.449	7.88	0.760
SS05	01/06/20	0.341	8.12	1.12
SS06	01/06/20	0.821	8.82	0.214
SS07	01/06/20	0.499	7.27	0.539
SS08	01/06/20	2.06	7.87	2.85
SS09	01/06/20	0.363	8.62	0.303
SS10	01/06/20	0.245	8.38	0.386
SS11	01/06/20	0.412	8.71	0.235
SS12	01/06/20	0.466	8.48	0.254
SS13	01/06/20	0.695	8.73	0.247
SS14	01/06/20	0.285	8.26	0.522
SS15	01/06/20	0.269	8.32	0.320

TABLE 1
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - FURROW USX AB15-99HZ

Soil Sample ID	Date	SAR	pH	EC (mmhos/cm)
COGCC Standard		<12	6-9	<4mmhos/cm
SS16	01/06/20	0.367	8.44	0.334
SS17	01/06/20	0.453	8.30	0.526
SS18	01/06/20	0.397	7.74	0.356
SS19	01/06/20	0.205	8.38	1.17
SS20	01/06/20	0.299	8.49	0.643
SS21	01/06/20	0.242	8.24	0.425
SS22@1'	01/09/20	0.304	8.20	0.492 ⁽⁵⁾
SS23@1'	01/09/20	0.903	8.13	0.420
SS24@1'	01/09/20	0.352	8.22	0.357
SS25@1'	01/09/20	0.278	7.46	1.22
SS26@1'	01/09/20	0.795	7.94	2.00
SS27@1'	01/09/20	<0.100	8.18	1.83
SS28@1'	01/09/20	0.257	8.64	2.21
SS29@1'	01/09/20	0.113	8.55	0.670
SS30@1'	01/09/20	0.351	8.48	0.623
SS31@1'	01/09/20	2.54	8.18	2.83
SS32@1'	01/09/20	0.217	8.21	1.16
SS33@1'	01/09/20	0.299	8.32	0.580
SS34@1'	01/09/20	0.372	8.11	1.25
SS35@1'	01/09/20	0.172	8.65	1.31
SS36@1'	01/09/20	0.786	8.09	1.91
SS37@1'	01/09/20	0.352	8.17	0.937
SS38@1'	01/09/20	0.223	8.12	1.51
SS39@1'	01/10/20	0.152	8.02	0.291 ⁽⁵⁾
SS40@1'	01/10/20	0.270	7.80	0.265
SS41@1'	01/10/20	<0.100	7.66	0.441
SS42@1'	01/10/20	0.211	8.13	0.675
SS43@6"	01/10/20	0.190	7.59	0.380
SS44@6"	01/10/20	0.137	7.61	0.126
SS45@6"	01/10/20	0.362	7.87	0.120
SS46@1'	01/10/20	1.98	8.03	2.95
SS47@1'	01/10/20	0.119	8.26	0.868
SS48@1'	01/10/20	0.191	8.10	0.734
SS49@1'	01/10/20	0.122	8.44	0.421
SS50@6"	01/10/20	0.134	8.00	0.495
SS51@6"	01/10/20	0.199	7.96	1.56
SS52@6"	01/10/20	1.82	8.83	0.298
SS53@6"	01/10/20	0.130	8.65	0.259
SS54@6"	01/10/20	<0.100	8.22	0.608
SS55@6"	01/10/20	0.198	8.45	0.388
SS56@6"	01/10/20	0.460	7.90	0.907
SS57@6"	01/10/20	0.414	8.00	0.882

TABLE 1
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - FURROW USX AB15-99HZ

Soil Sample ID	Date	SAR	pH	EC (mmhos/cm)
COGCC Standard		<12	6-9	<4mmhos/cm
SS58@6"	01/10/20	0.180	8.15	1.31
SS59@6"	01/10/20	0.372	7.91	1.00
SS60@6"	01/10/20	0.398	7.75	0.821
SS61@6"	01/10/20	0.406	8.49	0.313
SS62@6"	01/10/20	0.245	8.10	0.351
SS63@6"	01/10/20	0.244	8.37	0.361
SS64@6"	01/10/20	0.484	8.60	0.327
SS65@6"	01/10/20	0.392	8.08	0.848

Notes:

COGCC = Colorado Oil and Gas Conservation Commission

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics

TPH-DRO = Total petroleum hydrocarbons - diesel range organics

mg/kg = Milligrams per kilogram

mmhos/cm = Millimhos per centimeter

SAR = Sodium Adsorption Ration

EC = Electrical Conductivity

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

Soil standards referenced from COGCC Table 910-1

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

1. The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
2. The laboratory has applied an S-02 flag to the 4-bromofluorobenzene surrogate for this sample, indicating that the surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
3. The laboratory has applied an S-02 flag to the Toluene-d8 surrogate for this sample, meaning that 'the surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.'
4. Sample SS01 was the parent sample for the MS/MSD samples, both of which had very low DRO recovery. The laboratory has applied a QM-07 flag to both the MS and MSD DRO spike results, meaning "The spike recovery was outside acceptance limits for the MS and / or MSD. The batch was accepted based on acceptable LCS / LCSD recovery." The DRO result for the SS01 sample is likely biased very low, due to the matrix interference identified by the MS /MSD samples.
5. Samples SS22@1' and SS39@1' were the parent samples for two of the DUP samples analyzed for specific conductivity (EC). The laboratory applied a QR-04 flag to both DUP sample's relative percent difference (RPD) value, meaning that "the RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values." The high RPD value suggests a high degree of heterogeneity in the matrix of the SS22@1' and SS39@1' samples.

FIGURES

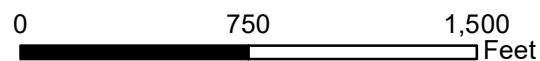
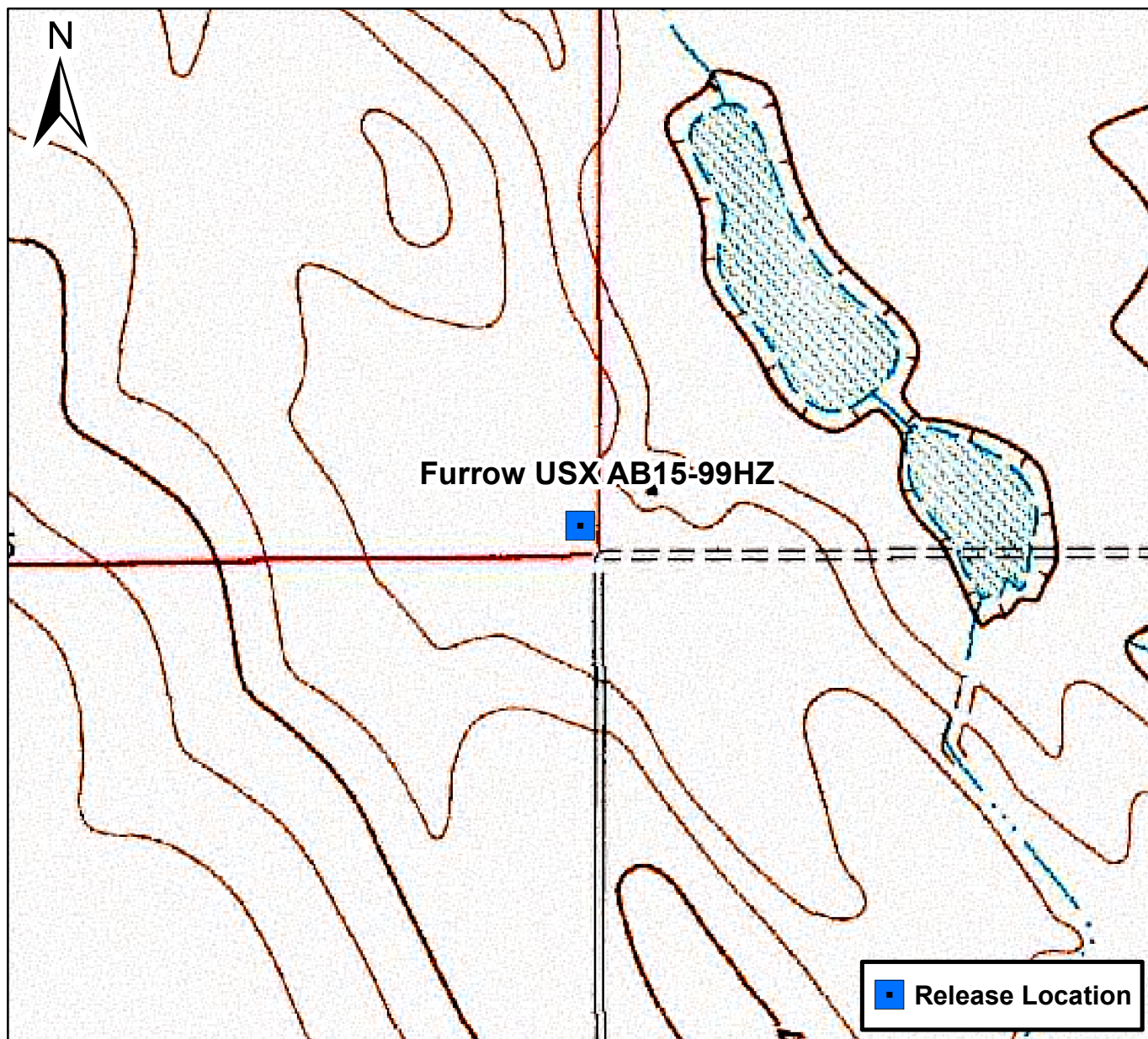
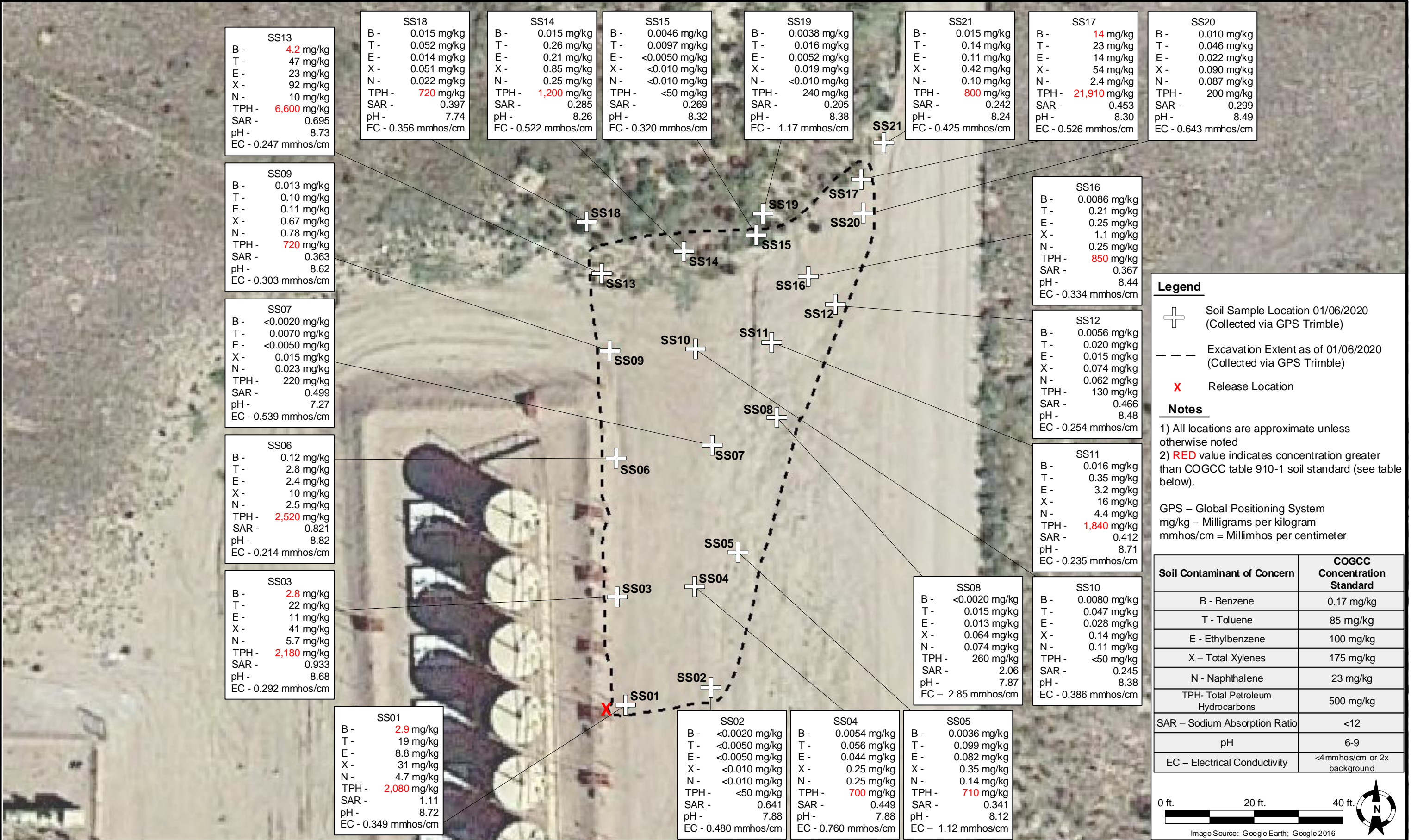
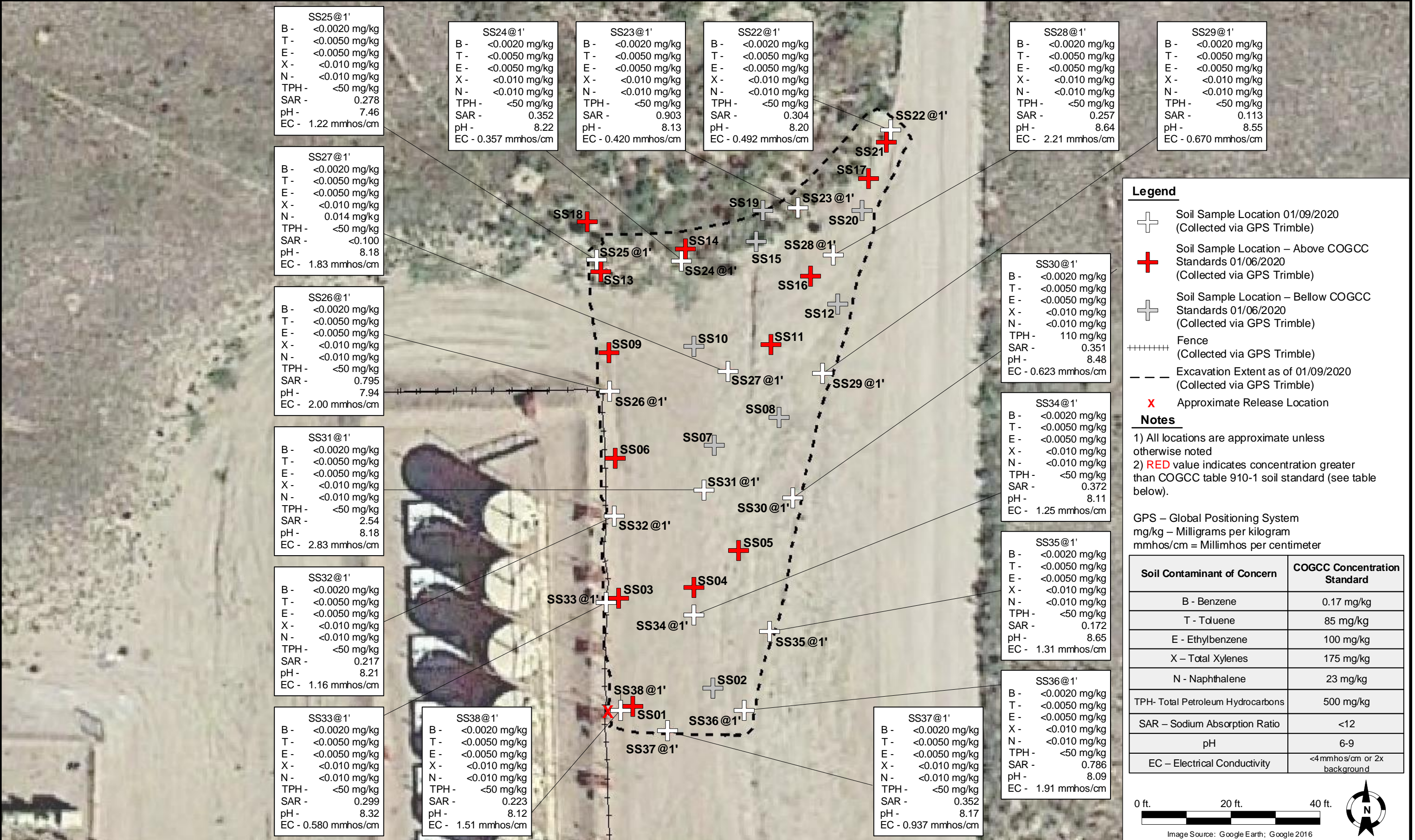


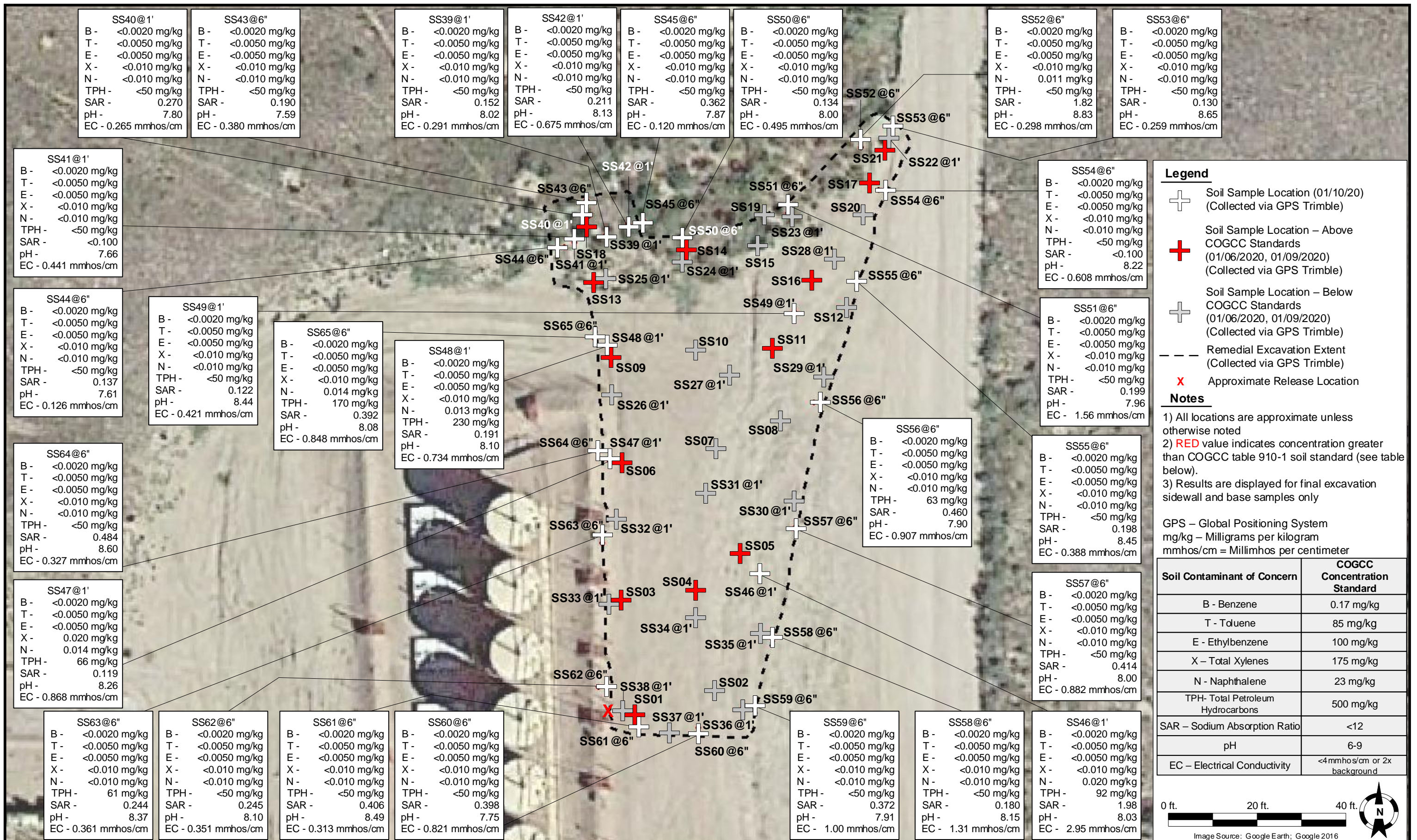
Figure 1

Site Location Map
 Furrow USX AB15-99HZ
 SESE S15 T7N R64W
 Weld County, Colorado









ATTACHMENT A

Laboratory Analytical Data Reports

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 07, 2020

Brandon Bruns

Tasman Geosciences

6855 W. 119th Ave.

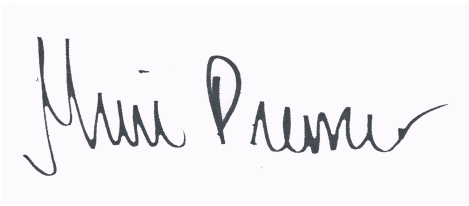
Broomfield, CO 80020

RE: Noble - Furrow USX AB15-99HZ

Work Order #2001026

Enclosed are the results of analyses for samples received by Summit Scientific on 01/06/20 17:53. 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 Paul Shrewsbury
President



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01	2001026-01	Soil	01/06/20 11:50	01/06/20 17:53
SS02	2001026-02	Soil	01/06/20 11:55	01/06/20 17:53
SS03	2001026-03	Soil	01/06/20 12:00	01/06/20 17:53
SS04	2001026-04	Soil	01/06/20 12:05	01/06/20 17:53
SS05	2001026-05	Soil	01/06/20 12:10	01/06/20 17:53
SS06	2001026-06	Soil	01/06/20 12:15	01/06/20 17:53
SS07	2001026-07	Soil	01/06/20 12:20	01/06/20 17:53
SS08	2001026-08	Soil	01/06/20 12:25	01/06/20 17:53
SS09	2001026-09	Soil	01/06/20 12:30	01/06/20 17:53
SS10	2001026-10	Soil	01/06/20 12:35	01/06/20 17:53
SS11	2001026-11	Soil	01/06/20 12:40	01/06/20 17:53
SS12	2001026-12	Soil	01/06/20 12:45	01/06/20 17:53
SS13	2001026-13	Soil	01/06/20 12:50	01/06/20 17:53
SS14	2001026-14	Soil	01/06/20 12:55	01/06/20 17:53
SS15	2001026-15	Soil	01/06/20 13:00	01/06/20 17:53
SS16	2001026-16	Soil	01/06/20 13:05	01/06/20 17:53
SS17	2001026-17	Soil	01/06/20 13:10	01/06/20 17:53
SS18	2001026-18	Soil	01/06/20 13:15	01/06/20 17:53
SS19	2001026-19	Soil	01/06/20 13:20	01/06/20 17:53
SS20	2001026-20	Soil	01/06/20 13:25	01/06/20 17:53
SS21	2001026-21	Soil	01/06/20 13:30	01/06/20 17:53

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.

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S₂

2001076.1

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


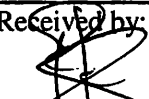
~~Excluded~~
TC
1/6/20

Tasman
Jacob Evans

Page 1 of 3

Client: Noble / Tasman Geosciences Project Manager: Brandon Bruns, Invoice: ~~Jacob Evans~~
Address: 6855 119th St. E-Mail: Bbruns@tasman-geo.com
City/State/Zip: Broomfield / CO/ 80020
Phone: 303-487-1228 Project Name: Furrow USX AB15-994Z
Sampler Name: Tanner Cook Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested					Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR	
1	SS01	1/6/20	1150	1			X			X				X	X	X	
2	SS02		1155														
3	SS03		1200														
4	SS04		1205														
5	SS05		1210														
6	SS06		1215														
7	SS07		1220														
8	SS08		1225														
9	SS09		1230														
10	SS10		1235														

Relinquished by: 	Date/Time: 1/6/20 1630	Received by: Tasman's Lock Box	Date/Time: 1/6/20 1630	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard 48 hours <input type="checkbox"/>	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 01/06/2020 1730	Received by: 	Date/Time: 01/06/2020 1730	Sample Integrity: Temperature Upon Receipt: 3.2	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

Summit Scientific

S₂

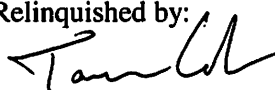

2001026.2

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

Edited
TC
11/6/20
Tasman
Page 2 of 3

Client: Noble / Tasman Geosciences Project Manager: Brandon Bruns, Invoice: ~~Jacob Evans~~
Address: 6855 119th St. E-Mail: Bbruns@tasman-geo.com
City/State/Zip: Broomfield / CO/ 80020
Phone: 303-487-1228 Project Name: Furrow USX AB15-99HZ
Sampler Name: Tanner Cook Project Number: _____

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions
					HCl	HNO ₃	None	Other _____	Water	Soil	Air-Canister #	Other _____	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR	
1	SS11	1/6/20	1240	1			X			X				X	X	X	
2	SS12		1245														
3	SS13		1250														
4	SS14		1255														
5	SS15		1300														
6	SS16		1305														
7	SS17		1310														
8	SS18		1315														
9	SS19		1320														
10	SS20		1325														

Relinquished by: 	Date/Time: 1/6/20 1630	Received by: Tasman's Lock Box	Date/Time: 1/6/20 1630	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours _____ 24 hours _____ Standard _____ 48 hours _____	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 01/06/2020 1730	Received by: 	Date/Time: 01/06/2020 1730	Sample Integrity: Temperature Upon Receipt: 3.2	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: <input checked="" type="checkbox"/> Yes No	

Summit Scientific

S₂

2001026.3

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303-277-9310

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TC
1/6/20

Page 3 of 3

Client: Noble / Tasman Project Manager: Brandon Bruns, Invoice: ~~Tasman~~ ~~Jacob Evans~~
Address: 6855 119th St E-Mail: Bbruns@tasman-geo.com
City/State/Zip: Broomfield / CO/ 80020
Phone: 303-487-1228 Project Name: Furrow USX AB15-99H Z
Sampler Name: Tanner Cook Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR	
1	SS Z1	1/6/20	1330	1			X			X				X	X	X	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Relinquished by: <u>Tanner Cook</u>	Date/Time: <u>1/6/20</u> <u>1630</u>	Received by: <u>Tasman's Lock Box</u>	Date/Time: <u>1/6/20</u> <u>1630</u>	Turn Around Time (Check) Same Day <u>X</u> 72 hours <u> </u> 24 hours <u> </u> Standard <u> </u> 48 hours <u> </u>	Notes:
Relinquished by: <u>Tasman's Lock Box</u>	Date/Time: <u>01/06/2020</u> <u>1730</u>	Received by: <u>[Signature]</u>	Date/Time: <u>01/06/2020</u> <u>1730</u>	Sample Integrity: Temperature Upon Receipt: <u>3.2</u> Samples Intact: <u>Yes</u> No <u> </u>	
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Sample Receipt Checklist

S2 Work Order 2001026

Client: NOBLE / TASMAN

Client Project ID: FURROW USX AB15-99HZ

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

☐ ☒ ☐ ☐ ☐

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

Temp (°C)	3.2
-----------	-----

Thermometer ID: 61857155-K

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

Additional Comments (if any):

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

RZ

Custodian Printed Name or Initials

RZ

Signature of Custodian

1/6/20

Date/Time



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/07/20 16:43

SS01
2001026-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/20 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	2.9	0.20	mg/kg	100	2001060	01/06/20	01/07/20	EPA 8260B	
Toluene	19	0.50	"	"	"	"	"	"	
Ethylbenzene	8.8	0.50	"	"	"	"	"	"	
Xylenes (total)	31	1.0	"	"	"	"	"	"	
Naphthalene	4.7	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1800	50	"	"	"	"	"	"	

Date Sampled: **01/06/20 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		126 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/06/20 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	280	50	mg/kg	1	2001061	01/06/20	01/06/20	EPA 8015M	

Date Sampled: **01/06/20 11:50**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/06/20 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	653	11.7	mg/kg dry	1	2001059	01/06/20	01/06/20	EPA 6020B	
Magnesium	313	5.86	"	"	"	"	"	"	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

SS01
2001026-01 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	138	5.86	mg/kg dry	1	2001059	01/06/20	01/06/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/06/20 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.11	0.100	units	1	2001069	01/07/20	01/07/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/06/20 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.4		%	1	2001058	01/06/20	01/07/20	Calculation	
pH	8.72		pH Units	"	2001057	01/06/20	01/06/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/06/20 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.349	0.0100	mmhos/cm	1	2001056	"	01/06/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/07/20 16:43

SS02
2001026-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/20 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2001060	01/06/20	01/06/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/06/20 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		130 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		117 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/06/20 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2001061	01/06/20	01/06/20	EPA 8015M	

Date Sampled: **01/06/20 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		110 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/06/20 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	1120	11.1	mg/kg dry	1	2001059	01/06/20	01/06/20	EPA 6020B	
Magnesium	335	5.54	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

SS02
2001026-02 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	95.2	5.54	mg/kg dry	1	2001059	01/06/20	01/06/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/06/20 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.641	0.100	units	1	2001069	01/07/20	01/07/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/06/20 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.3		%	1	2001058	01/06/20	01/07/20	Calculation	
pH	7.88		pH Units	"	2001057	01/06/20	01/06/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/06/20 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.480	0.0100	mmhos/cm	1	2001056	"	01/06/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

SS03
2001026-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/20 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	2.8	0.20	mg/kg	100	2001060	01/06/20	01/07/20	EPA 8260B	
Toluene	22	0.50	"	"	"	"	"	"	
Ethylbenzene	11	0.50	"	"	"	"	"	"	
Xylenes (total)	41	1.0	"	"	"	"	"	"	
Naphthalene	5.7	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1900	50	"	"	"	"	"	"	

Date Sampled: **01/06/20 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: 1,2-Dichloroethane-d4</i>		116 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		104 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		132 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/06/20 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	280	50	mg/kg	1	2001061	01/06/20	01/06/20	EPA 8015M	

Date Sampled: **01/06/20 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: o-Terphenyl</i>		98.4 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/06/20 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	1010	11.4	mg/kg dry	1	2001059	01/06/20	01/06/20	EPA 6020B	
Magnesium	380	5.68	"	"	"	"	"	"	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/07/20 16:43

SS03
2001026-03 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	137	5.68	mg/kg dry	1	2001059	01/06/20	01/06/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/06/20 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.933	0.100	units	1	2001069	01/07/20	01/07/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/06/20 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.0		%	1	2001058	01/06/20	01/07/20	Calculation	
pH	8.68		pH Units	"	2001057	01/06/20	01/06/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/06/20 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.292	0.0100	mmhos/cm	1	2001056	"	01/06/20	EPA 120.1	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/07/20 16:43

SS04
2001026-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/20 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	0.0054	0.0020		mg/kg	1	2001060	01/06/20	01/07/20	EPA 8260B	
Toluene	0.056	0.0050		"	"	"	"	"	"	
Ethylbenzene	0.044	0.0050		"	"	"	"	"	"	
Xylenes (total)	0.25	0.010		"	"	"	"	"	"	
Naphthalene	0.25	0.010		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50		"	"	"	"	"	"	

Date Sampled: **01/06/20 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		115 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		122 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		130 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/06/20 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	700	50		mg/kg	1	2001061	01/06/20	01/06/20	EPA 8015M	

Date Sampled: **01/06/20 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		134 %		30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/06/20 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	1060	11.0		mg/kg dry	1	2001059	01/06/20	01/06/20	EPA 6020B	
Magnesium	344	5.50		"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

SS04
2001026-04 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	65.7	5.50	mg/kg dry	1	2001059	01/06/20	01/06/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/06/20 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.449	0.100	units	1	2001069	01/07/20	01/07/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/06/20 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.0		%	1	2001058	01/06/20	01/07/20	Calculation	
pH	7.88		pH Units	"	2001057	01/06/20	01/06/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/06/20 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.760	0.0100	mmhos/cm	1	2001056	"	01/06/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/07/20 16:43

SS05
2001026-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/20 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0036	0.0020	mg/kg	1	2001060	01/06/20	01/06/20	EPA 8260B	
Toluene	0.099	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.082	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.35	0.010	"	"	"	"	"	"	
Naphthalene	0.14	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/06/20 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		116 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		118 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		125 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/06/20 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	710	50	mg/kg	1	2001061	01/06/20	01/06/20	EPA 8015M	

Date Sampled: **01/06/20 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		125 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/06/20 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2860	11.1	mg/kg dry	1	2001059	01/06/20	01/06/20	EPA 6020B	
Magnesium	478	5.54	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

SS05
2001026-05 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	74.9	5.54	mg/kg dry	1	2001059	01/06/20	01/06/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/06/20 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.341	0.100	units	1	2001069	01/07/20	01/07/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/06/20 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.3		%	1	2001058	01/06/20	01/07/20	Calculation	
pH	8.12		pH Units	"	2001057	01/06/20	01/06/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/06/20 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.12	0.0100	mmhos/cm	1	2001056	"	01/06/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/07/20 16:43

SS06
2001026-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/20 12:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	0.12	0.0020		mg/kg	1	2001060	01/06/20	01/07/20	EPA 8260B	
Toluene	2.8	0.50		"	100	"	"	"	"	
Ethylbenzene	2.4	0.50		"	"	"	"	"	"	
Xylenes (total)	10	1.0		"	"	"	"	"	"	
Naphthalene	2.5	1.0		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1700	50		"	"	"	"	"	"	

Date Sampled: **01/06/20 12:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<i>Surrogate: 1,2-Dichloroethane-d4</i>		113 %		23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		110 %		20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		129 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/06/20 12:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	820	50		mg/kg	1	2001061	01/06/20	01/06/20	EPA 8015M	

Date Sampled: **01/06/20 12:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<i>Surrogate: o-Terphenyl</i>		135 %		30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/06/20 12:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	470	11.4		mg/kg dry	1	2001059	01/06/20	01/06/20	EPA 6020B	
Magnesium	233	5.70		"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

SS06
2001026-06 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	87.1	5.70	mg/kg dry	1	2001059	01/06/20	01/06/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/06/20 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.821	0.100	units	1	2001069	01/07/20	01/07/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/06/20 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.7		%	1	2001058	01/06/20	01/07/20	Calculation	
pH	8.82		pH Units	"	2001057	01/06/20	01/06/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/06/20 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.214	0.0100	mmhos/cm	1	2001056	"	01/06/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

SS07
2001026-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/20 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001060	01/06/20	01/07/20	EPA 8260B	
Toluene	0.0070	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.015	0.010	"	"	"	"	"	"	
Naphthalene	0.023	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/06/20 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		130 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		119 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/06/20 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	220	50	mg/kg	1	2001061	01/06/20	01/06/20	EPA 8015M	

Date Sampled: **01/06/20 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		109 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/06/20 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	775	11.0	mg/kg dry	1	2001059	01/06/20	01/06/20	EPA 6020B	
Magnesium	241	5.50	"	"	"	"	"	"	

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

SS07
2001026-07 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	62.0	5.50	mg/kg dry	1	2001059	01/06/20	01/06/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/06/20 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.499	0.100	units	1	2001069	01/07/20	01/07/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/06/20 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.9		%	1	2001058	01/06/20	01/07/20	Calculation	
pH	7.27		pH Units	"	2001057	01/06/20	01/06/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/06/20 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.539	0.0100	mmhos/cm	1	2001056	"	01/06/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

SS08
2001026-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/20 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001060	01/06/20	01/07/20	EPA 8260B	
Toluene	0.015	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.013	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.064	0.010	"	"	"	"	"	"	
Naphthalene	0.074	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/06/20 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		124 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		120 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		105 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/06/20 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	260	50	mg/kg	1	2001061	01/06/20	01/06/20	EPA 8015M	

Date Sampled: **01/06/20 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		110 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/06/20 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2070	11.2	mg/kg dry	1	2001059	01/06/20	01/06/20	EPA 6020B	
Magnesium	429	5.58	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

SS08
2001026-08 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	395	5.58	mg/kg dry	1	2001059	01/06/20	01/06/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/06/20 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.06	0.100	units	1	2001069	01/07/20	01/07/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/06/20 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.6		%	1	2001058	01/06/20	01/07/20	Calculation	
pH	7.87		pH Units	"	2001057	01/06/20	01/06/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/06/20 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.85	0.0100	mmhos/cm	1	2001056	"	01/06/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/07/20 16:43

SS09
2001026-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/20 12:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	0.013	0.0020	mg/kg	1	2001060	01/06/20	01/06/20	EPA 8260B	
Toluene	0.10	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.11	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.67	0.010	"	"	"	"	"	"	
Naphthalene	0.78	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	170	50	"	10	"	"	"	"	

Date Sampled: **01/06/20 12:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<i>Surrogate: 1,2-Dichloroethane-d4</i>		92.7 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		104 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		149 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/06/20 12:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	550	50	mg/kg	1	2001061	01/06/20	01/06/20	EPA 8015M	

Date Sampled: **01/06/20 12:30**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/06/20 12:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	1430	11.5	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B	
Magnesium	416	5.73	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

SS09
2001026-09 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	60.7	5.73	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/06/20 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.363	0.100	units	1	2001069	01/07/20	01/07/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/06/20 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.3		%	1	2001058	01/06/20	01/07/20	Calculation	
pH	8.62		pH Units	"	2001057	01/06/20	01/06/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/06/20 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.303	0.0100	mmhos/cm	1	2001056	"	01/06/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/07/20 16:43

SS10
2001026-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/20 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	0.0080	0.0020	mg/kg	1	2001060	01/06/20	01/06/20	EPA 8260B	
Toluene	0.047	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.028	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.14	0.010	"	"	"	"	"	"	
Naphthalene	0.11	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/06/20 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		91.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/06/20 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2001061	01/06/20	01/07/20	EPA 8015M	

Date Sampled: **01/06/20 12:35**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/06/20 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	1280	11.0	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B	
Magnesium	327	5.52	"	"	"	"	"	"	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

SS10
2001026-10 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	38.0	5.52	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/06/20 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.245	0.100	units	1	2001069	01/07/20	01/07/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/06/20 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.6		%	1	2001058	01/06/20	01/07/20	Calculation	
pH	8.38		pH Units	"	2001057	01/06/20	01/06/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/06/20 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.386	0.0100	mmhos/cm	1	2001056	"	01/06/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/07/20 16:43

SS11
2001026-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/20 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.016	0.0020	mg/kg	1	2001060	01/06/20	01/07/20	EPA 8260B	
Toluene	0.35	0.0050	"	"	"	"	"	"	
Ethylbenzene	3.2	0.050	"	10	"	"	"	"	
Xylenes (total)	16	0.10	"	"	"	"	"	"	
Naphthalene	4.4	0.10	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1500	50	"	"	"	"	"	"	E

Date Sampled: **01/06/20 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		91.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		172 %	21-167		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/06/20 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	340	50	mg/kg	1	2001061	01/06/20	01/07/20	EPA 8015M	

Date Sampled: **01/06/20 12:40**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/06/20 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	984	11.0	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B	
Magnesium	288	5.52	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

SS11
2001026-11 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	57.2	5.52	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/06/20 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.412	0.100	units	1	2001069	01/07/20	01/07/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/06/20 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.6		%	1	2001058	01/06/20	01/07/20	Calculation	
pH	8.71		pH Units	"	2001057	01/06/20	01/06/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/06/20 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.235	0.0100	mmhos/cm	1	2001056	"	01/06/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/07/20 16:43

SS12
2001026-12 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/20 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	0.0056	0.0020	mg/kg	1	2001060	01/06/20	01/07/20	EPA 8260B	
Toluene	0.020	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.015	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.074	0.010	"	"	"	"	"	"	
Naphthalene	0.062	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/06/20 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		90.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.5 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/06/20 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	130	50	mg/kg	1	2001061	01/06/20	01/07/20	EPA 8015M	

Date Sampled: **01/06/20 12:45**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/06/20 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	828	11.0	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B	
Magnesium	254	5.50	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

SS12
2001026-12 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	59.8	5.50	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/06/20 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.466	0.100	units	1	2001069	01/07/20	01/07/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/06/20 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.9		%	1	2001058	01/06/20	01/07/20	Calculation	
pH	8.48		pH Units	"	2001057	01/06/20	01/06/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/06/20 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.254	0.0100	mmhos/cm	1	2001056	"	01/06/20	EPA 120.1	

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/07/20 16:43

SS13
2001026-13 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/20 12:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	4.2	0.20	mg/kg	100	2001060	01/06/20	01/07/20	EPA 8260B	
Toluene	47	0.50	"	"	"	"	"	"	
Ethylbenzene	23	0.50	"	"	"	"	"	"	
Xylenes (total)	92	1.0	"	"	"	"	"	"	
Naphthalene	10	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	4500	50	"	"	"	"	"	"	

Date Sampled: **01/06/20 12:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		88.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		136 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/06/20 12:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	2100	50	mg/kg	1	2001061	01/06/20	01/07/20	EPA 8015M	

Date Sampled: **01/06/20 12:50**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/06/20 12:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	1130	10.9	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B	
Magnesium	343	5.45	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

SS13
2001026-13 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	104	5.45	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/06/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.695	0.100	units	1	2001069	01/07/20	01/07/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/06/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.7		%	1	2001058	01/06/20	01/07/20	Calculation	
pH	8.73		pH Units	"	2001057	01/06/20	01/06/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/06/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.247	0.0100	mmhos/cm	1	2001056	"	01/06/20	EPA 120.1	

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/07/20 16:43

SS14
2001026-14 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/20 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.015	0.0020	mg/kg	1	2001060	01/06/20	01/06/20	EPA 8260B	
Toluene	0.26	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.21	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.85	0.010	"	"	"	"	"	"	
Naphthalene	0.25	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/06/20 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		97.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		135 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/06/20 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1200	50	mg/kg	1	2001061	01/06/20	01/07/20	EPA 8015M	

Date Sampled: **01/06/20 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		142 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/06/20 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2340	11.0	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B	
Magnesium	420	5.48	"	"	"	"	"	"	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

SS14
2001026-14 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	56.9	5.48	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/06/20 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.285	0.100	units	1	2001069	01/07/20	01/07/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/06/20 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.3		%	1	2001058	01/06/20	01/07/20	Calculation	
pH	8.26		pH Units	"	2001057	01/06/20	01/06/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/06/20 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.522	0.0100	mmhos/cm	1	2001056	"	01/06/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/07/20 16:43

SS15
2001026-15 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/20 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0046	0.0020	mg/kg	1	2001060	01/06/20	01/06/20	EPA 8260B	
Toluene	0.0097	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/06/20 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		119 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		128 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/06/20 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001061	01/06/20	01/07/20	EPA 8015M	

Date Sampled: **01/06/20 13:00**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/06/20 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1890	11.2	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B	
Magnesium	317	5.59	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

SS15
2001026-15 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	48.0	5.59	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/06/20 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.269	0.100	units	1	2001069	01/07/20	01/07/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/06/20 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.5		%	1	2001058	01/06/20	01/07/20	Calculation	
pH	8.32		pH Units	"	2001057	01/06/20	01/06/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/06/20 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.320	0.0100	mmhos/cm	1	2001056	"	01/06/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/07/20 16:43

SS16
2001026-16 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/20 13:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	0.0086	0.0020	mg/kg	1	2001060	01/06/20	01/07/20	EPA 8260B	
Toluene	0.21	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.25	0.0050	"	"	"	"	"	"	
Xylenes (total)	1.1	0.010	"	"	"	"	"	"	
Naphthalene	0.25	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/06/20 13:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		158 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/06/20 13:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	850	50	mg/kg	1	2001061	01/06/20	01/07/20	EPA 8015M	

Date Sampled: **01/06/20 13:05**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/06/20 13:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	1120	10.7	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B	
Magnesium	286	5.37	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

SS16
2001026-16 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	53.1	5.37	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/06/20 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.367	0.100	units	1	2001069	01/07/20	01/07/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/06/20 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.1		%	1	2001058	01/06/20	01/07/20	Calculation	
pH	8.44		pH Units	"	2001057	01/06/20	01/06/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/06/20 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.334	0.0100	mmhos/cm	1	2001056	"	01/06/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/07/20 16:43

SS17
2001026-17 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/20 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	14	0.020	mg/kg	10	2001060	01/06/20	01/07/20	EPA 8260B	E
Toluene	23	0.050	"	"	"	"	"	"	E
Ethylbenzene	14	0.050	"	"	"	"	"	"	E
Xylenes (total)	54	0.10	"	"	"	"	"	"	E
Naphthalene	2.4	0.10	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	910	50	"	"	"	"	"	"	E

Date Sampled: **01/06/20 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		148 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		221 %	20-170		"	"	"	"	S-02
Surrogate: 4-Bromofluorobenzene		648 %	21-167		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/06/20 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	21000	50	mg/kg	1	2001061	01/06/20	01/07/20	EPA 8015M	

Date Sampled: **01/06/20 13:10**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/06/20 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1520	11.4	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B	
Magnesium	331	5.68	"	"	"	"	"	"	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

SS17
2001026-17 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	74.7	5.68	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/06/20 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.453	0.100	units	1	2001069	01/07/20	01/07/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/06/20 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.1		%	1	2001058	01/06/20	01/07/20	Calculation	
pH	8.30		pH Units	"	2001057	01/06/20	01/06/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/06/20 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.526	0.0100	mmhos/cm	1	2001056	"	01/06/20	EPA 120.1	

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

SS18
2001026-18 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/20 13:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	0.015	0.0020	mg/kg	1	2001060	01/06/20	01/06/20	EPA 8260B	
Toluene	0.052	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.014	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.051	0.010	"	"	"	"	"	"	
Naphthalene	0.022	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/06/20 13:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/06/20 13:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	720	50	mg/kg	1	2001061	01/06/20	01/07/20	EPA 8015M	

Date Sampled: **01/06/20 13:15**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/06/20 13:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	827	11.8	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B	
Magnesium	286	5.92	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/07/20 16:43

SS18
2001026-18 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	51.9	5.92	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/06/20 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.397	0.100	units	1	2001069	01/07/20	01/07/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/06/20 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.5		%	1	2001058	01/06/20	01/07/20	Calculation	
pH	7.74		pH Units	"	2001057	01/06/20	01/06/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/06/20 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.356	0.0100	mmhos/cm	1	2001056	"	01/06/20	EPA 120.1	

Summit Scientific

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Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/07/20 16:43

SS19
2001026-19 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/20 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0038	0.0020	mg/kg	1	2001060	01/06/20	01/06/20	EPA 8260B	
Toluene	0.016	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0052	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.019	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/06/20 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		121 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		112 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		106 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/06/20 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	240	50	mg/kg	1	2001061	01/06/20	01/07/20	EPA 8015M	

Date Sampled: **01/06/20 13:20**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/06/20 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1280	11.0	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B	
Magnesium	261	5.51	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

SS19
2001026-19 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	30.8	5.51	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/06/20 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.205	0.100	units	1	2001069	01/07/20	01/07/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/06/20 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.7		%	1	2001058	01/06/20	01/07/20	Calculation	
pH	8.38		pH Units	"	2001057	01/06/20	01/06/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/06/20 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.17	0.0100	mmhos/cm	1	2001056	"	01/06/20	EPA 120.1	

Summit Scientific

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6855 W. 119th Ave.
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Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/07/20 16:43

SS20
2001026-20 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/20 13:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	0.010	0.0020	mg/kg	1	2001060	01/06/20	01/06/20	EPA 8260B	
Toluene	0.046	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.022	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.090	0.010	"	"	"	"	"	"	
Naphthalene	0.087	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/06/20 13:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		118 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		112 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/06/20 13:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	200	50	mg/kg	1	2001061	01/06/20	01/07/20	EPA 8015M	

Date Sampled: **01/06/20 13:25**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/06/20 13:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	2810	11.0	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B	
Magnesium	322	5.52	"	"	"	"	"	"	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

SS20
2001026-20 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	62.8	5.52	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/06/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.299	0.100	units	1	2001069	01/07/20	01/07/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/06/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.6		%	1	2001058	01/06/20	01/07/20	Calculation	
pH	8.49		pH Units	"	2001057	01/06/20	01/06/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/06/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.643	0.0100	mmhos/cm	1	2001056	"	01/06/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/07/20 16:43

SS21
2001026-21 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/20 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	0.015	0.0020	mg/kg	1	2001060	01/06/20	01/07/20	EPA 8260B	
Toluene	0.14	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.11	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.42	0.010	"	"	"	"	"	"	
Naphthalene	0.10	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/06/20 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		94.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		129 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/06/20 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	800	50	mg/kg	1	2001061	01/06/20	01/07/20	EPA 8015M	

Date Sampled: **01/06/20 13:30**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/06/20 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	1120	10.7	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B	
Magnesium	251	5.34	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

SS21
2001026-21 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	34.4	5.34	mg/kg dry	1	2001059	01/06/20	01/07/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/06/20 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.242	0.100	units	1	2001069	01/07/20	01/07/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/06/20 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.6		%	1	2001058	01/06/20	01/07/20	Calculation	
pH	8.24		pH Units	"	2001057	01/06/20	01/06/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/06/20 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.425	0.0100	mmhos/cm	1	2001056	"	01/06/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/07/20 16:43

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 2001060 - EPA 5030 Soil MS

Blank (2001060-BLK1)

Prepared: 01/06/20 Analyzed: 01/07/20

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0351		"	0.0400		87.8	23-173			
Surrogate: Toluene-d8	0.0411		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0417		"	0.0400		104	21-167			

LCS (2001060-BS1)

Prepared: 01/06/20 Analyzed: 01/07/20

Benzene	0.0957	0.0020	mg/kg	0.100		95.7	70-130			
Toluene	0.108	0.0050	"	0.100		108	70-130			
Ethylbenzene	0.102	0.0050	"	0.100		102	70-130			
m,p-Xylene	0.214	0.010	"	0.200		107	70-130			
o-Xylene	0.0944	0.0050	"	0.100		94.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0328		"	0.0400		82.0	23-173			
Surrogate: Toluene-d8	0.0413		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0409		"	0.0400		102	21-167			

Matrix Spike (2001060-MS1)

Source: 2001026-02

Prepared: 01/06/20 Analyzed: 01/07/20

Benzene	0.0992	0.0020	mg/kg	0.100	ND	99.2	70-130			
Toluene	0.112	0.0050	"	0.100	ND	112	70-130			
Ethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130			
m,p-Xylene	0.220	0.010	"	0.200	ND	110	70-130			
o-Xylene	0.0969	0.0050	"	0.100	ND	96.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0359		"	0.0400		89.8	23-173			
Surrogate: Toluene-d8	0.0410		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0408		"	0.0400		102	21-167			

Summit Scientific

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



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/07/20 16:43

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 2001060 - EPA 5030 Soil MS

Matrix Spike Dup (2001060-MSD1)		Source: 2001026-02			Prepared: 01/06/20 Analyzed: 01/07/20					
Benzene	0.0982	0.0020	mg/kg	0.100	ND	98.2	70-130	1.00	30	
Toluene	0.111	0.0050	"	0.100	ND	111	70-130	0.942	30	
Ethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130	3.25	30	
m,p-Xylene	0.214	0.010	"	0.200	ND	107	70-130	2.81	30	
o-Xylene	0.0946	0.0050	"	0.100	ND	94.6	70-130	2.44	30	
Surrogate: 1,2-Dichloroethane-d4	0.0352		"	0.0400		88.1	23-173			
Surrogate: Toluene-d8	0.0415		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0406		"	0.0400		102	21-167			

Summit Scientific

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



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 2001061 - EPA 3550A

Blank (2001061-BLK1)

Prepared: 01/06/20 Analyzed: 01/07/20

C10-C28 (DRO) ND 50 mg/kg

LCS (2001061-BS1)

Prepared: 01/06/20 Analyzed: 01/07/20

C10-C28 (DRO) 525 50 mg/kg 500 105 70-130

Matrix Spike (2001061-MS1)

Source: 2001026-01

Prepared: 01/06/20 Analyzed: 01/07/20

C10-C28 (DRO) 552 50 mg/kg 500 284 53.6 70-130 QM-07

Matrix Spike Dup (2001061-MSD1)

Source: 2001026-01

Prepared: 01/06/20 Analyzed: 01/07/20

C10-C28 (DRO) 503 50 mg/kg 500 284 43.8 70-130 9.34 20 QM-07

Summit Scientific

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



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/07/20 16:43

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis - Quality Control

Summit Scientific

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

Batch 2001059 - General Preparation

Blank (2001059-BLK1)

Prepared & Analyzed: 01/06/20

Calcium	ND	10.0	mg/kg wet
Magnesium	ND	5.00	"
Sodium	ND	5.00	"

LCS (2001059-BS1)

Prepared & Analyzed: 01/06/20

Calcium	548	10.0	mg/kg wet	500	110	70-130
Magnesium	591	5.00	"	500	118	70-130
Sodium	550	5.00	"	500	110	70-130

Duplicate (2001059-DUP1)

Source: 2001023-01

Prepared & Analyzed: 01/06/20

Calcium	1200	11.9	mg/kg dry	1240	2.77	20
Magnesium	388	5.94	"	392	1.02	20
Sodium	751	5.94	"	815	8.20	20

Matrix Spike (2001059-MS1)

Source: 2001023-01

Prepared & Analyzed: 01/06/20

Calcium	1730	11.9	mg/kg dry	594	1240	83.5	70-130
Magnesium	938	5.94	"	594	392	91.9	70-130
Sodium	1320	5.94	"	594	815	85.4	70-130

Matrix Spike Dup (2001059-MSD1)

Source: 2001023-01

Prepared & Analyzed: 01/06/20

Calcium	1790	11.9	mg/kg dry	594	1240	93.1	70-130	3.23	25
Magnesium	919	5.94	"	594	392	88.8	70-130	1.97	25
Sodium	1340	5.94	"	594	815	87.6	70-130	0.984	25

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

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

Batch 2001057 - General Preparation

LCS (2001057-BS1)

Prepared & Analyzed: 01/06/20

pH	9.20		pH Units	9.18	100	95-105
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Duplicate (2001057-DUP1)

Source: 2001023-01

Prepared & Analyzed: 01/06/20

pH	8.61		pH Units	8.49	1.40	20
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Batch 2001058 - General Preparation

Duplicate (2001058-DUP1)

Source: 2001023-01

Prepared: 01/06/20 Analyzed: 01/07/20

% Solids	84.4		%	84.2	0.206	20
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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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/07/20 16:43

Specific Conductance by EPA Method 120.1 - Quality Control
Summit Scientific

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

Batch 2001056 - General Preparation

Blank (2001056-BLK1)

Prepared & Analyzed: 01/06/20

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (2001056-BS1)

Prepared & Analyzed: 01/06/20

Specific Conductance (EC) 0.677 0.0100 mmhos/cm 0.750 90.3 90-110

Duplicate (2001056-DUP1)

Source: 2001023-01

Prepared & Analyzed: 01/06/20

Specific Conductance (EC) 1.45 0.0100 mmhos/cm 1.96 29.7 20 QR-03

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/07/20 16:43

Notes and Definitions

S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 13, 2020

Brandon Bruns

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Furrow USX AB15-99HZ

Work Order #2001100

Enclosed are the results of analyses for samples received by Summit Scientific on 01/09/20 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury

President



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 12:20

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS22@1'	2001100-01	Soil	01/09/20 14:00	01/09/20 18:00
SS23@1'	2001100-02	Soil	01/09/20 13:45	01/09/20 18:00
SS24@1'	2001100-03	Soil	01/09/20 13:40	01/09/20 18:00
SS25@1'	2001100-04	Soil	01/09/20 13:35	01/09/20 18:00
SS26@1'	2001100-05	Soil	01/09/20 14:35	01/09/20 18:00
SS27@1'	2001100-06	Soil	01/09/20 13:20	01/09/20 18:00
SS28@1'	2001100-07	Soil	01/09/20 14:50	01/09/20 18:00
SS29@1'	2001100-08	Soil	01/09/20 13:25	01/09/20 18:00
SS30@1'	2001100-09	Soil	01/09/20 13:30	01/09/20 18:00
SS31@1'	2001100-10	Soil	01/09/20 14:10	01/09/20 18:00
SS32@1'	2001100-11	Soil	01/09/20 14:40	01/09/20 18:00
SS33@1'	2001100-12	Soil	01/09/20 13:55	01/09/20 18:00
SS34@1'	2001100-13	Soil	01/09/20 13:50	01/09/20 18:00
SS35@1'	2001100-14	Soil	01/09/20 14:15	01/09/20 18:00
SS36@1'	2001100-15	Soil	01/09/20 14:20	01/09/20 18:00
SS37@1'	2001100-16	Soil	01/09/20 14:25	01/09/20 18:00
SS38@1'	2001100-17	Soil	01/09/20 14:30	01/09/20 18:00

Summit Scientific

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

2001100.1

Summit Scientific

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Page 1 of 2

Client: Noble / Tasman Geosciences

Project Manager: Brandon Bruns, Invoice: Tasman Geosciences

Address: 6855 W 119th Ave

E-Mail: bbruns@tasman-geo.com

City/State/Zip: Broomfield CO 80020

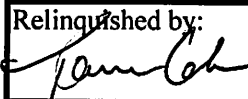

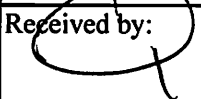
Phone: 303-487-1228

Project Name: Furrow USX AB 15-99HZ

Sampler Name: Tanner Cook

Project Number: _____

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions		
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	GRTEXN	TPH-DRO	PH, EC, SAR				
1	SS22@1'	1/9/2020	14:00	1			X			X				X	X	X			
2	SS23@1'	1/9/2020	13:45	1			X			X				X	X	X			
3	SS24@1'	1/9/2020	13:40	1			X			X				X	X	X			
4	SS25@1'	1/9/2020	13:35	1			X			X				X	X	X			
5	SS26@1'	1/9/2020	14:35	1			X			X				X	X	X			
6	SS27@1'	1/9/2020	13:20	1			X			X				X	X	X			
7	SS28@1'	1/9/2020	14:50	1			X			X				X	X	X			
8	SS29@1'	1/9/2020	13:25	1			X			X				X	X	X			
9	SS30@1'	1/9/2020	13:30	1			X			X				X	X	X			
10	SS31@1'	1/9/2020	14:10	1			X			X				X	X	X			

Relinquished by: 	Date/Time: 1/9/2020 1645	Received by: Tasman Box	Date/Time: 1/9/2020 1645	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard 48 hours <input type="checkbox"/>	Notes:
Relinquished by: Tasman Box	Date/Time: 1/9/2020 1730	Received by: 	Date/Time: 01/09/2020 1730	Sample Integrity: Temperature Upon Receipt: 4.1	
Relinquished by:	Date/Time:	Received by: 	Date/Time:	Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

2001/00.2

Summit Scientific

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Page 2 of 2

Client: Noble Tasman GeosciencesProject Manager: Brandon Bruns, Invoice: Tasman GeosciencesAddress: 6855 W 119th AveE-Mail: bbruns@tasman-geo.comCity/State/Zip: Broomfield CO, 80020Phone: 303-487-1228Project Name: Furrow USX AB 15-99HZSampler Name: Tanner Cook

Project Number: _____

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	GC/MS	TPH-ORO	PH, EC, SAR			
1	SS32@1'	1/9/2020	14:40	1			X			X				X	X	X		
2	SS33@1'	1/9/2020	13:55	1			X			X				X	X	X		
3	SS34@1'	1/9/2020	13:50	1			X			X				X	X	X		
4	SS35@1'	1/9/2020	14:15	1			X			X				X	X	X		
5	SS36@1'	1/9/2020	14:20	1			X			X				X	X	X		
6	SS37@1'	1/9/2020	14:25	1			X			X				X	X	X		
7	SS38@1'	1/9/2020	14:30	1			X			X				X	X	X		
8																		
9																		
10																		

Relinquished by: <u>Tanner Cook</u>	Date/Time: <u>1/9/2020 1645</u>	Received by: <u>Tasman Box</u>	Date/Time: <u>1/9/2020 1645</u>	Turn Around Time (Check)	Notes:
				Same Day <u>X</u> 72 hours <u>—</u>	
				24 hours <u>—</u> Standard <u>—</u>	
				48 hours <u>—</u>	
Relinquished by: <u>Tasman Box</u>	Date/Time: <u>1/9/2020 1730</u>	Received by: <u>[Signature]</u>	Date/Time: <u>01/09/2020 1730</u>	Sample Integrity:	
				Temperature Upon Receipt: <u>4.1</u>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: <u>Yes</u> No	

Sample Receipt Checklist

S2 Work Order

2001100

Client: Noble / Tasman Geo

Client Project ID: Furrow USX AB 15-99 HZ

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

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

Temp (°C)	<u>4.1</u>
-----------	------------

Thermometer ID: 61857155-K

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

Additional Comments (if any):

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

Custodian Printed Name or Initials

KZ

Signature of Custodian

[Signature]

Date/Time

01/09/2020



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/13/20 12:20

SS22@1'
2001100-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/20 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001112	01/09/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/20 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		90.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/20 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001113	01/09/20	01/09/20	EPA 8015M	

Date Sampled: **01/09/20 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		71.8 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/09/20 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1030	11.3	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS22@1'
2001100-01 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Magnesium	328	5.64	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B
Sodium	43.8	5.64	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **01/09/20 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.304	0.100	units	1	2001130	01/10/20	01/10/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/20 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.6		%	1	2001119	01/09/20	01/10/20	Calculation	
pH	8.20		pH Units	"	2001118	"	01/09/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/09/20 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.492	0.0100	mmhos/cm	1	2001117	01/09/20	01/09/20	EPA 120.1	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS23@1'
2001100-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/20 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2001112	01/09/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/20 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		89.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/20 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2001113	01/09/20	01/09/20	EPA 8015M	

Date Sampled: **01/09/20 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		73.8 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/09/20 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	301	11.1	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B	
Magnesium	219	5.56	"	"	"	"	"	"	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS23@1'
2001100-02 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	84.4	5.56	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/09/20 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.903	0.100	units	1	2001130	01/10/20	01/10/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/20 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.9		%	1	2001119	01/09/20	01/10/20	Calculation	
pH	8.13		pH Units	"	2001118	"	01/09/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/09/20 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.420	0.0100	mmhos/cm	1	2001117	01/09/20	01/09/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS24@1'
2001100-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/20 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001112	01/09/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/20 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		86.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/20 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001113	01/09/20	01/09/20	EPA 8015M	

Date Sampled: **01/09/20 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		76.6 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/09/20 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	944	11.0	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B	
Magnesium	417	5.52	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 12:20

SS24@1'
2001100-03 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	51.6	5.52	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/09/20 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.352	0.100	units	1	2001130	01/10/20	01/10/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/20 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.6		%	1	2001119	01/09/20	01/10/20	Calculation	
pH	8.22		pH Units	"	2001118	"	01/09/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/09/20 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.357	0.0100	mmhos/cm	1	2001117	01/09/20	01/09/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 12:20

SS25@1'
2001100-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/20 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001112	01/09/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/20 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		88.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/20 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001113	01/09/20	01/09/20	EPA 8015M	

Date Sampled: **01/09/20 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		77.3 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/09/20 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	611	11.1	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B	
Magnesium	311	5.53	"	"	"	"	"	"	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS25@1'
2001100-04 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	33.8	5.53	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/09/20 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.278	0.100	units	1	2001130	01/10/20	01/10/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/20 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.4		%	1	2001119	01/09/20	01/10/20	Calculation	
pH	7.46		pH Units	"	2001118	"	01/09/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/09/20 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.22	0.0100	mmhos/cm	1	2001117	01/09/20	01/09/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 12:20

SS26@1'
2001100-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/20 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001112	01/09/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/20 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		110 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/20 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001113	01/09/20	01/09/20	EPA 8015M	

Date Sampled: **01/09/20 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		69.7 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/09/20 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	5870	12.1	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B	
Magnesium	946	6.05	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 12:20

SS26@1'
2001100-05 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	249	6.05	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/09/20 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.795	0.100	units	1	2001130	01/10/20	01/10/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/20 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.7		%	1	2001119	01/09/20	01/10/20	Calculation	
pH	7.94		pH Units	"	2001118	"	01/09/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/09/20 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.00	0.0100	mmhos/cm	1	2001117	01/09/20	01/09/20	EPA 120.1	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/13/20 12:20

SS27@1'
2001100-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/20 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001112	01/09/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	0.014	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/20 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		112 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/20 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001113	01/09/20	01/09/20	EPA 8015M	

Date Sampled: **01/09/20 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		81.9 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/09/20 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	5350	11.1	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B	
Magnesium	375	5.54	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS27@1'
2001100-06 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	21.0	5.54	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/09/20 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	ND	0.100	units	1	2001130	01/10/20	01/10/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/20 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.3		%	1	2001119	01/09/20	01/10/20	Calculation	
pH	8.18		pH Units	"	2001118	"	01/09/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/09/20 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.83	0.0100	mmhos/cm	1	2001117	01/09/20	01/09/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 12:20

SS28@1'
2001100-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/20 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001112	01/09/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/20 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		122 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		112 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/20 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001113	01/09/20	01/09/20	EPA 8015M	

Date Sampled: **01/09/20 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		86.3 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/09/20 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2210	10.8	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B	
Magnesium	263	5.39	"	"	"	"	"	"	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS28@1'
2001100-07 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	47.9	5.39	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/09/20 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.257	0.100	units	1	2001130	01/10/20	01/10/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/20 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.7		%	1	2001119	01/09/20	01/10/20	Calculation	
pH	8.64		pH Units	"	2001118	"	01/09/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/09/20 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.21	0.0100	mmhos/cm	1	2001117	01/09/20	01/09/20	EPA 120.1	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS29@1'
2001100-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001112	01/09/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001113	01/09/20	01/09/20	EPA 8015M	

Date Sampled: **01/09/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		85.1 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/09/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	4880	11.0	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B	
Magnesium	339	5.52	"	"	"	"	"	"	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS29@1'
2001100-08 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	30.2	5.52	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/09/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.113	0.100	units	1	2001130	01/10/20	01/10/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.6		%	1	2001119	01/09/20	01/10/20	Calculation	
pH	8.55		pH Units	"	2001118	"	01/09/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/09/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.670	0.0100	mmhos/cm	1	2001117	01/09/20	01/09/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS30@1'
2001100-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/20 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2001112	01/09/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/20 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		110 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/20 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	110	50	mg/kg	1	2001113	01/09/20	01/10/20	EPA 8015M	

Date Sampled: **01/09/20 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		91.3 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/09/20 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	1680	10.5	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B	
Magnesium	313	5.27	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 12:20

SS30@1'
2001100-09 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	59.7	5.27	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/09/20 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.351	0.100	units	1	2001130	01/10/20	01/10/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/20 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.8		%	1	2001119	01/09/20	01/10/20	Calculation	
pH	8.48		pH Units	"	2001118	"	01/09/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/09/20 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.623	0.0100	mmhos/cm	1	2001117	01/09/20	01/09/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS31@1'
2001100-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/20 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001112	01/09/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/20 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/20 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001113	01/09/20	01/10/20	EPA 8015M	

Date Sampled: **01/09/20 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		90.8 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/09/20 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1480	11.9	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B	
Magnesium	694	5.95	"	"	"	"	"	"	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS31@1'
2001100-10 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	473	5.95	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/09/20 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.54	0.100	units	1	2001130	01/10/20	01/10/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/20 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.1		%	1	2001119	01/09/20	01/10/20	Calculation	
pH	8.18		pH Units	"	2001118	"	01/09/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/09/20 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.83	0.0100	mmhos/cm	1	2001117	01/09/20	01/09/20	EPA 120.1	

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS32@1'
2001100-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/20 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001112	01/09/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/20 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		140 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		110 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		113 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/20 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001113	01/09/20	01/10/20	EPA 8015M	

Date Sampled: **01/09/20 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.2 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/09/20 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	4390	11.3	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B	
Magnesium	436	5.64	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS32@1'
2001100-11 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	56.4	5.64	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/09/20 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.217	0.100	units	1	2001130	01/10/20	01/10/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/20 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.6		%	1	2001119	01/09/20	01/10/20	Calculation	
pH	8.21		pH Units	"	2001118	"	01/09/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/09/20 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.16	0.0100	mmhos/cm	1	2001117	01/09/20	01/09/20	EPA 120.1	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS33@1'
2001100-12 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/20 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001112	01/09/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/20 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		111 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/20 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001113	01/09/20	01/10/20	EPA 8015M	

Date Sampled: **01/09/20 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.4 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/09/20 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2130	11.1	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B	
Magnesium	264	5.55	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS33@1'
2001100-12 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	55.0	5.55	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/09/20 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.299	0.100	units	1	2001130	01/10/20	01/10/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/20 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.1		%	1	2001119	01/09/20	01/10/20	Calculation	
pH	8.32		pH Units	"	2001118	"	01/09/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/09/20 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.580	0.0100	mmhos/cm	1	2001117	01/09/20	01/09/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS34@1'
2001100-13 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/20 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001112	01/09/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/20 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		124 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		112 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/20 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001113	01/09/20	01/10/20	EPA 8015M	

Date Sampled: **01/09/20 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		96.7 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/09/20 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	4510	11.3	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B	
Magnesium	494	5.65	"	"	"	"	"	"	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS34@1'
2001100-13 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	98.7	5.65	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/09/20 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.372	0.100	units	1	2001130	01/10/20	01/10/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/20 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.5		%	1	2001119	01/09/20	01/10/20	Calculation	
pH	8.11		pH Units	"	2001118	"	01/09/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/09/20 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.25	0.0100	mmhos/cm	1	2001117	01/09/20	01/09/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS35@1'
2001100-14 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/20 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001112	01/09/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/20 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		120 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		113 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/20 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001113	01/09/20	01/10/20	EPA 8015M	

Date Sampled: **01/09/20 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		96.7 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/09/20 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2900	10.8	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B	
Magnesium	345	5.39	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS35@1'
2001100-14 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	36.7	5.39	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/09/20 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.172	0.100	units	1	2001130	01/10/20	01/10/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/20 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.8		%	1	2001119	01/09/20	01/10/20	Calculation	
pH	8.65		pH Units	"	2001118	"	01/09/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/09/20 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.31	0.0100	mmhos/cm	1	2001117	01/09/20	01/09/20	EPA 120.1	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS36@1'
2001100-15 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/20 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001112	01/09/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/20 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		124 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/20 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001113	01/09/20	01/10/20	EPA 8015M	

Date Sampled: **01/09/20 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		97.0 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/09/20 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2030	12.8	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B	
Magnesium	465	6.41	"	"	"	"	"	"	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS36@1'
2001100-15 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	151	6.41	mg/kg dry	1	2001116	01/09/20	01/09/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/09/20 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.786	0.100	units	1	2001130	01/10/20	01/10/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/20 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	78.0		%	1	2001119	01/09/20	01/10/20	Calculation	
pH	8.09		pH Units	"	2001118	"	01/09/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/09/20 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.91	0.0100	mmhos/cm	1	2001117	01/09/20	01/09/20	EPA 120.1	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS37@1'
2001100-16 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/20 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001112	01/09/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/20 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/20 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001113	01/09/20	01/10/20	EPA 8015M	

Date Sampled: **01/09/20 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		92.1 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/09/20 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1870	11.1	mg/kg dry	1	2001116	01/09/20	01/10/20	EPA 6020B	
Magnesium	346	5.56	"	"	"	"	"	"	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS37@1'
2001100-16 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	63.1	5.56	mg/kg dry	1	2001116	01/09/20	01/10/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/09/20 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.352	0.100	units	1	2001130	01/10/20	01/10/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/20 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.0		%	1	2001119	01/09/20	01/10/20	Calculation	
pH	8.17		pH Units	"	2001118	"	01/09/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/09/20 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.937	0.0100	mmhos/cm	1	2001117	01/09/20	01/09/20	EPA 120.1	

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Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

SS38@1'
2001100-17 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/20 14:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2001112	01/09/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/20 14:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		118 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/20 14:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2001113	01/09/20	01/10/20	EPA 8015M	

Date Sampled: **01/09/20 14:30**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/09/20 14:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	2110	11.1	mg/kg dry	1	2001116	01/09/20	01/10/20	EPA 6020B	
Magnesium	354	5.54	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 12:20

SS38@1'
2001100-17 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	42.0	5.54	mg/kg dry	1	2001116	01/09/20	01/10/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/09/20 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.223	0.100	units	1	2001130	01/10/20	01/10/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/20 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.2		%	1	2001119	01/09/20	01/10/20	Calculation	
pH	8.12		pH Units	"	2001118	"	01/09/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/09/20 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.51	0.0100	mmhos/cm	1	2001117	01/09/20	01/09/20	EPA 120.1	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 2001112 - EPA 5030 Soil MS

Blank (2001112-BLK1)

Prepared: 01/09/20 Analyzed: 01/10/20

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0350		"	0.0400		87.4	23-173			
Surrogate: Toluene-d8	0.0430		"	0.0400		108	20-170			
Surrogate: 4-Bromofluorobenzene	0.0407		"	0.0400		102	21-167			

LCS (2001112-BS1)

Prepared: 01/09/20 Analyzed: 01/10/20

Benzene	0.111	0.0020	mg/kg	0.100		111	70-130			
Toluene	0.127	0.0050	"	0.100		127	70-130			
Ethylbenzene	0.104	0.0050	"	0.100		104	70-130			
m,p-Xylene	0.216	0.010	"	0.200		108	70-130			
o-Xylene	0.0947	0.0050	"	0.100		94.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0351		"	0.0400		87.8	23-173			
Surrogate: Toluene-d8	0.0427		"	0.0400		107	20-170			
Surrogate: 4-Bromofluorobenzene	0.0413		"	0.0400		103	21-167			

Matrix Spike (2001112-MS1)

Source: 2001098-01

Prepared: 01/09/20 Analyzed: 01/10/20

Benzene	0.118	0.0020	mg/kg	0.100	ND	118	70-130			
Toluene	0.131	0.0050	"	0.100	ND	131	70-130			QM-07
Ethylbenzene	0.108	0.0050	"	0.100	ND	108	70-130			
m,p-Xylene	0.224	0.010	"	0.200	ND	112	70-130			
o-Xylene	0.0977	0.0050	"	0.100	ND	97.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0362		"	0.0400		90.4	23-173			
Surrogate: Toluene-d8	0.0438		"	0.0400		109	20-170			
Surrogate: 4-Bromofluorobenzene	0.0420		"	0.0400		105	21-167			

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

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

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

Batch 2001112 - EPA 5030 Soil MS

Matrix Spike Dup (2001112-MSD1)		Source: 2001098-01			Prepared: 01/09/20 Analyzed: 01/10/20					
Benzene	0.112	0.0020	mg/kg	0.100	ND	112	70-130	4.88	30	
Toluene	0.127	0.0050	"	0.100	ND	127	70-130	2.95	30	
Ethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130	2.82	30	
m,p-Xylene	0.217	0.010	"	0.200	ND	108	70-130	3.48	30	
o-Xylene	0.0965	0.0050	"	0.100	ND	96.5	70-130	1.20	30	
Surrogate: 1,2-Dichloroethane-d4	0.0361		"	0.0400		90.2	23-173			
Surrogate: Toluene-d8	0.0434		"	0.0400		109	20-170			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	21-167			

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 12:20

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 2001113 - EPA 3550A

Blank (2001113-BLK1)

Prepared: 01/09/20 Analyzed: 01/10/20

C10-C28 (DRO) ND 50 mg/kg

LCS (2001113-BS1)

Prepared: 01/09/20 Analyzed: 01/10/20

C10-C28 (DRO) 524 50 mg/kg 500 105 70-130

Matrix Spike (2001113-MS1)

Source: 2001098-01

Prepared: 01/09/20 Analyzed: 01/10/20

C10-C28 (DRO) 504 50 mg/kg 500 15.5 97.8 70-130

Matrix Spike Dup (2001113-MSD1)

Source: 2001098-01

Prepared: 01/09/20 Analyzed: 01/10/20

C10-C28 (DRO) 504 50 mg/kg 500 15.5 97.8 70-130 0.0397 20

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/13/20 12:20

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis - Quality Control

Summit Scientific

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

Batch 2001116 - General Preparation

Blank (2001116-BLK1)

Prepared & Analyzed: 01/09/20

Calcium	ND	10.0	mg/kg wet
Magnesium	ND	5.00	"
Sodium	ND	5.00	"

LCS (2001116-BS1)

Prepared & Analyzed: 01/09/20

Calcium	627	10.0	mg/kg wet	500	125	70-130
Magnesium	591	5.00	"	500	118	70-130
Sodium	549	5.00	"	500	110	70-130

Duplicate (2001116-DUP1)

Source: 2001100-01

Prepared & Analyzed: 01/09/20

Calcium	1020	11.3	mg/kg dry	1030	0.419	20
Magnesium	329	5.64	"	328	0.132	20
Sodium	48.8	5.64	"	43.8	10.6	20

Matrix Spike (2001116-MS1)

Source: 2001100-01

Prepared & Analyzed: 01/09/20

Calcium	1460	11.3	mg/kg dry	564	1030	77.4	70-130
Magnesium	959	5.64	"	564	328	112	70-130
Sodium	661	5.64	"	564	43.8	109	70-130

Matrix Spike Dup (2001116-MSD1)

Source: 2001100-01

Prepared & Analyzed: 01/09/20

Calcium	1470	11.3	mg/kg dry	564	1030	78.5	70-130	0.420	25
Magnesium	939	5.64	"	564	328	108	70-130	2.12	25
Sodium	668	5.64	"	564	43.8	111	70-130	1.03	25

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 12:20

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

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

Batch 2001118 - General Preparation

LCS (2001118-BS1)

Prepared & Analyzed: 01/09/20

pH	9.20	pH Units	9.18	100	95-105
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Duplicate (2001118-DUP1)

Source: 2001100-01

Prepared & Analyzed: 01/09/20

pH	8.47	pH Units	8.20	3.24	20
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Batch 2001119 - General Preparation

Duplicate (2001119-DUP1)

Source: 2001100-01

Prepared: 01/09/20 Analyzed: 01/10/20

% Solids	88.4	%	88.6	0.226	20
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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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 12:20

Specific Conductance by EPA Method 120.1 - Quality Control
Summit Scientific

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

Batch 2001117 - General Preparation

Blank (2001117-BLK1)

Prepared & Analyzed: 01/09/20

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (2001117-BS1)

Prepared & Analyzed: 01/09/20

Specific Conductance (EC) 0.784 0.0100 mmhos/cm 0.750 105 90-110

Duplicate (2001117-DUP1)

Source: 2001100-01

Prepared & Analyzed: 01/09/20

Specific Conductance (EC) 0.342 0.0100 mmhos/cm 0.492 36.1 20 QR-04

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 12:20

Notes and Definitions

QR-04	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 13, 2020

Brandon Bruns

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Furrow USX AB15-99HZ

Work Order #2001118

Enclosed are the results of analyses for samples received by Summit Scientific on 01/10/20 17:42. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury

President



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 09:43

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS39@1'	2001118-01	Soil	01/10/20 12:15	01/10/20 17:42
SS40@1'	2001118-02	Soil	01/10/20 12:20	01/10/20 17:42
SS41@1'	2001118-03	Soil	01/10/20 12:25	01/10/20 17:42
SS42@1'	2001118-04	Soil	01/10/20 12:30	01/10/20 17:42
SS43@6"	2001118-05	Soil	01/10/20 12:35	01/10/20 17:42
SS44@6"	2001118-06	Soil	01/10/20 12:40	01/10/20 17:42
SS45@6"	2001118-07	Soil	01/10/20 12:45	01/10/20 17:42
SS46@1'	2001118-08	Soil	01/10/20 12:50	01/10/20 17:42
SS47@1'	2001118-09	Soil	01/10/20 12:55	01/10/20 17:42
SS48@1'	2001118-10	Soil	01/10/20 13:00	01/10/20 17:42
SS49@1'	2001118-11	Soil	01/10/20 13:05	01/10/20 17:42
SS50@6"	2001118-12	Soil	01/10/20 13:10	01/10/20 17:42
SS51@6"	2001118-13	Soil	01/10/20 13:15	01/10/20 17:42
SS52@6"	2001118-14	Soil	01/10/20 13:20	01/10/20 17:42
SS53@6"	2001118-15	Soil	01/10/20 13:25	01/10/20 17:42
SS54@6"	2001118-16	Soil	01/10/20 13:30	01/10/20 17:42
SS55@6"	2001118-17	Soil	01/10/20 13:35	01/10/20 17:42
SS56@6"	2001118-18	Soil	01/10/20 13:40	01/10/20 17:42
SS57@6"	2001118-19	Soil	01/10/20 13:45	01/10/20 17:42
SS58@6"	2001118-20	Soil	01/10/20 13:50	01/10/20 17:42
SS59@6"	2001118-21	Soil	01/10/20 13:55	01/10/20 17:42
SS60@6"	2001118-22	Soil	01/10/20 14:00	01/10/20 17:42
SS61@6"	2001118-23	Soil	01/10/20 14:05	01/10/20 17:42
SS62@6"	2001118-24	Soil	01/10/20 14:10	01/10/20 17:42
SS63@6"	2001118-25	Soil	01/10/20 14:15	01/10/20 17:42
SS64@6"	2001118-26	Soil	01/10/20 14:20	01/10/20 17:42
SS65@6"	2001118-27	Soil	01/10/20 14:25	01/10/20 17:42

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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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ
Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

Summit Scientific

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

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

Summit Scientific

S₂

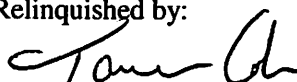

200118.1

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

Page 1 of 3

Client: Noble / Tasman Project Manager: Brandon Bruns, Invoice: Tasman
Address: 6855 W 119th Ave E-Mail: Bbruns@tasman-geo.com
City/State/Zip: Broomfield / CO/ 80020
Phone: 303-487-1228 Project Name: Furrow USX AB15-99HZ
Sampler Name: Tanner Cook Project Number: _____

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR	
1	SS39 @ 1'	11/10/20	1215	1			X			X				X	X	X	
2	SS40 @ 1'	↓	1220	↓													
3	SS41 @ 1'		1225														
4	SS42 @ 1'		1230														
5	SS43 @ 6"		1235														
6	SS44 @ 6"		1240														
7	SS45 @ 6"		1245														
8	SS46 @ 1'		1250														
9	SS47 @ 1'		1255														
10	SS48 @ 1'		↓		1300	↓											

Relinquished by: 	Date/Time: 11/10/20 1730	Received by: Tasman's Lock Box	Date/Time: 11/10/20 1730	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard 48 hours <input type="checkbox"/>	Notes: Results by Monday Morning
Relinquished by: Tasman's Lock Box	Date/Time: 01/10/2020 1730	Received by: 	Date/Time: 01/10/2020 1730	Sample Integrity: 25	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 25 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Summit Scientific

S₂

2001118.2

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

Page 2 of 3

Client: Noble / Tasman Project Manager: Brandon Bruns, Invoice: Tasman

Address: 6855 W 119th Ave E-Mail: Bbruns@tasman-geo.com

City/State/Zip: Broomfield / CO/ 80020

Phone: 303-487-1228 Project Name: Furrow USX AB15-99HZ

Sampler Name: Tanner Cook Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested					Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR		
1	SS49 @ 1'	1/10/20	1305	1			X			X				X	X	X		
2	SS50 @ 6"		1310											X	X	X		
3	SS51 @ 6"		1315															
4	SS52 @ 6"		1320															
5	SS53 @ 6"		1325															
6	SS54 @ 6"		1330															
7	SS55 @ 6"		1335															
8	SS56 @ 6"		1340															
9	SS57 @ 6"		1345															
10	SS58 @ 6"		1350															

Relinquished by: <u>Tanner Cook</u>	Date/Time: <u>1/10/20</u> <u>1730</u>	Received by: <u>Tasman's Lock Box</u>	Date/Time: <u>1/10/20</u> <u>1730</u>	Turn Around Time (Check) Same Day <u>X</u> 72 hours <u>—</u> 24 hours <u>—</u> Standard <u>—</u> 48 hours <u>—</u>	Notes: <u>Results by Monday morning</u>
Relinquished by: <u>Tasman's Lock Box</u>	Date/Time: <u>01/16/2020</u> <u>1730</u>	Received by: <u>[Signature]</u>	Date/Time: <u>01/16/2020</u> <u>1730</u>	Sample Integrity: Temperature Upon Receipt: <u>2.5</u>	
Relinquished by: <u> </u>	Date/Time: <u> </u>	Received by: <u> </u>	Date/Time: <u> </u>	Samples Intact: <u>Yes</u> No <u> </u>	

200118.3

Summit Scientific

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 3 of 3

Client: Noble / Tasman

Project Manager: Brandon Bruns, Invoice: Tasman

Address: 6855 W 119th Ave

E-Mail: Bbruns@tasman-geo.com

City/State/Zip: Broomfield / CO/ 80020

Phone: 303-487-1228

Project Name: Furrow USX AB15-99HZ

Sampler Name: Tanner Cook

Project Number: _____

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR	
1	SS59 @ 6"	1/10/20	1355	1			X			X				X	X	X	
2	SS60 @ 6"		1400														
3	SS61 @ 6"		1405														
4	SS62 @ 6"		1410														
5	SS63 @ 6"		1415														
6	SS64 @ 6"		1420														
7	SS65 @ 6"		1425														
8																	
9																	
10																	

Relinquished by:

Date/Time:
1/10/20
1730

Received by:

Tasman's Lock Box

Date/Time:

1/10/20
1730

Turn Around Time

(Check)

Same Day ☒

72 hours

24 hours

Standard

48 hours

Sample Integrity:

Temperature Upon Receipt: 25

Samples Intact: ☒ Yes No

Notes:

Results by
Monday
morning

Relinquished by:

Tasman's Lock Box

Date/Time:
01/10/2020
1730

Received by:

Date/Time:

01/10/2020 1730

Relinquished by:

Date/Time:

Received by:

Date/Time:

Sample Receipt Checklist

S2 Work Order 200118

Client: NOBLE / TASMAN

Client Project ID: FURROW USX AB15-99HZ

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

☐ ☒ ☐ ☐ ☐

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

Temp (°C)	2.5
-----------	-----

Thermometer ID: 61857155-K

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

Additional Comments (if any):

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

RZ

Custodian Printed Name or Initials

Signature of Custodian

Date/Time



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/13/20 09:43

SS39@1'
2001118-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001153	01/10/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001155	01/10/20	01/10/20	EPA 8015M	

Date Sampled: **01/10/20 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		92.7 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	552	10.9	mg/kg dry	1	2001146	01/10/20	01/10/20	EPA 6020B	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS39@1'
2001118-01 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Magnesium	218	5.47	mg/kg dry	1	2001146	01/10/20	01/10/20	EPA 6020B
Sodium	16.7	5.47	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **01/10/20 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.152	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.4		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	8.02		pH Units	"	2001150	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.291	0.0100	mmhos/cm	1	2001148	01/10/20	01/10/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS40@1'
2001118-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001153	01/10/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		119 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		111 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001155	01/10/20	01/10/20	EPA 8015M	

Date Sampled: **01/10/20 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		91.9 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	578	10.9	mg/kg dry	1	2001146	01/10/20	01/10/20	EPA 6020B	
Magnesium	236	5.46	"	"	"	"	"	"	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS40@1'
2001118-02 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	30.5	5.46	mg/kg dry	1	2001146	01/10/20	01/10/20	EPA 6020B
--------	------	------	-----------	---	---------	----------	----------	-----------

Calculated Analysis

Date Sampled: **01/10/20 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.270	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.5		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	7.80		pH Units	"	2001150	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.265	0.0100	mmhos/cm	1	2001148	01/10/20	01/10/20	EPA 120.1	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 09:43

SS41@1'
2001118-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001153	01/10/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001155	01/10/20	01/10/20	EPA 8015M	

Date Sampled: **01/10/20 12:25**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	606	11.1	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B	
Magnesium	219	5.53	"	"	"	"	"	"	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS41@1'
2001118-03 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	7.18	5.53	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B
--------	------	------	-----------	---	---------	----------	----------	-----------

Calculated Analysis

Date Sampled: **01/10/20 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	ND	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.4		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	7.66		pH Units	"	2001150	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.441	0.0100	mmhos/cm	1	2001148	01/10/20	01/10/20	EPA 120.1	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS42@1'
2001118-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001153	01/10/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		110 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001155	01/10/20	01/10/20	EPA 8015M	

Date Sampled: **01/10/20 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.5 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	344	10.7	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B	
Magnesium	152	5.35	"	"	"	"	"	"	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 09:43

SS42@1'
2001118-04 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	18.7	5.35	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/10/20 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.211	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.5		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	8.13		pH Units	"	2001150	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.675	0.0100	mmhos/cm	1	2001148	01/10/20	01/10/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS43@6"
2001118-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2001153	01/10/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		116 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		110 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2001155	01/10/20	01/10/20	EPA 8015M	

Date Sampled: **01/10/20 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		95.0 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	420	11.2	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B	
Magnesium	181	5.58	"	"	"	"	"	"	

Summit Scientific

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



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 09:43

SS43@6"
2001118-05 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	18.5	5.58	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/10/20 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.190	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.6		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	7.59		pH Units	"	2001150	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.380	0.0100	mmhos/cm	1	2001148	01/10/20	01/10/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS44@6"
2001118-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001153	01/10/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		121 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		110 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001155	01/10/20	01/10/20	EPA 8015M	

Date Sampled: **01/10/20 12:40**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	582	10.9	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B	
Magnesium	221	5.43	"	"	"	"	"	"	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 09:43

SS44@6"
2001118-06 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	15.3	5.43	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/10/20 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.137	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.0		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	7.61		pH Units	"	2001150	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.126	0.0100	mmhos/cm	1	2001148	01/10/20	01/10/20	EPA 120.1	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS45@6"
2001118-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2001153	01/10/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		128 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2001155	01/10/20	01/10/20	EPA 8015M	

Date Sampled: **01/10/20 12:45**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	550	11.0	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B	
Magnesium	227	5.52	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 09:43

SS45@6"
2001118-07 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	40.0	5.52	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/10/20 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.362	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.5		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	7.87		pH Units	"	2001150	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.120	0.0100	mmhos/cm	1	2001148	01/10/20	01/10/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 09:43

SS46@1'
2001118-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001153	01/10/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	0.020	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		114 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	92	50	mg/kg	1	2001155	01/10/20	01/11/20	EPA 8015M	

Date Sampled: **01/10/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.5 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1760	11.0	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B	
Magnesium	468	5.51	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS46@1'
2001118-08 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	362	5.51	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/10/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.98	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.7		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	8.03		pH Units	"	2001150	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.95	0.0100	mmhos/cm	1	2001148	01/10/20	01/10/20	EPA 120.1	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS47@1'
2001118-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001153	01/10/20	01/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.020	0.010	"	"	"	"	"	"	
Naphthalene	0.014	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		119 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		113 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	66	50	mg/kg	1	2001155	01/10/20	01/11/20	EPA 8015M	

Date Sampled: **01/10/20 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.5 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2270	11.2	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B	
Magnesium	303	5.59	"	"	"	"	"	"	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS47@1'
2001118-09 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	22.8	5.59	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/10/20 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.119	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.4		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	8.26		pH Units	"	2001150	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.868	0.0100	mmhos/cm	1	2001148	01/10/20	01/10/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS48@1'
2001118-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001153	01/10/20	01/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	0.013	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		112 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	230	50	mg/kg	1	2001155	01/10/20	01/11/20	EPA 8015M	

Date Sampled: **01/10/20 13:00**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	938	10.8	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B	
Magnesium	194	5.38	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS48@1'
2001118-10 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	24.6	5.38	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/10/20 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.191	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.0		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	8.10		pH Units	"	2001150	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.734	0.0100	mmhos/cm	1	2001148	01/10/20	01/10/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS49@1'
2001118-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001153	01/10/20	01/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		126 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		111 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001155	01/10/20	01/11/20	EPA 8015M	

Date Sampled: **01/10/20 13:05**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1790	10.6	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B	
Magnesium	154	5.29	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS49@1'
2001118-11 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	20.0	5.29	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/10/20 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.122	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.5		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	8.44		pH Units	"	2001150	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.421	0.0100	mmhos/cm	1	2001148	01/10/20	01/10/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS50@6"
2001118-12 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001153	01/10/20	01/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001155	01/10/20	01/11/20	EPA 8015M	

Date Sampled: **01/10/20 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.4 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	851	10.9	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B	
Magnesium	319	5.45	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS50@6"
2001118-12 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	18.0	5.45	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/10/20 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.134	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.7		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	8.00		pH Units	"	2001150	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.495	0.0100	mmhos/cm	1	2001148	01/10/20	01/10/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 09:43

SS51@6"
2001118-13 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001153	01/10/20	01/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		123 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		112 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001155	01/10/20	01/11/20	EPA 8015M	

Date Sampled: **01/10/20 13:15**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	679	10.9	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B	
Magnesium	206	5.46	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 09:43

SS51@6"
2001118-13 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	23.1	5.46	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/10/20 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.199	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.5		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	7.96		pH Units	"	2001150	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.56	0.0100	mmhos/cm	1	2001148	01/10/20	01/10/20	EPA 120.1	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/13/20 09:43

SS52@6"
2001118-14 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001153	01/10/20	01/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	0.011	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		111 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001155	01/10/20	01/11/20	EPA 8015M	

Date Sampled: **01/10/20 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		91.1 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	529	10.3	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B	
Magnesium	149	5.15	"	"	"	"	"	"	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 09:43

SS52@6"
2001118-14 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	184	5.15	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/10/20 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.82	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.0		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	8.83		pH Units	"	2001150	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.298	0.0100	mmhos/cm	1	2001148	01/10/20	01/10/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 09:43

SS53@6"
2001118-15 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001153	01/10/20	01/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001155	01/10/20	01/11/20	EPA 8015M	

Date Sampled: **01/10/20 13:25**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1200	10.9	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B	
Magnesium	222	5.43	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS53@6"
2001118-15 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	18.7	5.43	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/10/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.130	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.0		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	8.65		pH Units	"	2001150	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.259	0.0100	mmhos/cm	1	2001148	01/10/20	01/10/20	EPA 120.1	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS54@6"
2001118-16 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001153	01/10/20	01/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001155	01/10/20	01/11/20	EPA 8015M	

Date Sampled: **01/10/20 13:30**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	398	10.4	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B	
Magnesium	131	5.21	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 09:43

SS54@6"
2001118-16 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	5.58	5.21	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/10/20 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	ND	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.9		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	8.22		pH Units	"	2001150	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.608	0.0100	mmhos/cm	1	2001148	01/10/20	01/10/20	EPA 120.1	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 09:43

SS55@6"
2001118-17 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001153	01/10/20	01/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		118 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001155	01/10/20	01/11/20	EPA 8015M	

Date Sampled: **01/10/20 13:35**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2180	10.9	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B	
Magnesium	173	5.43	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 09:43

SS55@6"
2001118-17 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	35.7	5.43	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/10/20 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.198	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.1		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	8.45		pH Units	"	2001150	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.388	0.0100	mmhos/cm	1	2001148	01/10/20	01/10/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS56@6"
2001118-18 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001153	01/10/20	01/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	63	50	mg/kg	1	2001155	01/10/20	01/11/20	EPA 8015M	

Date Sampled: **01/10/20 13:40**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	560	10.4	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B	
Magnesium	132	5.20	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS56@6"
2001118-18 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	46.6	5.20	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/10/20 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.460	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.2		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	7.90		pH Units	"	2001150	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.907	0.0100	mmhos/cm	1	2001148	01/10/20	01/10/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS57@6"
2001118-19 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001153	01/10/20	01/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001155	01/10/20	01/11/20	EPA 8015M	

Date Sampled: **01/10/20 13:45**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1600	10.7	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B	
Magnesium	194	5.35	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 09:43

SS57@6"
2001118-19 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	65.9	5.35	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/10/20 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.414	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.4		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	8.00		pH Units	"	2001150	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.882	0.0100	mmhos/cm	1	2001148	01/10/20	01/10/20	EPA 120.1	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS58@6"
2001118-20 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001153	01/10/20	01/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		124 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001155	01/10/20	01/11/20	EPA 8015M	

Date Sampled: **01/10/20 13:50**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	ND	11.1	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B	
Magnesium	18.6	5.55	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 09:43

SS58@6"
2001118-20 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	ND	5.55	mg/kg dry	1	2001146	01/10/20	01/11/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/10/20 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.180	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.1		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	8.15		pH Units	"	2001150	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.31	0.0100	mmhos/cm	1	2001148	01/10/20	01/10/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 09:43

SS59@6"
2001118-21 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001154	01/10/20	01/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		128 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		115 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001156	01/10/20	01/11/20	EPA 8015M	

Date Sampled: **01/10/20 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		92.5 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2060	10.9	mg/kg dry	1	2001147	01/10/20	01/10/20	EPA 6020B	
Magnesium	402	5.46	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS59@6"
2001118-21 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	70.5	5.46	mg/kg dry	1	2001147	01/10/20	01/10/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/10/20 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.372	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.5		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	7.91		pH Units	"	2001151	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.00	0.0100	mmhos/cm	1	2001149	01/10/20	01/10/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS60@6"
2001118-22 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001154	01/10/20	01/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.8 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001156	01/10/20	01/11/20	EPA 8015M	

Date Sampled: **01/10/20 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		96.3 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2090	11.1	mg/kg dry	1	2001147	01/10/20	01/10/20	EPA 6020B	
Magnesium	462	5.56	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS60@6"
2001118-22 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	77.1	5.56	mg/kg dry	1	2001147	01/10/20	01/10/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/10/20 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.398	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.9		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	7.75		pH Units	"	2001151	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.821	0.0100	mmhos/cm	1	2001149	01/10/20	01/10/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS61@6"
2001118-23 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001154	01/10/20	01/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.0 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001156	01/10/20	01/11/20	EPA 8015M	

Date Sampled: **01/10/20 14:05**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1160	10.5	mg/kg dry	1	2001147	01/10/20	01/10/20	EPA 6020B	
Magnesium	416	5.24	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 09:43

SS61@6"
2001118-23 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	63.3	5.24	mg/kg dry	1	2001147	01/10/20	01/10/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/10/20 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.406	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.4		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	8.49		pH Units	"	2001151	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.313	0.0100	mmhos/cm	1	2001149	01/10/20	01/10/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS62@6"
2001118-24 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001154	01/10/20	01/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001156	01/10/20	01/11/20	EPA 8015M	

Date Sampled: **01/10/20 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		91.2 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	939	11.1	mg/kg dry	1	2001147	01/10/20	01/10/20	EPA 6020B	
Magnesium	376	5.54	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS62@6"
2001118-24 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	35.2	5.54	mg/kg dry	1	2001147	01/10/20	01/10/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/10/20 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.245	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.3		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	8.10		pH Units	"	2001151	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.351	0.0100	mmhos/cm	1	2001149	01/10/20	01/10/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS63@6"
2001118-25 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001154	01/10/20	01/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		110 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	61	50	mg/kg	1	2001156	01/10/20	01/11/20	EPA 8015M	

Date Sampled: **01/10/20 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		97.4 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	832	10.9	mg/kg dry	1	2001147	01/10/20	01/10/20	EPA 6020B	
Magnesium	329	5.43	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS63@6"
2001118-25 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	32.8	5.43	mg/kg dry	1	2001147	01/10/20	01/10/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/10/20 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.244	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.1		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	8.37		pH Units	"	2001151	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.361	0.0100	mmhos/cm	1	2001149	01/10/20	01/10/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS64@6"
2001118-26 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001154	01/10/20	01/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		130 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		116 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2001156	01/10/20	01/11/20	EPA 8015M	

Date Sampled: **01/10/20 14:20**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	600	10.5	mg/kg dry	1	2001147	01/10/20	01/10/20	EPA 6020B	
Magnesium	214	5.23	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 09:43

SS64@6"
2001118-26 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	54.2	5.23	mg/kg dry	1	2001147	01/10/20	01/10/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/10/20 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.484	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.6		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	8.60		pH Units	"	2001151	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.327	0.0100	mmhos/cm	1	2001149	01/10/20	01/10/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS65@6"
2001118-27 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/20 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2001154	01/10/20	01/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	0.014	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/20 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		119 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		119 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/20 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	170	50	mg/kg	1	2001156	01/10/20	01/11/20	EPA 8015M	

Date Sampled: **01/10/20 14:25**

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

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **01/10/20 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1450	10.9	mg/kg dry	1	2001147	01/10/20	01/10/20	EPA 6020B	
Magnesium	317	5.46	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

SS65@6"
2001118-27 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	63.2	5.46	mg/kg dry	1	2001147	01/10/20	01/10/20	EPA 6020B
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Calculated Analysis

Date Sampled: **01/10/20 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.392	0.100	units	1	2001165	01/13/20	01/13/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/20 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.6		%	1	2001152	01/10/20	01/13/20	Calculation	
pH	8.08		pH Units	"	2001151	01/10/20	01/10/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/10/20 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.848	0.0100	mmhos/cm	1	2001149	01/10/20	01/10/20	EPA 120.1	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 2001153 - EPA 5030 Soil MS

Blank (2001153-BLK1)

Prepared: 01/10/20 Analyzed: 01/11/20

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0489		"	0.0400		122	23-173			
Surrogate: Toluene-d8	0.0455		"	0.0400		114	20-170			
Surrogate: 4-Bromofluorobenzene	0.0440		"	0.0400		110	21-167			

LCS (2001153-BS1)

Prepared: 01/10/20 Analyzed: 01/11/20

Benzene	0.0928	0.0020	mg/kg	0.100		92.8	70-130			
Toluene	0.0728	0.0050	"	0.100		72.8	70-130			
Ethylbenzene	0.0812	0.0050	"	0.100		81.2	70-130			
m,p-Xylene	0.152	0.010	"	0.200		76.0	70-130			
o-Xylene	0.0795	0.0050	"	0.100		79.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0352		"	0.0400		87.9	23-173			
Surrogate: Toluene-d8	0.0417		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0401		"	0.0400		100	21-167			

Matrix Spike (2001153-MS1)

Source: 2001118-01

Prepared: 01/10/20 Analyzed: 01/11/20

Benzene	0.0892	0.0020	mg/kg	0.100	ND	89.2	70-130			
Toluene	0.0789	0.0050	"	0.100	ND	78.9	70-130			
Ethylbenzene	0.0763	0.0050	"	0.100	ND	76.3	70-130			
m,p-Xylene	0.144	0.010	"	0.200	ND	72.1	70-130			
o-Xylene	0.0753	0.0050	"	0.100	ND	75.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0347		"	0.0400		86.7	23-173			
Surrogate: Toluene-d8	0.0417		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.5	21-167			

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/13/20 09:43

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 2001153 - EPA 5030 Soil MS

Matrix Spike Dup (2001153-MSD1)

Source: 2001118-01

Prepared: 01/10/20 Analyzed: 01/11/20

Benzene	0.0891	0.0020	mg/kg	0.100	ND	89.1	70-130	0.0337	30	
Toluene	0.0780	0.0050	"	0.100	ND	78.0	70-130	1.15	30	
Ethylbenzene	0.0764	0.0050	"	0.100	ND	76.4	70-130	0.118	30	
m,p-Xylene	0.145	0.010	"	0.200	ND	72.4	70-130	0.436	30	
o-Xylene	0.0768	0.0050	"	0.100	ND	76.8	70-130	1.97	30	
Surrogate: 1,2-Dichloroethane-d4	0.0372		"	0.0400		92.9	23-173			
Surrogate: Toluene-d8	0.0418		"	0.0400		105	20-170			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.7	21-167			

Batch 2001154 - EPA 5030 Soil MS

Blank (2001154-BLK1)

Prepared: 01/10/20 Analyzed: 01/11/20

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0484		"	0.0400		121	23-173			
Surrogate: Toluene-d8	0.0448		"	0.0400		112	20-170			
Surrogate: 4-Bromofluorobenzene	0.0427		"	0.0400		107	21-167			

LCS (2001154-BS1)

Prepared: 01/10/20 Analyzed: 01/11/20

Benzene	0.0832	0.0020	mg/kg	0.100		83.2	70-130			
Toluene	0.0785	0.0050	"	0.100		78.5	70-130			
Ethylbenzene	0.0851	0.0050	"	0.100		85.1	70-130			
m,p-Xylene	0.160	0.010	"	0.200		80.0	70-130			
o-Xylene	0.0824	0.0050	"	0.100		82.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0360		"	0.0400		90.0	23-173			
Surrogate: Toluene-d8	0.0418		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		100	21-167			

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/13/20 09:43

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 2001154 - EPA 5030 Soil MS

Matrix Spike (2001154-MS1)		Source: 2001118-21			Prepared: 01/10/20 Analyzed: 01/11/20					
Benzene	0.0742	0.0020	mg/kg	0.100	ND	74.2	70-130			
Toluene	0.0751	0.0050	"	0.100	ND	75.1	70-130			
Ethylbenzene	0.0811	0.0050	"	0.100	ND	81.1	70-130			
m,p-Xylene	0.152	0.010	"	0.200	ND	75.8	70-130			
o-Xylene	0.0813	0.0050	"	0.100	ND	81.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0385		"	0.0400		96.3	23-173			
Surrogate: Toluene-d8	0.0429		"	0.0400		107	20-170			
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0400		98.9	21-167			
Matrix Spike Dup (2001154-MSD1)		Source: 2001118-21			Prepared: 01/10/20 Analyzed: 01/11/20					
Benzene	0.0784	0.0020	mg/kg	0.100	ND	78.4	70-130	5.42	30	
Toluene	0.0820	0.0050	"	0.100	ND	82.0	70-130	8.71	30	
Ethylbenzene	0.0866	0.0050	"	0.100	ND	86.6	70-130	6.59	30	
m,p-Xylene	0.162	0.010	"	0.200	ND	80.8	70-130	6.38	30	
o-Xylene	0.0847	0.0050	"	0.100	ND	84.7	70-130	4.01	30	
Surrogate: 1,2-Dichloroethane-d4	0.0398		"	0.0400		99.5	23-173			
Surrogate: Toluene-d8	0.0413		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	21-167			

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 2001155 - EPA 3550A

Blank (2001155-BLK1)

Prepared: 01/10/20 Analyzed: 01/11/20

C10-C28 (DRO) ND 50 mg/kg

LCS (2001155-BS1)

Prepared: 01/10/20 Analyzed: 01/11/20

C10-C28 (DRO) 539 50 mg/kg 500 108 70-130

Matrix Spike (2001155-MS1)

Source: 2001118-01

Prepared: 01/10/20 Analyzed: 01/11/20

C10-C28 (DRO) 458 50 mg/kg 500 17.9 88.1 70-130

Matrix Spike Dup (2001155-MSD1)

Source: 2001118-01

Prepared: 01/10/20 Analyzed: 01/11/20

C10-C28 (DRO) 480 50 mg/kg 500 17.9 92.4 70-130 4.59 20

Batch 2001156 - EPA 3550A

Blank (2001156-BLK1)

Prepared: 01/10/20 Analyzed: 01/11/20

C10-C28 (DRO) ND 50 mg/kg

LCS (2001156-BS1)

Prepared: 01/10/20 Analyzed: 01/11/20

C10-C28 (DRO) 496 50 mg/kg 500 99.2 70-130

Matrix Spike (2001156-MS1)

Source: 2001120-01

Prepared: 01/10/20 Analyzed: 01/11/20

C10-C28 (DRO) 504 50 mg/kg 500 10.6 98.6 70-130

Matrix Spike Dup (2001156-MSD1)

Source: 2001120-01

Prepared: 01/10/20 Analyzed: 01/11/20

C10-C28 (DRO) 489 50 mg/kg 500 10.6 95.7 70-130 2.95 20

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/13/20 09:43

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis - Quality Control

Summit Scientific

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

Batch 2001146 - General Preparation

Blank (2001146-BLK1)

Prepared & Analyzed: 01/10/20

Calcium	ND	10.0	mg/kg wet
Magnesium	ND	5.00	"
Sodium	ND	5.00	"

LCS (2001146-BS1)

Prepared & Analyzed: 01/10/20

Calcium	580	10.0	mg/kg wet	500	116	70-130
Magnesium	536	5.00	"	500	107	70-130
Sodium	488	5.00	"	500	97.5	70-130

Duplicate (2001146-DUP1)

Source: 2001118-01

Prepared & Analyzed: 01/10/20

Calcium	585	10.9	mg/kg dry	552	5.81	20
Magnesium	211	5.47	"	218	3.23	20
Sodium	18.5	5.47	"	16.7	10.1	20

Matrix Spike (2001146-MS1)

Source: 2001118-01

Prepared & Analyzed: 01/10/20

Calcium	1060	10.9	mg/kg dry	547	552	92.3	70-130
Magnesium	769	5.47	"	547	218	101	70-130
Sodium	543	5.47	"	547	16.7	96.3	70-130

Matrix Spike Dup (2001146-MSD1)

Source: 2001118-01

Prepared & Analyzed: 01/10/20

Calcium	1030	10.9	mg/kg dry	547	552	87.9	70-130	2.29	25
Magnesium	761	5.47	"	547	218	99.3	70-130	1.02	25
Sodium	550	5.47	"	547	16.7	97.5	70-130	1.18	25

Batch 2001147 - General Preparation

Blank (2001147-BLK1)

Prepared & Analyzed: 01/10/20

Calcium	ND	10.0	mg/kg wet
Magnesium	ND	5.00	"
Sodium	ND	5.00	"

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 09:43

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis - Quality Control

Summit Scientific

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

Batch 2001147 - General Preparation

LCS (2001147-BS1)

Prepared & Analyzed: 01/10/20

Calcium	509	10.0	mg/kg wet	500		102	70-130
Magnesium	540	5.00	"	500		108	70-130
Sodium	495	5.00	"	500		99.0	70-130

Duplicate (2001147-DUP1)

Source: 2001118-21

Prepared & Analyzed: 01/10/20

Calcium	1840	10.9	mg/kg dry		2060		11.4	20
Magnesium	379	5.46	"		402		5.91	20
Sodium	64.0	5.46	"		70.5		9.56	20

Matrix Spike (2001147-MS1)

Source: 2001118-21

Prepared & Analyzed: 01/10/20

Calcium	2500	10.9	mg/kg dry	546	2060	80.2	70-130
Magnesium	870	5.46	"	546	402	85.6	70-130
Sodium	604	5.46	"	546	70.5	97.7	70-130

Matrix Spike Dup (2001147-MSD1)

Source: 2001118-21

Prepared & Analyzed: 01/10/20

Calcium	2500	10.9	mg/kg dry	546	2060	79.6	70-130	0.121	25
Magnesium	963	5.46	"	546	402	103	70-130	10.2	25
Sodium	631	5.46	"	546	70.5	103	70-130	4.29	25

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/13/20 09:43

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

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

Batch 2001150 - General Preparation

LCS (2001150-BS1)				Prepared & Analyzed: 01/10/20						
pH	9.12		pH Units	9.18		99.3	95-105			
Duplicate (2001150-DUP1)				Source: 2001118-01		Prepared & Analyzed: 01/10/20				
pH	8.03		pH Units		8.02			0.125	20	

Batch 2001151 - General Preparation

LCS (2001151-BS1)				Prepared & Analyzed: 01/10/20						
pH	9.12		pH Units	9.18		99.3	95-105			
Duplicate (2001151-DUP1)				Source: 2001118-21		Prepared & Analyzed: 01/10/20				
pH	7.87		pH Units		7.91			0.507	20	

Batch 2001152 - General Preparation

Duplicate (2001152-DUP1)				Source: 2001118-01		Prepared: 01/10/20 Analyzed: 01/13/20				
% Solids	91.6		%		91.4			0.219	20	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 09:43

Specific Conductance by EPA Method 120.1 - Quality Control
Summit Scientific

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

Batch 2001148 - General Preparation

Blank (2001148-BLK1)

Prepared & Analyzed: 01/10/20

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (2001148-BS1)

Prepared & Analyzed: 01/10/20

Specific Conductance (EC) 0.700 0.0100 mmhos/cm 0.750 93.3 90-110

Duplicate (2001148-DUP1)

Source: 2001118-01

Prepared & Analyzed: 01/10/20

Specific Conductance (EC) 0.381 0.0100 mmhos/cm 0.291 26.7 20 QR-04

Batch 2001149 - General Preparation

Blank (2001149-BLK1)

Prepared & Analyzed: 01/10/20

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (2001149-BS1)

Prepared & Analyzed: 01/10/20

Specific Conductance (EC) 0.700 0.0100 mmhos/cm 0.750 93.3 90-110

Duplicate (2001149-DUP1)

Source: 2001118-21

Prepared & Analyzed: 01/10/20

Specific Conductance (EC) 1.05 0.0100 mmhos/cm 1.00 4.58 20

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Furrow USX AB15-99HZ

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/13/20 09:43

Notes and Definitions

QR-04	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
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