



DUNCAN D20-12, 20-13

Fourth Quarter 2022 Site Monitoring and Remediation Data

INTRODUCTION

This Fourth Quarter 2022 Site Monitoring and Remediation Data presents the results of groundwater sampling activities and operational data of the Air Sparge (AS) remediation system (System) at the Duncan D20-12, 20-13 site (Site).

Fourth Quarter 2022 field activities were performed by Tasman, Inc on behalf of Noble Energy, Inc to further evaluate groundwater conditions and conduct remediation activities at the Site. The data collected was used to develop the groundwater summary tables and figures and to optimize remediation system operations.

PROJECT INFORMATION

Spill Tracking # 459804
Remediation # 12461

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GROUNDWATER SAMPLING SUMMARY

Groundwater Level Measurements and Sampling

Fourth Quarter 2022 groundwater monitoring activities, including the measurement of groundwater elevations from all eight Site monitoring wells and collection of groundwater samples, were performed at the Site on November 22, 2022.

Groundwater Analytical Results

Monitoring wells BH01 and BH05 are in exceedance of COGCC Table 915-1 standards for benzene and 1,2,4-Trimethylbenzene.

Monitoring well BH06 was used to calculate the background concentration standard for inorganic analytes at the Site. Based on background inorganic results for chloride at monitoring well BH06, all monitoring wells are compliant with the COGCC Table 915-1 chloride standard.

REMEDIATION SUMMARY

Air Sparge Operational Data (August 18, 2022 – November 7, 2022)

On May 27, 2021, Tasman installed a solar air sparge remediation system and was connected to the five previously installed air sparge wells. During the Third Quarter 2022 operational period, the System operated at an average flow rate of 0.90 cubic feet per minute (cfm) and at an average pressure of 5.68 pounds per square inch (psi). Between August 18, 2022 – November 7, 2022, the System ran for an average of 9.57 hours per day.

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TABLE 1
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - DUNCAN D20-12, 20-13



| Monitoring Well ID | Date | Top of Casing Elevation (ft. AMSL) | Total Depth (ft. BTOC) | Depth to Water (ft.) | Depth to LNAPL (ft.) | LNAPL Thickness (ft.) | Groundwater Elevation* (ft. AMSL) |
|--------------------|----------|------------------------------------|------------------------|----------------------|----------------------|-----------------------|-----------------------------------|
| BH01 | 02/24/21 | 4772.46 | 19.87 | 6.33 | ND | ND | 4764.16 |
| BH01 | 05/27/21 | 4772.46 | 20.63 | 5.08 | ND | ND | 4765.41 |
| BH01 | 09/21/21 | 4772.46 | 20.55 | 7.38 | ND | ND | 4763.11 |
| BH01 | 11/12/21 | 4772.46 | 20.58 | 7.35 | ND | ND | 4763.14 |
| BH01 | 02/25/22 | 4772.46 | 20.58 | 7.24 | ND | ND | 4763.25 |
| BH01 | 05/05/22 | 4772.46 | 20.57 | 7.04 | ND | ND | 4763.45 |
| BH01 | 08/17/22 | 4772.46 | 20.50 | 7.93 | ND | ND | 4762.56 |
| BH01 | 11/22/22 | 4772.46 | 20.33 | 8.24 | ND | ND | 4762.25 |
| BH02 | 02/24/21 | 4773.47 | 17.13 | 6.49 | ND | ND | 4764.12 |
| BH02 | 05/27/21 | 4773.47 | 17.07 | 5.25 | ND | ND | 4765.36 |
| BH02 | 09/21/21 | 4773.47 | 17.07 | 7.55 | ND | ND | 4763.06 |
| BH02 | 11/12/21 | 4773.47 | 17.04 | 7.55 | ND | ND | 4763.06 |
| BH02 | 02/25/22 | 4773.47 | 16.94 | 7.42 | ND | ND | 4763.19 |
| BH02 | 05/05/22 | 4773.47 | 16.90 | 7.21 | ND | ND | 4763.40 |
| BH02 | 08/17/22 | 4773.47 | 16.89 | 8.10 | ND | ND | 4762.51 |
| BH02 | 11/22/22 | 4773.47 | 16.75 | 8.43 | ND | ND | 4762.18 |
| BH03 | 02/24/21 | 4770.68 | 13.60 | 6.85 | ND | ND | 4764.24 |
| BH03 | 05/27/21 | 4770.68 | 13.60 | 5.60 | ND | ND | 4765.49 |
| BH03 | 09/21/21 | 4770.68 | 14.60 | 7.90 | ND | ND | 4763.19 |
| BH03 | 11/12/21 | 4770.68 | 13.56 | 7.92 | ND | ND | 4763.17 |
| BH03 | 02/25/22 | 4770.68 | 13.54 | 7.79 | ND | ND | 4763.30 |
| BH03 | 05/05/22 | 4770.68 | 13.56 | 7.52 | ND | ND | 4763.57 |
| BH03 | 08/17/22 | 4770.68 | 13.52 | 8.45 | ND | ND | 4762.64 |
| BH03 | 11/22/22 | 4770.68 | 13.50 | 8.81 | ND | ND | 4762.28 |
| BH04 | 02/24/21 | 4773.76 | 19.97 | 6.70 | ND | ND | 4764.12 |
| BH04 | 05/27/21 | 4773.76 | 19.78 | 5.37 | ND | ND | 4765.45 |
| BH04 | 09/21/21 | 4773.76 | 16.69 | 7.67 | ND | ND | 4763.15 |
| BH04 | 11/12/21 | 4773.76 | 16.86 | 7.66 | ND | ND | 4763.16 |
| BH04 | 02/25/22 | 4773.76 | 16.87 | 7.54 | ND | ND | 4763.28 |
| BH04 | 05/05/22 | 4773.76 | 16.87 | 7.31 | ND | ND | 4763.51 |
| BH04 | 08/17/22 | 4773.76 | 16.86 | 8.23 | ND | ND | 4762.59 |
| BH04 | 11/22/22 | 4773.76 | 16.87 | 8.58 | ND | ND | 4762.24 |
| BH05 | 02/24/21 | 4772.36 | 18.85 | 6.53 | ND | ND | 4764.15 |
| BH05 | 05/27/21 | 4772.36 | 18.70 | 5.29 | ND | ND | 4765.39 |
| BH05 | 09/21/21 | 4772.36 | 18.71 | 7.57 | ND | ND | 4763.11 |
| BH05 | 11/12/21 | 4772.36 | 18.61 | 7.53 | ND | ND | 4763.15 |
| BH05 | 02/25/22 | 4772.36 | 18.30 | 7.43 | ND | ND | 4763.25 |
| BH05 | 05/05/22 | 4772.36 | 18.27 | 7.16 | ND | ND | 4763.52 |
| BH05 | 08/17/22 | 4772.36 | 18.24 | 8.11 | ND | ND | 4762.57 |
| BH05 | 11/22/22 | 4772.36 | 17.82 | 8.43 | ND | ND | 4762.25 |
| BH06 | 02/24/21 | 4772.64 | 16.55 | 6.48 | ND | ND | 4764.23 |
| BH06 | 05/27/21 | 4772.64 | 16.53 | 5.22 | ND | ND | 4765.49 |
| BH06 | 09/21/21 | 4772.64 | 16.53 | 8.53 | ND | ND | 4762.18 |
| BH06 | 11/12/21 | 4772.64 | 16.55 | 7.51 | ND | ND | 4763.20 |
| BH06 | 02/25/22 | 4772.64 | 16.55 | 7.43 | ND | ND | 4763.28 |
| BH06 | 05/05/22 | 4772.64 | 16.53 | 7.13 | ND | ND | 4763.58 |
| BH06 | 08/17/22 | 4772.64 | 16.48 | 8.09 | ND | ND | 4762.62 |
| BH06 | 11/22/22 | 4772.64 | 16.47 | 8.42 | ND | ND | 4762.29 |
| BH07 | 02/24/21 | 4772.12 | 16.04 | 6.01 | ND | ND | 4764.02 |
| BH07 | 05/27/21 | 4772.12 | 16.04 | 4.74 | ND | ND | 4765.29 |
| BH07 | 09/21/21 | 4772.12 | 16.04 | 7.07 | ND | ND | 4762.96 |
| BH07 | 11/12/21 | 4772.12 | 16.04 | 7.04 | ND | ND | 4762.99 |
| BH07 | 02/25/22 | 4772.12 | 16.05 | 6.93 | ND | ND | 4763.10 |
| BH07 | 05/05/22 | 4772.12 | 16.05 | 6.66 | ND | ND | 4763.37 |
| BH07 | 08/17/22 | 4772.12 | 16.04 | 7.61 | ND | ND | 4762.42 |
| BH07 | 11/22/22 | 4772.12 | 14.23 | 6.10 | ND | ND | 4763.93 |

TABLE 1
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - DUNCAN D20-12, 20-13



| Monitoring Well ID | Date | Top of Casing Elevation (ft. AMSL) | Total Depth (ft. BTOC) | Depth to Water (ft.) | Depth to LNAPL (ft.) | LNAPL Thickness (ft.) | Groundwater Elevation* (ft. AMSL) |
|--------------------|----------|------------------------------------|------------------------|----------------------|----------------------|-----------------------|-----------------------------------|
| BH08 | 02/24/21 | 4770.79 | 12.66 | 6.97 | ND | ND | 4763.89 |
| BH08 | 05/27/21 | 4770.79 | 12.76 | 5.71 | ND | ND | 4765.15 |
| BH08 | 09/21/21 | 4770.79 | 12.76 | 8.03 | ND | ND | 4762.83 |
| BH08 | 11/12/21 | 4770.79 | 12.89 | 8.00 | ND | ND | 4762.86 |
| BH08 | 02/25/22 | 4770.79 | 12.89 | 7.89 | ND | ND | 4762.97 |
| BH08 | 05/05/22 | 4770.79 | 12.94 | 7.62 | ND | ND | 4763.24 |
| BH08 | 08/17/22 | 4770.79 | 12.90 | 5.61 | ND | ND | 4765.25 |
| BH08 | 11/22/22 | 4770.79 | 12.87 | 8.87 | ND | ND | 4761.99 |

Notes:

⁽¹⁾ Groundwater elevation data collected prior to January 2021 can be referenced in *Duncan D20-12, 20-13 Fourth Quarter 2021 Site Monitoring Data* (COGCC Document # : 402616302)

⁽²⁾ Depth to water measurements were collected from top of casing and adjusted using survey data to reflect depth of water from ground surface.

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

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

LNAPL relative density was estimated to be approximately 0.75

Definitions:

ft. = Feet
 AMSL = Above mean sea level
 BTOC = Below top of casing
 BGS = Below ground surface
 LNAPL = Light non-aqueous phase liquid
 ND = No LNAPL detected

TABLE 2
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - DUNCAN D20-12, 20-13



| Monitoring Well ID | Date | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | Total Xylenes (µg/L) | Naphthalene (µg/L) | 1,2,4-TMB (µg/L) | 1,3,5-TMB (µg/L) | TDS (mg/L) | Chloride Ion (mg/L) | Sulfate Ion (mg/L) |
|---|----------|----------------|----------------|---------------------|----------------------|--------------------|------------------|------------------|------------------------------|-------------------------------------|-------------------------------------|
| COGCC Groundwater Standard⁽¹⁾ | | 5 | 560 | 700 | 1,400 | 140 | 67 | 67 | <1.25 x Background | 250 or <1.25 x Background | 250 or <1.25 x Background |
| BH01 | 02/24/21 | 560 | <1.0 | 650 | 1,400 | 330 | 780 | 1.4 | 2,620 | 731 | 1,070 |
| BH01 | 05/27/21 | 620 | <1.0 | 210 | 470 | 160 | 680 | 3.9 | 2,940 | 758 | 1,380 |
| BH01 | 09/21/21 | 460 | 2.5 | 250 | 740 | 250 | 380 | 1.6 | NA | 811 | NA |
| BH01 | 11/12/21 | 150 | 1.3 | 20 | 210 | 20 | 120 | 19 | NA | 796 | NA |
| BH01 | 02/25/22 | 150 | <1.0 | 110 | 170 | 17 | 170 | 1.1 | NA | 622 | NA |
| BH01 | 05/05/22 | 370 | <1.0 | 250 | 690 | 140 | 21 | 15 | NA | 653 | NA |
| BH01 | 08/17/22 | 280 | <1.0 | 210 | 170 | 19 | 250 | 1.3 | NA | 580 | NA |
| BH01 | 11/22/22 | 250 | <1.0 | 260 | 220 | 4 | 380 | <1.0 | NA | 421 | NA |
| BH02 | 02/24/21 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 2,610 | 563 | 2,270 |
| BH02 | 05/27/21 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 2,830 | 598 | 2,670 |
| BH02 | 09/21/21 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 655 | NA |
| BH02 | 11/12/21 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 684 | NA |
| BH02 | 02/25/22 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 543 | NA |
| BH02 | 05/05/22 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 548 | NA |
| BH02 | 08/17/22 | <1.0 | <1.0 | <1.0 | <2.0 | 10 | 2.3 | <1.0 | NA | 518 | NA |
| BH02 | 11/22/22 | <1.0 | <1.0 | <1.0 | <2.0 | 10 | 2.3 | <1.0 | NA | 531 | NA |
| BH03 ⁽³⁾ | 02/24/21 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 2,470 | 507 | 2,070 |
| BH03 ⁽³⁾ | 05/27/21 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 2,950 | 637 | 2,710 |
| BH03 ⁽³⁾ | 09/21/21 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 599 | NA |
| BH03 | 11/12/21 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 648 | NA |
| BH03 | 02/25/22 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 424 | NA |
| BH03 | 05/05/22 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 470 | NA |
| BH03 | 08/17/22 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 420 | NA |
| BH03 | 11/22/22 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 470 | NA |
| BH04 | 02/24/21 | <1.0 | <1.0 | <1.0 | 12 | 5.8 | 14 | 1.1 | 2,790 | 668 | 2,510 |
| BH04 | 05/27/21 | <1.0 | <1.0 | 3.6 | 12 | 4.3 | 8.3 | <1.0 | 3,150 | 736 | 2,910 |
| BH04 | 09/21/21 | <1.0 | <1.0 | 8.6 | 11 | 2.2 | 30 | <1.0 | NA | 750 | NA |
| BH04 | 11/12/21 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 755 | NA |
| BH04 | 02/25/22 | <1.0 | <1.0 | 5.2 | 8.9 | <1.0 | 21 | 2.6 | NA | 565 | NA |
| BH04 | 05/05/22 | <1.0 | <1.0 | <1.0 | 13 | 2.8 | 2.8 | 4.1 | NA | 618 | NA |
| BH04 | 08/17/22 | <1.0 | <1.0 | 2.0 | 7.5 | 9.9 | 48 | <1.0 | NA | 526 | NA |
| BH04 | 11/22/22 | <1.0 | <1.0 | 2.0 | 7.5 | 9.9 | 5.1 | <1.0 | NA | 409 | NA |
| BH05 | 02/24/21 | 280 | <1.0 | 630 | 1,400 | 300 | 570 | 1.6 | 2,530 | 592 | 1,260 |
| BH05 | 05/27/21 | 160 | <1.0 | 200 | 470 | 140 | 220 | 11 | 2,920 | 726 | 1,780 |
| BH05 | 09/21/21 | 160 | <1.0 | 66 | 300 | 61 | 160 | 17 | NA | 811 | NA |
| BH05 | 11/12/21 | 28 | <1.0 | 24 | <2.0 | 2.4 | 34 | <1.0 | NA | 711 | NA |
| BH05 | 02/25/22 | 39 | <1.0 | 33 | 52 | 8.6 | 54 | 7.2 | NA | 603 | NA |
| BH05 | 05/05/22 | 160 | <1.0 | 120 | 63 | 28 | 9.9 | <1.0 | NA | 728 | NA |
| BH05 | 08/17/22 | 320 | <1.0 | 380 | 220 | 170 | 460 | <1.0 | NA | 736 | NA |
| BH05 | 11/22/22 | 61 | <1.0 | 53 | 77 | 3.4 | 120 | <1.0 | NA | 705 | NA |

TABLE 2
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - DUNCAN D20-12, 20-13



| Monitoring Well ID | Date | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | Total Xylenes (µg/L) | Naphthalene (µg/L) | 1,2,4-TMB (µg/L) | 1,3,5-TMB (µg/L) | TDS (mg/L) | Chloride Ion (mg/L) | Sulfate Ion (mg/L) |
|---|----------|----------------|----------------|---------------------|----------------------|--------------------|------------------|------------------|------------------------------|-------------------------------------|-------------------------------------|
| COGCC Groundwater Standard⁽¹⁾ | | 5 | 560 | 700 | 1,400 | 140 | 67 | 67 | <1.25 x Background | 250 or <1.25 x Background | 250 or <1.25 x Background |
| BH06 | 02/24/21 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 3,160 | 827 | 2,770 |
| BH06 | 05/27/21 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 3,570 | 818 | 3,160 |
| BH06 | 09/21/21 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 903 | NA |
| BH06 ⁽³⁾ | 11/12/21 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 877 | NA |
| BH06 ⁽³⁾ | 02/25/22 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 596 | NA |
| BH06 ⁽³⁾ | 05/05/22 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 663 | NA |
| BH06 ⁽³⁾ | 08/17/22 | <1.0 | <1.0 | <1.0 | <2.0 | 9.9 | 1.3 | <1.0 | NA | 617 | NA |
| BH06 ⁽³⁾ | 11/22/22 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 718 | NA |
| BH07 | 02/24/21 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 3,490 | 1,150 | 2,680 |
| BH07 | 05/27/21 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 3,560 | 907 | 3,310 |
| BH07 | 09/21/21 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 637 | NA |
| BH07 | 11/12/21 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 817 | NA |
| BH07 | 02/25/22 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 598 | NA |
| BH07 | 05/05/22 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 579 | NA |
| BH07 | 08/17/22 | <1.0 | <1.0 | <1.0 | <2.0 | 9.6 | 1.1 | <1.0 | NA | 573 | NA |
| BH07 | 11/22/22 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 479 | NA |
| BH08 | 02/24/21 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 3,110 | 764 | 2,600 |
| BH08 | 05/27/21 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 3,420 | 826 | 2,800 |
| BH08 | 09/21/21 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 827 | NA |
| BH08 | 11/12/21 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 893 | NA |
| BH08 | 02/25/22 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 671 | NA |
| BH08 | 05/05/22 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 448 | NA |
| BH08 | 08/17/22 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 745 | NA |
| BH08 | 11/22/22 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | NA | 825 | NA |

Notes:

⁽¹⁾ Groundwater standards referenced from 2 CCR 404-1, Table 915-1 (January 15, 2021).

⁽²⁾ Groundwater analytical data received prior to January 2021 can be referenced in *Duncan D20-12, 20-13 Fourth Quarter 2020 Site Monitoring Data* (COGCC Document # : 402616302)

⁽³⁾ Monitoring well used as background to calculate concentration limits for inorganic analytes.

Definitions:

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

COGCC = Colorado Oil and Gas Conservation Commission

µg/L = Micrograms per liter

mg/L = Milligrams per liter

NA = Not analyzed, analyte removed or not included in COGCC approved sampling plan

1,2,4 - TMB = 1,2,4 Trimethylbenzene

1,3,5 - TMB = 1,3,5 Trimethylbenzene

TDS = Total Dissolved Solids

Highlighted results are equal to or exceed the COGCC Table 915-1 standard

Bold results exceed the COGCC Table 915-1 standard for groundwater inorganic parameters, site-specific background assessment is on-going for groundwater inorganic constituents.

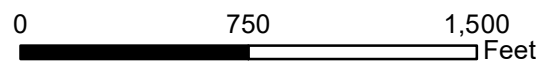
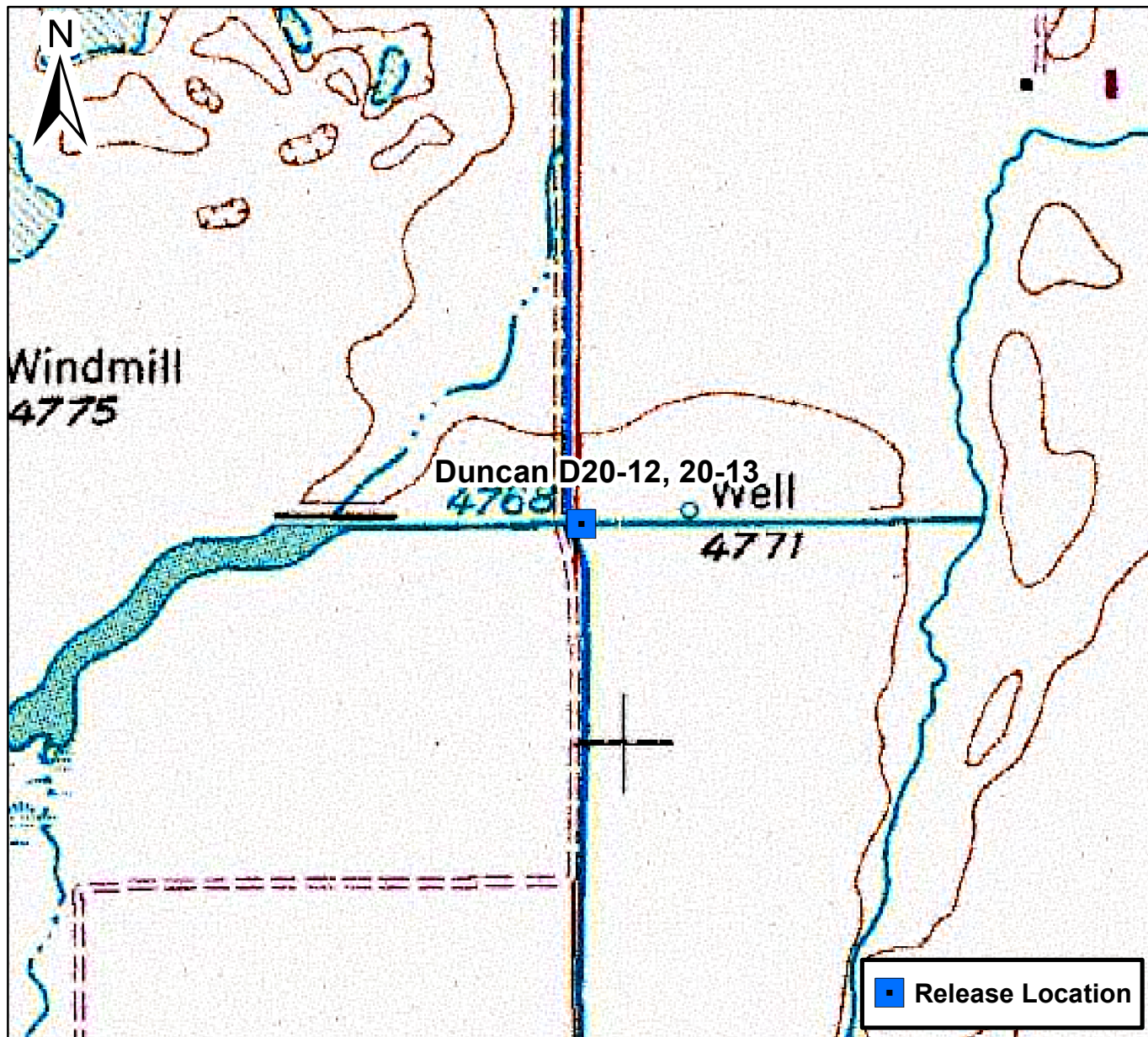
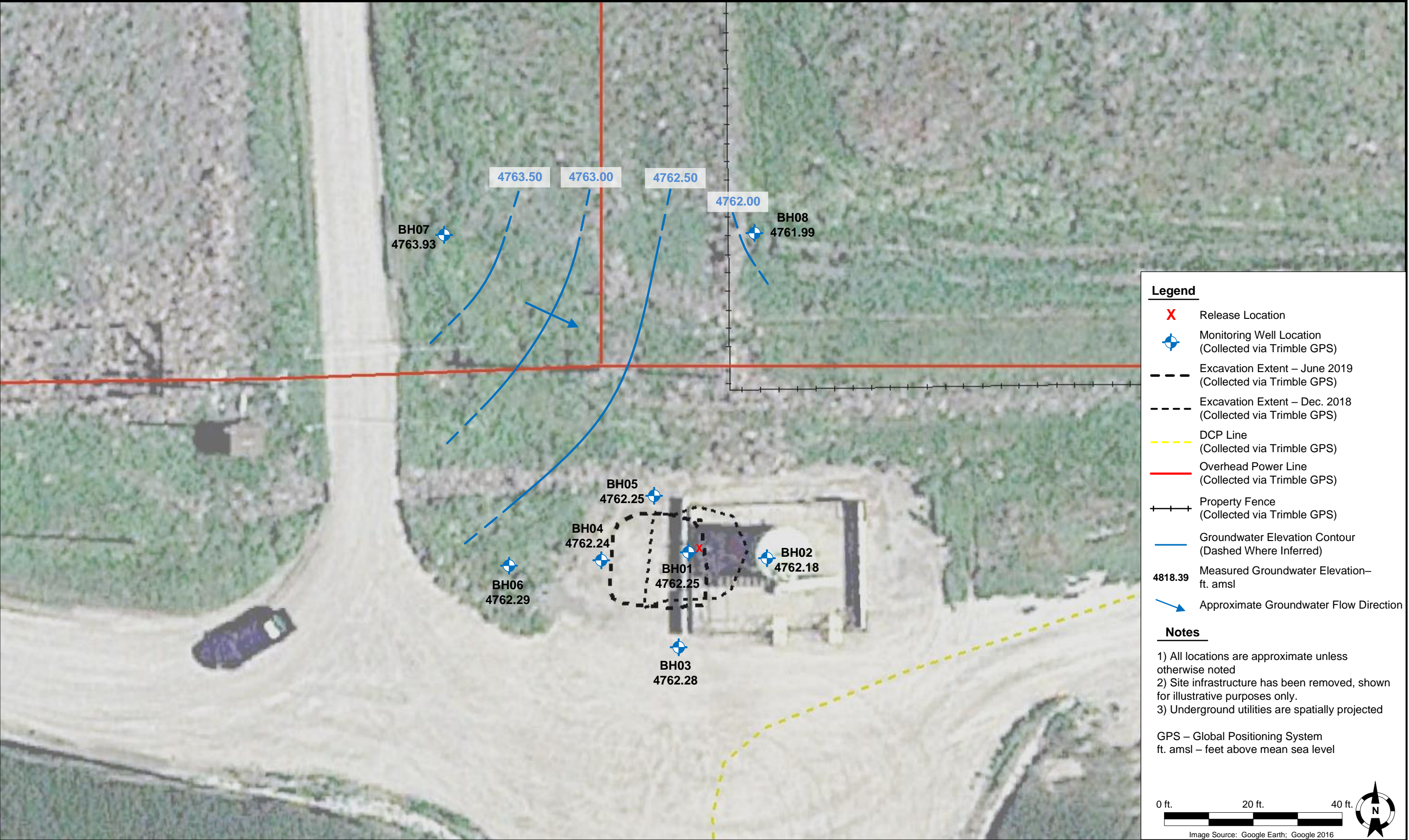


Figure 1

Site Location Map
Duncan D20-12, 20-13
NWSW S20 T3N R64W
Weld County, Colorado







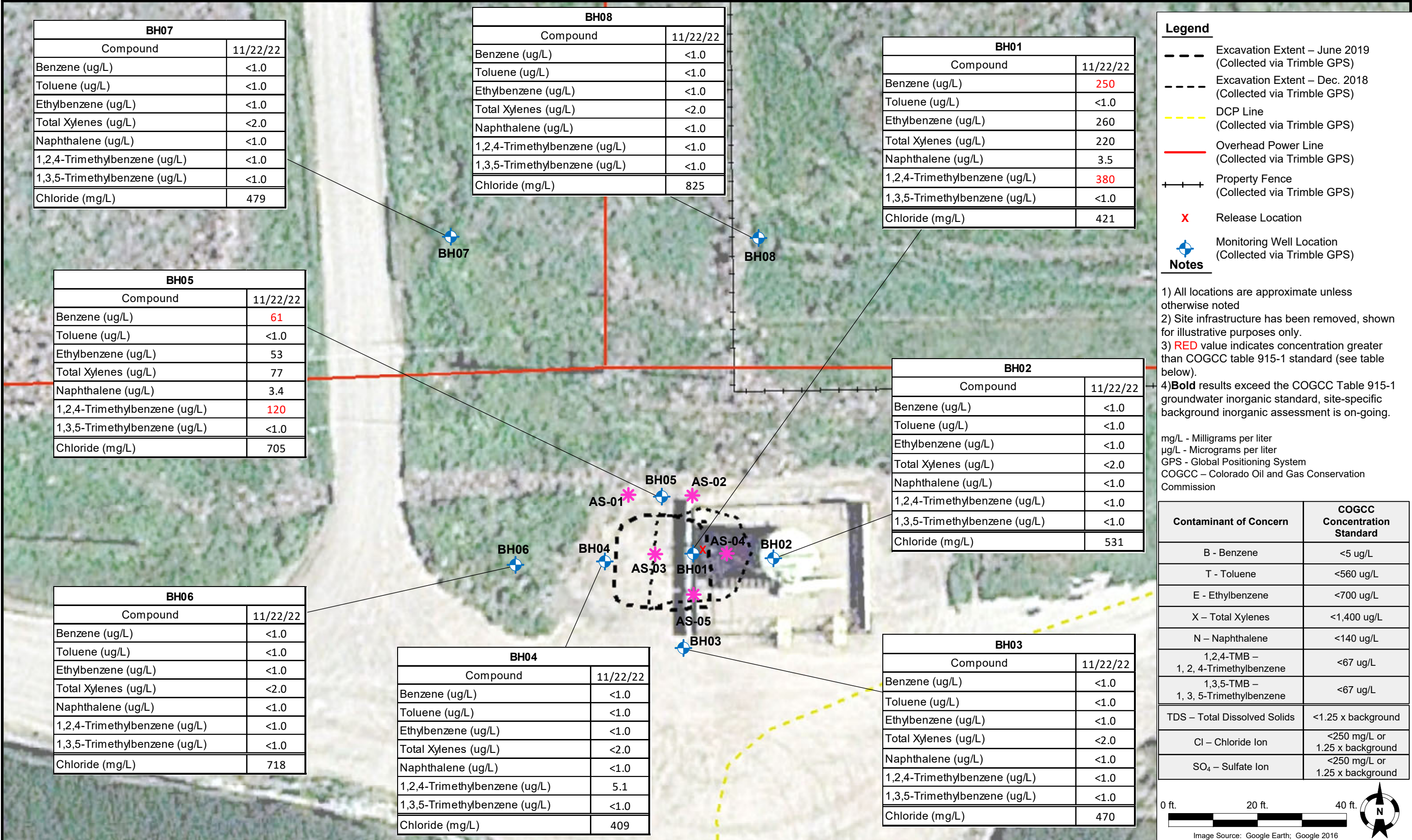
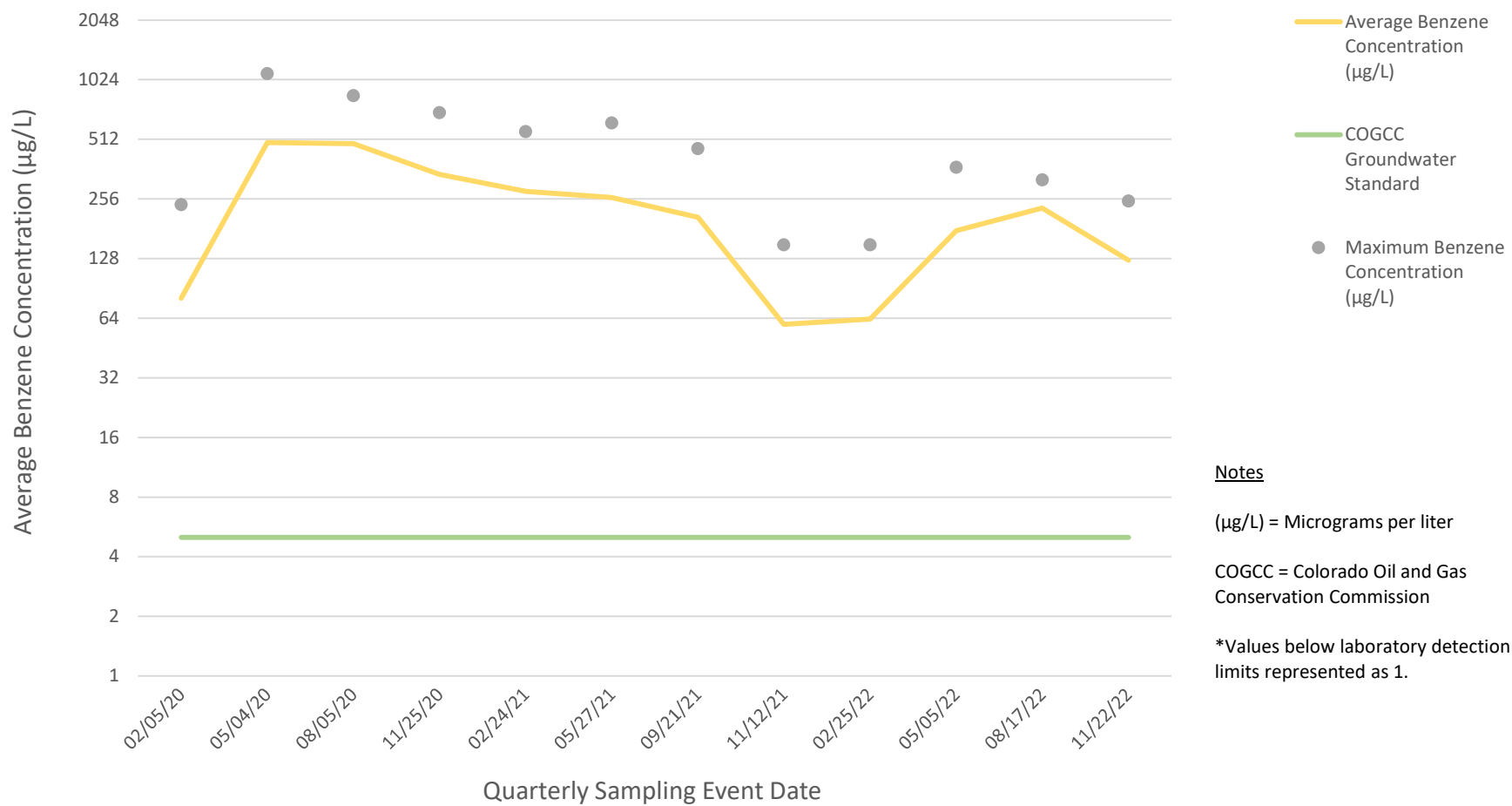


Figure 5
Duncan D20-12, 20-13
Quarterly Benzene Concentrations



Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

December 06, 2022

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Duncan D20-12, 20-13

Work Order #2211398

Enclosed are the results of analyses for samples received by Summit Scientific on 11/22/22 17:27. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury
President



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

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
12/06/22 09:33

ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|-----------|---------------|--------|----------------|----------------|
| BH01 | 2211398-01 | Water | 11/22/22 11:25 | 11/22/22 17:27 |
| BH02 | 2211398-02 | Water | 11/22/22 10:54 | 11/22/22 17:27 |
| BH03 | 2211398-03 | Water | 11/22/22 11:01 | 11/22/22 17:27 |
| BH04 | 2211398-04 | Water | 11/22/22 11:09 | 11/22/22 17:27 |
| BH05 | 2211398-05 | Water | 11/22/22 11:19 | 11/22/22 17:27 |
| BH06 | 2211398-06 | Water | 11/22/22 10:46 | 11/22/22 17:27 |
| BH07 | 2211398-07 | Water | 11/22/22 10:35 | 11/22/22 17:27 |
| BH08 | 2211398-08 | Water | 11/22/22 10:25 | 11/22/22 17:27 |

Summit Scientific

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

Summit Scientific

S₂

2211398

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

Page 1 of 1

Client: Noble / Tasman Project Manager: Jacob Whritenour
Address: 6855 W. 119th Ave E-Mail: jwhritenour@tasman-geo.com
City/State/Zip: Broomfield/ CO/ 80020
Phone: 503-915-3046 Project Name: Duncan D20-12,20-13
Sampler Name: Martin Medeiros 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 | Naphthalene | 1,2,4 TMB | 1,3,5 TMB | chloride | | | | |
| 1 | BH01 | 11/22/22 | 11:25 | 4 | 3 | | | | X | | | | | X | X | X | X | X | | | |
| 2 | BH02 | | 10:54 | | | | | | | | | | | | | | | | | | |
| 3 | BH03 | | 11:01 | | | | | | | | | | | | | | | | | | |
| 4 | BH04 | | 11:09 | | | | | | | | | | | | | | | | | | |
| 5 | BH05 | | 11:19 | | | | | | | | | | | | | | | | | | |
| 6 | BH06 | | 10:46 | | | | | | | | | | | | | | | | | | |
| 7 | BH07 | | 10:35 | | | | | | | | | | | | | | | | | | |
| 8 | BH08 | ↓ | 10:25 | ↓ | ↓ | | | | ↓ | | | | | ↓ | ↓ | ↓ | ↓ | ↓ | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | |

| | | | | | |
|---|---------------------------------|---|--------------------------------|---|--------|
| Relinquished by: Martin Medeiros <i>Martin Medeiros</i> | Date/Time: 11/22/22 14:00 | Received by: Tasman's Lock Box <i>[Signature]</i> | Date/Time: 11/22/22 1727 | Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/> | Notes: |
| Relinquished by: Tasman's Lock Box | Date/Time: 11/22/22 1727 | Received by: <i>[Signature]</i> | Date/Time: 11/22/22 1727 | Sample Integrity: Temperature Upon Receipt: <u>5.8</u> Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| Relinquished by: | Date/Time: | Received by: | Date/Time: | | |

S₂

Sample Receipt Checklist

S2 Work Order# 2211398Client: Noble/Tasman Client Project ID: Puncan DRO-12, 20-13Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: _____

| | | | | |
|--------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|

Matrix (Check all that apply) Air ☐ Soil/Solid ☐ Water ☒ Other ☐Temp (°C) 5.8Thermometer # 1

| | Yes | No | N/A | Comments (if any) |
|---|-------------------------------------|-------------------------------------|-------------------------------------|-------------------|
| If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ON ICE |
| If custody seals are present, are they intact? ⁽¹⁾ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are samples due within 48 hours present? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾ | <input type="checkbox"/> | <input checked="" 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"/> | |
| 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"/> | |
| For volatiles in water – is there headspace present? If yes, contact client and note in narrative. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | HCl |
| If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments. | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| If dissolved metals are requested, were samples field filtered? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| Additional Comments (if any): | | | | |

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

Custodian Printed Name

Date/Time

11-22-22



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

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
12/06/22 09:33

BH01
2211398-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/22/22 11:25**

| Analyte | Result | Reporting | | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-------------------------------|------------|-----------|--|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | | |
| Benzene | 250 | 10 | | ug/l | 10 | BFK0677 | 11/29/22 | 12/01/22 | EPA 8260B | |
| Toluene | ND | 1.0 | | " | 1 | " | " | " | " | |
| Ethylbenzene | 260 | 10 | | " | 10 | " | " | " | " | |
| Xylenes (total) | 220 | 20 | | " | " | " | " | " | " | |
| Naphthalene | 3.5 | 1.0 | | " | 1 | " | " | " | " | |
| 1,2,4-Trimethylbenzene | 380 | 10 | | " | 10 | " | " | " | " | |
| 1,3,5-Trimethylbenzene | ND | 1.0 | | " | 1 | " | " | " | " | |

Date Sampled: **11/22/22 11:25**

| Analyte | Result | Reporting | | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------|--|--------|----------|-------|----------|----------|--------|-------|
| | | Limit | | | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | | 110 % | | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 106 % | | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 108 % | | 21-167 | | " | " | " | " | |

Anions by EPA Method 300.0

Date Sampled: **11/22/22 11:25**

| Analyte | Result | Reporting | | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------|------------|-----------|--|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | | |
| Chloride | 421 | 12.0 | | mg/L | 200 | BFK0588 | 11/23/22 | 11/27/22 | EPA 300.0 | |

Summit Scientific

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

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
12/06/22 09:33

BH02
2211398-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/22/22 10:54**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | |
| Benzene | ND | 1.0 | ug/l | 1 | BFK0677 | 11/29/22 | 12/01/22 | EPA 8260B | |
| Toluene | ND | 1.0 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 1.0 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 2.0 | " | " | " | " | " | " | |
| Naphthalene | ND | 1.0 | " | " | " | " | " | " | |
| 1,2,4-Trimethylbenzene | ND | 1.0 | " | " | " | " | " | " | |
| 1,3,5-Trimethylbenzene | ND | 1.0 | " | " | " | " | " | " | |

Date Sampled: **11/22/22 10:54**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------|--------|----------|-------|----------|----------|--------|-------|
| | | Limit | | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | | 116 % | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 105 % | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 110 % | 21-167 | | " | " | " | " | |

Anions by EPA Method 300.0

Date Sampled: **11/22/22 10:54**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------|--------|-----------|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | |
| Chloride | 531 | 12.0 | mg/L | 200 | BFK0588 | 11/23/22 | 11/27/22 | EPA 300.0 | |

Summit Scientific

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

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
12/06/22 09:33

BH03
2211398-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | |
| Benzene | ND | 1.0 | ug/l | 1 | BFK0677 | 11/29/22 | 12/01/22 | EPA 8260B | |
| Toluene | ND | 1.0 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 1.0 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 2.0 | " | " | " | " | " | " | |
| Naphthalene | ND | 1.0 | " | " | " | " | " | " | |
| 1,2,4-Trimethylbenzene | ND | 1.0 | " | " | " | " | " | " | |
| 1,3,5-Trimethylbenzene | ND | 1.0 | " | " | " | " | " | " | |

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

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------|--------|----------|-------|----------|----------|--------|-------|
| | | Limit | | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | | 117 % | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 104 % | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 108 % | 21-167 | | " | " | " | " | |

Anions by EPA Method 300.0

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

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------|--------|-----------|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | |
| Chloride | 470 | 12.0 | mg/L | 200 | BFK0588 | 11/23/22 | 11/27/22 | EPA 300.0 | |

Summit Scientific

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

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
12/06/22 09:33

BH04
2211398-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/22/22 11:09**

| Analyte | Result | Reporting | | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-------------------------------|------------|-----------|--|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | | |
| Benzene | ND | 1.0 | | ug/l | 1 | BFK0677 | 11/29/22 | 12/02/22 | EPA 8260B | |
| Toluene | ND | 1.0 | | " | " | " | " | " | " | |
| Ethylbenzene | ND | 1.0 | | " | " | " | " | " | " | |
| Xylenes (total) | ND | 2.0 | | " | " | " | " | " | " | |
| Naphthalene | ND | 1.0 | | " | " | " | " | " | " | |
| 1,2,4-Trimethylbenzene | 5.1 | 1.0 | | " | " | " | " | " | " | |
| 1,3,5-Trimethylbenzene | ND | 1.0 | | " | " | " | " | " | " | |

Date Sampled: **11/22/22 11:09**

| Analyte | Result | Reporting | | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------|--|--------|----------|-------|----------|----------|--------|-------|
| | | Limit | | | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | | 108 % | | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 98.0 % | | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 108 % | | 21-167 | | " | " | " | " | |

Anions by EPA Method 300.0

Date Sampled: **11/22/22 11:09**

| Analyte | Result | Reporting | | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------|------------|-----------|--|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | | |
| Chloride | 409 | 12.0 | | mg/L | 200 | BFK0588 | 11/23/22 | 11/27/22 | EPA 300.0 | |

Summit Scientific

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

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
12/06/22 09:33

BH05
2211398-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-------------------------------|------------|-----------|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | |
| Benzene | 61 | 1.0 | ug/l | 1 | BFK0677 | 11/29/22 | 12/02/22 | EPA 8260B | |
| Toluene | ND | 1.0 | " | " | " | " | " | " | |
| Ethylbenzene | 53 | 1.0 | " | " | " | " | " | " | |
| Xylenes (total) | 77 | 2.0 | " | " | " | " | " | " | |
| Naphthalene | 3.4 | 1.0 | " | " | " | " | " | " | |
| 1,2,4-Trimethylbenzene | 120 | 1.0 | " | " | " | " | " | " | |
| 1,3,5-Trimethylbenzene | ND | 1.0 | " | " | " | " | " | " | |

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

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------|--------|----------|-------|----------|----------|--------|-------|
| | | Limit | | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | | 113 % | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 100 % | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 105 % | 21-167 | | " | " | " | " | |

Anions by EPA Method 300.0

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

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------|------------|-----------|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | |
| Chloride | 705 | 12.0 | mg/L | 200 | BFK0588 | 11/23/22 | 11/27/22 | EPA 300.0 | |

Summit Scientific

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

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
12/06/22 09:33

BH06
2211398-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/22/22 10:46**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | |
| Benzene | ND | 1.0 | ug/l | 1 | BFK0677 | 11/29/22 | 12/01/22 | EPA 8260B | |
| Toluene | ND | 1.0 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 1.0 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 2.0 | " | " | " | " | " | " | |
| Naphthalene | ND | 1.0 | " | " | " | " | " | " | |
| 1,2,4-Trimethylbenzene | ND | 1.0 | " | " | " | " | " | " | |
| 1,3,5-Trimethylbenzene | ND | 1.0 | " | " | " | " | " | " | |

Date Sampled: **11/22/22 10:46**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------|--------|----------|-------|----------|----------|--------|-------|
| | | Limit | | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | | 115 % | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 104 % | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 109 % | 21-167 | | " | " | " | " | |

Anions by EPA Method 300.0

Date Sampled: **11/22/22 10:46**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------|------------|-----------|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | |
| Chloride | 718 | 12.0 | mg/L | 200 | BFK0588 | 11/23/22 | 11/27/22 | EPA 300.0 | |

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 - Duncan D20-12, 20-13

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
12/06/22 09:33

BH07
2211398-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/22/22 10:35**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | |
| Benzene | ND | 1.0 | ug/l | 1 | BFK0677 | 11/29/22 | 12/01/22 | EPA 8260B | |
| Toluene | ND | 1.0 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 1.0 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 2.0 | " | " | " | " | " | " | |
| Naphthalene | ND | 1.0 | " | " | " | " | " | " | |
| 1,2,4-Trimethylbenzene | ND | 1.0 | " | " | " | " | " | " | |
| 1,3,5-Trimethylbenzene | ND | 1.0 | " | " | " | " | " | " | |

Date Sampled: **11/22/22 10:35**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------|--------|----------|-------|----------|----------|--------|-------|
| | | Limit | | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | | 116 % | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 105 % | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 110 % | 21-167 | | " | " | " | " | |

Anions by EPA Method 300.0

Date Sampled: **11/22/22 10:35**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------|--------|-----------|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | |
| Chloride | 479 | 12.0 | mg/L | 200 | BFK0588 | 11/23/22 | 11/27/22 | EPA 300.0 | |

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 - Duncan D20-12, 20-13

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
12/06/22 09:33

BH08
2211398-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/22/22 10:25**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | |
| Benzene | ND | 1.0 | ug/l | 1 | BFK0677 | 11/29/22 | 12/01/22 | EPA 8260B | |
| Toluene | ND | 1.0 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 1.0 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 2.0 | " | " | " | " | " | " | |
| Naphthalene | ND | 1.0 | " | " | " | " | " | " | |
| 1,2,4-Trimethylbenzene | ND | 1.0 | " | " | " | " | " | " | |
| 1,3,5-Trimethylbenzene | ND | 1.0 | " | " | " | " | " | " | |

Date Sampled: **11/22/22 10:25**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------|--------|----------|-------|----------|----------|--------|-------|
| | | Limit | | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | | 116 % | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 106 % | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 108 % | 21-167 | | " | " | " | " | |

Anions by EPA Method 300.0

Date Sampled: **11/22/22 10:25**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------|------------|-----------|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | |
| Chloride | 825 | 12.0 | mg/L | 200 | BFK0588 | 11/23/22 | 11/27/22 | EPA 300.0 | |

Summit Scientific

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

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
12/06/22 09:33

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 BFK0677 - EPA 5030 Water MS

Blank (BFK0677-BLK1)

Prepared: 11/29/22 Analyzed: 12/01/22

| | | | | | | | | | | |
|----------------------------------|------|-----|------|------|--|-----|--------|--|--|--|
| Benzene | ND | 1.0 | ug/l | | | | | | | |
| Toluene | ND | 1.0 | " | | | | | | | |
| Ethylbenzene | ND | 1.0 | " | | | | | | | |
| Xylenes (total) | ND | 2.0 | " | | | | | | | |
| Naphthalene | ND | 1.0 | " | | | | | | | |
| 1,2,4-Trimethylbenzene | ND | 1.0 | " | | | | | | | |
| 1,3,5-Trimethylbenzene | ND | 1.0 | " | | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 14.6 | | " | 13.3 | | 110 | 23-173 | | | |
| Surrogate: Toluene-d8 | 13.9 | | " | 13.3 | | 104 | 20-170 | | | |
| Surrogate: 4-Bromofluorobenzene | 14.6 | | " | 13.3 | | 109 | 21-167 | | | |

LCS (BFK0677-BS1)

Prepared: 11/29/22 Analyzed: 12/01/22

| | | | | | | | | | | |
|----------------------------------|------|-----|------|------|--|------|--------|--|--|--|
| Benzene | 31.5 | 1.0 | ug/l | 50.0 | | 63.1 | 51-132 | | | |
| Toluene | 42.0 | 1.0 | " | 50.0 | | 84.1 | 51-138 | | | |
| Ethylbenzene | 47.3 | 1.0 | " | 50.0 | | 94.6 | 58-146 | | | |
| m,p-Xylene | 93.8 | 2.0 | " | 100 | | 93.8 | 57-144 | | | |
| o-Xylene | 45.8 | 1.0 | " | 50.0 | | 91.7 | 53-146 | | | |
| Naphthalene | 55.1 | 1.0 | " | 50.0 | | 110 | 70-130 | | | |
| 1,2,4-Trimethylbenzene | 53.0 | 1.0 | " | 50.0 | | 106 | 70-130 | | | |
| 1,3,5-Trimethylbenzene | 52.6 | 1.0 | " | 50.0 | | 105 | 70-130 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 15.1 | | " | 13.3 | | 113 | 23-173 | | | |
| Surrogate: Toluene-d8 | 14.1 | | " | 13.3 | | 106 | 20-170 | | | |
| Surrogate: 4-Bromofluorobenzene | 13.7 | | " | 13.3 | | 103 | 21-167 | | | |

Matrix Spike (BFK0677-MS1)

Source: 2211398-02

Prepared: 11/29/22 Analyzed: 12/01/22

| | | | | | | | | | | |
|----------------------------------|------|-----|------|------|----|------|--------|--|--|--|
| Benzene | 32.5 | 1.0 | ug/l | 50.0 | ND | 65.0 | 34-141 | | | |
| Toluene | 43.9 | 1.0 | " | 50.0 | ND | 87.8 | 27-151 | | | |
| Ethylbenzene | 49.0 | 1.0 | " | 50.0 | ND | 98.0 | 29-160 | | | |
| m,p-Xylene | 96.9 | 2.0 | " | 100 | ND | 96.9 | 20-166 | | | |
| o-Xylene | 47.2 | 1.0 | " | 50.0 | ND | 94.3 | 33-159 | | | |
| Naphthalene | 61.7 | 1.0 | " | 50.0 | ND | 123 | 70-130 | | | |
| 1,2,4-Trimethylbenzene | 54.3 | 1.0 | " | 50.0 | ND | 109 | 70-130 | | | |
| 1,3,5-Trimethylbenzene | 53.8 | 1.0 | " | 50.0 | ND | 108 | 70-130 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 15.5 | | " | 13.3 | | 116 | 23-173 | | | |
| Surrogate: Toluene-d8 | 14.2 | | " | 13.3 | | 106 | 20-170 | | | |
| Surrogate: 4-Bromofluorobenzene | 13.6 | | " | 13.3 | | 102 | 21-167 | | | |

Summit Scientific

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

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
12/06/22 09:33

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 BFK0677 - EPA 5030 Water MS

Matrix Spike Dup (BFK0677-MSD1)

Source: 2211398-02

Prepared: 11/29/22 Analyzed: 12/01/22

| | | | | | | | | | | |
|----------------------------------|------|-----|------|------|----|------|--------|------|----|--|
| Benzene | 31.0 | 1.0 | ug/l | 50.0 | ND | 62.0 | 34-141 | 4.66 | 30 | |
| Toluene | 42.3 | 1.0 | " | 50.0 | ND | 84.5 | 27-151 | 3.83 | 30 | |
| Ethylbenzene | 47.1 | 1.0 | " | 50.0 | ND | 94.2 | 29-160 | 3.93 | 30 | |
| m,p-Xylene | 93.9 | 2.0 | " | 100 | ND | 93.9 | 20-166 | 3.15 | 30 | |
| o-Xylene | 45.7 | 1.0 | " | 50.0 | ND | 91.4 | 33-159 | 3.17 | 30 | |
| Naphthalene | 65.1 | 1.0 | " | 50.0 | ND | 130 | 70-130 | 5.35 | 30 | |
| 1,2,4-Trimethylbenzene | 52.3 | 1.0 | " | 50.0 | ND | 105 | 70-130 | 3.77 | 30 | |
| 1,3,5-Trimethylbenzene | 52.8 | 1.0 | " | 50.0 | ND | 106 | 70-130 | 1.80 | 30 | |
| Surrogate: 1,2-Dichloroethane-d4 | 16.4 | | " | 13.3 | | 123 | 23-173 | | | |
| Surrogate: Toluene-d8 | 14.3 | | " | 13.3 | | 107 | 20-170 | | | |
| Surrogate: 4-Bromofluorobenzene | 13.9 | | " | 13.3 | | 105 | 21-167 | | | |

Summit Scientific

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

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
12/06/22 09:33

Anions by EPA Method 300.0 - Quality Control

Summit Scientific

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

Batch BFK0588 - General Preparation

Blank (BFK0588-BLK1)

Prepared & Analyzed: 11/23/22

Chloride ND 0.0600 mg/L

LCS (BFK0588-BS1)

Prepared & Analyzed: 11/23/22

Chloride 3.03 0.0600 mg/L 3.00 101 90-110

Duplicate (BFK0588-DUP1)

Source: 2211397-27

Prepared & Analyzed: 11/23/22

Chloride 51.0 12.0 mg/L 46.0 10.3 20

Matrix Spike (BFK0588-MS1)

Source: 2211397-27

Prepared & Analyzed: 11/23/22

Chloride 695 12.0 mg/L 600 46.0 108 80-120

Summit Scientific

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

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
12/06/22 09:33

Notes and Definitions

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