District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	nAPP2132562482
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: Novo Oil & Gas Northern Delaware, LLC	OGRID: 372920
Contact Name: Kurt A. Shipley	Contact Telephone: 405-286-3916
Contact email: kshipley@novoog.com	Incident # *(assigned by OCD):* nAPP2132562482
Contact mailing address: 1001 West Wilshire Blvd., Suite 206 Oklahoma City, OK 73116	

Location of Release Source

Latitude 32.34103 Longitude -104.084188
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Culebra Bluff CTB3 (before San Mateo Meter)	Site Type: Produced Water Line (production)
Date Release Discovered: 11/20/2021 at 1:00am	API# *(if applicable)*

Unit Letter	Section	Township	Range	County
	4	T22S	R28E	Eddy

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls): 660	Volume Recovered (bbls): 150
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☒ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

A break on a permanent produced water pipeline occurred at camel back riser above ground.
Pump rate of produced water: 17,000 bbl/day = 708 bbl/hour = 12 bbl/min
Pumping during release for 55 minutes

Volume: 12 bbl/min X 55 minutes = **660 bbls (27,720 gallons) estimated to have been released**

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2132562482
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? Calculated volume of the release was 660 bbls of produced water, which is greater than the 25 bbl threshold defining a major release.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

Immediate notification was provided by Kurt Shipley on November 20, 2021 at 2:00pm by phone. Notification was made to the NMOCD – Artesia Office (575.703.3842). A recorded message was provided on the hotline voicemail (a specific person did not answer). Bryan Haney with Altamira-US (on behalf of Novo Oil & Gas Northern Delaware, LLC.) submitted notification of a release (NOR) on the online OCD system on November 21, 2021.

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped.

☒ The impacted area has been secured to protect human health and the environment.

☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

All actions above have been completed.

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Kurt A. Shipley Title: Chief Operating Officer

Signature: _____ Date: December 2, 2021

email: kshipley@novoog.com Telephone: 405-286-3916

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2132562482
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	46.5 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☒ Yes ☐ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☒ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2132562482
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Kurt A. Shipley Title: Chief Operating Officer

Signature: _____ Date: 5-18-2022

email: kshipley@novoog.com Telephone: 405-286-3916

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2132562482
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	46.5 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☒ Yes ☐ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☒ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2132562482
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Kurt A. Shipley Title: Chief Operating Officer

Signature: Date: 5-18-2022

email: kshipley@novoog.com Telephone: 405-286-3916

OCD Only

Received by: Robert Hamlet Date: 9/21/2022

Legend

- SOIL BORING LOCATION
- POINT OF RELEASE
- BURIED PIPELINE
- ROW
- CONSTR ROW
- STAKED ACCESS ROAD
- EXISTING ACCESS ROAD

Notes:

Site Plan Map

Culebra Bluff CTB3 – Produced Water Release
nAPP2132562482
Eddy County, New Mexico
Novo Oil & Gas

0 225 450 Feet

Date: 5/18/2022

Figure 3

ALTAMIRA

Assessment Report
Produced Water Line Release
Incident ID No. nAPP2132562482
Culebra Bluff CTB3 (before San Mateo Meter)
Discovery Date: November 20, 2021
Eddy County, New Mexico

Prepared for:
Novo Oil & Gas Northern Delaware, LLC
1001 West Wilshire Blvd., Suite 206
Oklahoma City, Oklahoma 73116

Prepared By:

Altamira-US
Bryan Haney, P.G. TX 929
Corpus Christi, Texas 78418
(361)658-3126

May 20, 2022

ALTAMIRA

Table of Contents

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

ACRONYMS AND ABBREVIATIONS

Altamira	Altamira-US, LLC
Novo	Novo Oil & Gas Northern Delaware, LLC
bgs	below ground surface
bbl	barrels
mg/Kg	milligram per kilogram
NMOCD	New Mexico Oil Conservation District
TPH	Total Petroleum Hydrocarbons
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes

1.0 INTRODUCTION

Novo Oil & Gas Northern Delaware, LLC (Novo Oil & Gas) (OGRID No. 372920) operates a facility known as the "Culebra Fluff CTB3" located in Field Name Purple Sage – Wolfcamp, T23S, R28E, Section 4, Quarter NE, in Eddy County, New Mexico. On November 20, 2021, field personnel for Novo Oil & Gas discovered a release of produced water from a permanent produced water line. The produced water line and point of release is located in an open area between the Goonch Pad H and Goonch CTB3 operational pad. The release area is located approximately one mile southwest of the intersection of Highway 605 and Herradura Bend Road at latitude N32.34103, longitude W-104.084188 **(Figure 1 and Figure 2)**. This Assessment Report has been prepared to document initial response actions and soil assessment efforts.

1.1 Release Details and Initial Response

On November 20, 2021, at approximately 1:00 am a release of produced water occurred as a result of a break on the permanent produced water pipeline at the camel back riser located above the ground surface. Approximately 660 barrels of produced water was released into the area between the Goonch Pad H and Goonch CTB3 operational pads. The release of produced water from the camel back riser piping extended generally to the south and east across the lower lying area. The release area is depicted on **(Figure 3)**.

The release of produced water was identified by Novo Oil & Gas personnel and steps were taken to mitigate further release and contain and remove pooled areas of produced water. Novo Oil & Gas estimated approximately 660 barrels of produced water was released and approximately 150 barrels of produced water was recovered using vacuum trucks. The justification for the quantity release is based on the following:

- Pump rate of produced water: 17,000 bbl per day = 708 bbl per hour = 12 bbl per minute
- Pump ran for approximately 55 minutes during release
- Volume: 12 bbl per minute x 55 minutes = 660 bbl of produced water

The area of the release between the two pads contains numerous buried pipelines, pipeline right-of-ways, and construction right-of-ways. Soil assessment activities were conducted to the best extent possible while adhering to safety requirements from the pipeline companies. It should also be noted that significant dirt work and pipeline installation occurred following the November 20, 2021, release which may have acted to spread the extent of chloride impacts within the area.

1.2 Notification

Based on the quantity of produced water released being greater than 25 barrels, the release was determined to be a Major release per 19.15.29.7.A NMAC. Immediate notification was provided by Kurt Shipley to the NMOCD and BLM hotlines on November 20, 2021. The initial online release notification was submitted to the New Mexico Oil Conservation District (NMOCD) on November 21, 2021. The OCD issued incident ID# nAPP2132562482. Form C-141 Release Notification was prepared and submitted online with payment on December 2, 2021. Written notification of the release (BLM Major Undesirable Event Report) was also provided to the BLM. Copies of the

C-141 Release Notification form and BLM Major Undesirable Event Report are provided in **Appendix A**.

1.3 Project Objectives

The project objectives were to: 1) conduct initial release cleanup efforts and 2) conduct soil assessment activities to evaluate general degree of impact to soil and provide general delineation laterally and vertically.

1.4 Regulatory Framework

The Site is subject to environmental regulatory oversight by the NMOCD and regulations set forth in Title 19, Chapter 15, Part 29. Notification and assessment activities were conducted in accordance with guidelines outlined in 19.15.29 NMAC.

2.0 STANDARD OF CARE, LIMITATIONS, & RELIANCE

2.1 Standard of Care

Altamira's services were performed in accordance with standards customarily provided by a firm rendering the same or similar services in the area during the same period of time. Altamira makes no warranties, expressed or implied, as to the services performed hereunder. Additionally, Altamira does not warrant the work of laboratories, regulatory agencies, or other third parties supplying information used in the preparation of the report.

2.2 Additional Limitations

Findings, conclusions, and recommendations resulting from these services are based upon information derived from the services performed under this scope of work and it should be noted that this information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, or not present during these services, and Altamira cannot represent that the Site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this scope of services. Environmental conditions at other areas or portions of the Site may vary from those encountered at actual sample locations. Altamira's findings and recommendations are based solely upon data available to Altamira at the time of these services.

3.0 RECEPTOR AND WATER SOURCES SURVEY

3.1 Wellhead Protection Discussion

During assessment field activities, Altamira field personnel conducted a 0.5-mile radius search of the surrounding area to determine the presence of any known private or domestic water sources. During the search, no water well or springs were identified within 0.5 miles of the release area. Altamira also reviewed available maps, satellite imagery, and reviewed the New Mexico Office of the State Engineers GIS database to search for known water wells. In review of the State

Engineers GIS database, no water wells, monitoring wells or other subsurface water conveyances were identified within 0.5 miles of the release area.

Based on review of the FEMA Flood Map for the site area, the release area is located in Zone X "Area of Minimal Flood Hazard" (FIRM Panel 35015C1350D).

3.2 Significant Water Source Discussion

Altamira conducted a review of the significant watercourses nearest the release area. The Pecos River is located approximately 0.39 miles west of the Site. The release did not result in any adverse effects to the Pecos River. Salt Lake is located approximately 4.5 miles southeast of the Site area. No other watercourses were identified within a 0.5-mile radius of the release area.

4.0 SOIL ASSESSMENT ACTIVITIES

Atlamira on behalf of Novo Oil & Gas conducted the first round of soil assessment activities January 25-26, 2022, in the area of the produced water release to determine the degree of impact to soil. A total of 21 soil borings were installed to attempt to delineate the vertical and lateral extent of potential constituents of concern. Eleven soil borings (SB-2 – SB-11 and SB-12) were installed within the source/release area. Ten soil borings were installed to determine the lateral extent of potential impacts to soil (SB-1 and SB-13 – SB-21) **(Figure 3)**. Installation of soil borings using a drill rig during the January 2022 assessment was limited to soil boring locations SB-1 and SB-2 due to significant construction and presence of numerous underground pipelines in the area. Remaining soil borings were installed using a stainless-steel hand auger (but depth limited due to rocky lithologic matrix).

During April 27-28, 2022, Altamira conducted additional soil assessment activities in select locations to better determine the vertical and lateral extent of chlorides in soil. Soil boring SB-2 was resampled to achieve vertical delineation near the point of release. Eight additional soil borings were installed at previous shallow soil boring locations to determine the vertical extent of chlorides in soil. Two new soil borings were installed (SB-22 and SB-23) for lateral delineation of chlorides in soil. Soil borings were installed using a combination of solid flight auger and air rotary drilling methods due to the rocky lithologic matrix.

There is a significant safety concern in the general release area due to the numerous underground pipelines located at various depths below ground surface, active right-of-way, and active construction right-of-way. Placement of soil borings in some areas was limited.

4.1 Boring Installation and Soil Sample Methodology – January 2022

Prior to site assessment activities, Novo Oil & Gas prepared and submitted the WR-07 Application for Permit to Drill Well w/No Water Right and the WD-08 Well Plugging Plan of Operations **(Appendix B)** through the New Mexico Office of the State Engineers Office. A state line/utility locate (811) was conducted to notify utility companies to properly mark utilities in the radius of the work area. Altamira and Novo Oil & Gas also provided 48-hour notification to the NMOCD and BLM via email **(Appendix A)**.

Soil borings SB-1 and SB-2 were installed by White Drilling Company using an air rotary drill rig. Soil samples were collected using a combination of stainless-steel split spoon sampling device and cuttings (dependent on lithology). Soil boring SB-1 was advanced to a total depth of 50-feet below ground surface for the purpose of lateral delineation and determination of depth of groundwater. Soil borings SB-3 through SB-21 were installed to various depths (to the extent possible) using a stainless-steel hand auger.

Soil samples were collected continuously from the surface to the total depth of each soil boring. Representative soil/rock from each one to two-foot interval was placed into a plastic bag, allowed to equilibrate and field screened with a photo-ionization detector (PID) for the presence of organic vapors. Soil samples were lithologically described and observations noted on soil boring logs **(Appendix D)**. Soil samples were collected and submitted for laboratory analysis generally from the surface to the total depth of each soil boring in one to two-foot sample intervals. Soil samples were placed in laboratory provided containers, labeled, and maintained/preserved on ice in an insulated cooler with chain-of-custody documentation.

The soil sample analysis was initially conducted on the first two shallow depth sample intervals. If a constituent of concern exceeded the Assessment/Closure Criteria set forth 19.15.29 NMAC then the constituent in the next deeper sample interval was also analyzed until vertical delineation was achieved. Soil samples were submitted to Pace Analytical National in Mount Juliet, Tennessee for analysis. Soil samples were collected and submitted for analysis for the following:

- Chlorides – EPA 300.0
- TPH (GRO, DRO, MRO) – EPA SW-846 Method 8015M
- BTEX – EPA SW-846 Method 8260B

The initial soil sample interval 0-1 foot was analyzed for chlorides, TPH, and BTEX. If a constituent exceeded the allowable assessment/cleanup level, that constituent was analyzed in the next deeper sample interval.

Following installation of soil borings, White Drilling Company plugged each borehole per the specifications provided in the Well Plugging Plan and approved by the State of New Mexico Office of the State Engineer. Soil borings were plugged using a Type I/II cement-bentonite slurry per the specifications and tremied from the bottom of the borehole to the surface. A plugging record for soil boring SB-1 was provided to the State of New Mexico Office of the State Engineer. The plugging report for soil boring SB-1 is provided in **Appendix F**.

4.2 Boring Installation and Soil Sample Methodology – April 2022

Prior to site assessment activities, a state line/utility locate (811) was conducted to notify utility companies to properly mark utilities in the radius of the work area. Altamira and Novo Oil & Gas also provided 48-hour notification to the NMOCD and BLM via email **(Appendix A)**. Altamira worked with pipeline companies to positively identify soil boring locations in relation to known pipelines and provided onsite supervision as necessary during soil boring installation.

Soil borings were installed by Envirotech Drilling Services using a combination of solid flight auger and air rotary drill methods. Soil samples were collected using a combination of stainless-steel split spoon sampling device and cuttings (dependent on lithology).

Soil samples were collected continuously from the surface to the total depth of each soil boring. Representative soil/rock from each one to two-foot interval was placed into a plastic bag, allowed to equilibrate and field screened with a photo-ionization detector (PID) for the presence of organic vapors. Soil samples were lithologicaly described and observations noted on soil boring logs **(Appendix D)**. Soil samples were collected and submitted for laboratory analysis from prescribed depths for each soil boring in one to two-foot sample intervals. Soil samples were placed in laboratory provided containers, labeled, and maintained/preserved on ice in an insulated cooler with chain-of-custody documentation.

Analysis of soil samples was performed on select depth intervals so that previously advanced shallow soil borings were extended and sampled deeper for vertical delineation of chlorides. If chloride concentrations exceeded the Assessment/Closure Criteria set forth 19.15.29 NMAC (600 mg/kg) then the constituent in the next deeper sample interval was also analyzed until vertical delineation was achieved. Soil samples were submitted to Cardinal Laboratories in Hobbs, New Mexico for analysis. Soil samples were collected and submitted for analysis for the following:

- Chlorides – EPA 4500-Cl-B

Soil borings were plugged using a Type I/II cement-bentonite slurry for the entire depth of each soil boring.

4.3 Determination of Depth to Groundwater

Soil boring SB-1 was installed north of the point of release and was advanced to a depth of 50-feet below ground surface. The purpose of advancing soil boring SB-1 to 50-feet was to determine if groundwater was present below 50-feet. During boring advancement, variations of dry unconsolidated soil and rock were observed (refer to **Appendix D** – Boring Record SB-1). During advancement of soil boring SB-1, groundwater (saturation) was encountered at approximately 46.5 feet below ground surface. The borehole was advanced to 50 feet below ground surface and allowed to stay open for a period of time. The presence of groundwater was verified with an electronic water level probe.

Based on the lines of evidence provided above, groundwater appears to be shallower than 50-feet below ground surface in the area of the release. Based on this site specific groundwater data, analytical data results will be compared to Closure Criteria for groundwater encountered at depths less than 50 feet below ground surface.

5.0 DATA RESULTS & EVALUATION

Altamira utilized guidance from 19.15.29 NMAC, specifically *Table I - Closure Criteria for Soils Impacted by a Release* to assess soil sample analytical data collected at the Site.

The most stringent closure criteria action levels were utilized to evaluate analytical results for site soil assessment. Analytical results are provided on **Table 1** and Laboratory Analytical Data Report are provided in **Appendix G**.

5.1 Chloride Results

Analytical results for chlorides within the release area ranged from <9.62 mg/kg to 14,700 mg/kg **(Table 1)**. Chloride concentrations exceeded 600 mg/kg in soil samples at soil borings SB-2, SB-3, SB-5, SB-6, SB-7, SB-8, SB-9, SB-11, SB-12, SB-22, and SB-23. The approximate lateral extent of the chloride impacted soil is depicted on **Figure 4**. It appears that the produced water followed general topography within the release area and may have pooled in lower lying areas. It should also be noted that general lithology consisted of a mix of silt-sand and rock, which may have also aided in the infiltration of produced water to deeper soil intervals. Chloride impacts appeared the deepest at soil borings SB-2 (near point of release) and SB-8. Vertical delineation has been achieved for chlorides at each soil boring location.

Soil borings were installed radially outward from the known impact area. Soil sample data for chlorides for these soil borings generally show lateral delineation and lack of impacts in the shallower soil profile. Soil borings SB-1 and SB-13 show delineation of chlorides to the north and northwest of the release area. Soil borings SB-19 and SB-20 show lateral delineation of chlorides in the shallower soil intervals to the west of the release area. SB-10, SB-17, SB-18, and SB-21 show lateral delineation of chloride impacts to the southeast near SB-7 and SB-11. There is some lack of lateral delineation east of SB-8 and SB-23; and west/south/east of SB-5 and SB-22.

5.2 TPH Results

TPH was analyzed on the initial shallowest soil sample from each soil boring. TPH was fractionated into the GRO/DRO/MRO ranges. For the purpose of assessment and in accordance with regulatory guidance, TPH concentrations were compared to an assessment level of 100 mg/kg. Analytical data results show total TPH concentrations above 100 mg/kg were present in soil samples SB-3 (0-1') and SB-3 (1-2') but attenuate to below 100 mg/kg in the 2-3' soil sample interval. Analytical results for TPH in all other soil samples show either low level concentrations of TPH below 100 mg/kg or non-detected concentrations below the laboratory reporting limit. Since TPH concentrations were below the applicable assessment level in all soil samples, analysis of TPH on deeper soil samples was not necessary. No further assessment of TPH should be necessary.

5.3 BTEX Results

BTEX was analyzed on the initial shallowest soil sample from each soil boring. For the purpose of assessment and in accordance with regulatory guidance, benzene and total BTEX concentrations were compared to an assessment level of 10 mg/kg and 50 mg/kg, respectively. Analytical results show very low concentrations of benzene were detected only in soil samples SB-7 (0-1') and SB-8 (0-1') both of which were significantly below the 10 mg/kg assessment level. Benzene was not detected in any of the other soil samples submitted for laboratory analysis. BTEX concentrations were detected in soil samples from soil boring SB-7, SB-8, SB-11, SB-12, and SB-16; however, detected concentrations were below the applicable assessment level of 50 mg/kg. Total BTEX was not detected in any of the other soil samples submitted for laboratory analysis. Since benzene and total BTEX concentrations were below the applicable assessment

level in all soil samples, analysis of benzene and total BTEX on deeper soil samples was not necessary and screened from further assessment.

6.0 CONCLUSIONS

Assessment activities have been conducted in accordance with NMAC 19.15.29. Novo Oil & Gas reported a produced water release of approximately 660 barrels based on the justification provided in Section 1.1. Novo was able to recover approximately 150 barrels of the released produced water. The release area was immediately marked using wooden stakes to delineate wet verses dry soils. A total of 23 soil borings have been installed for the vertical and lateral delineation of chlorides, TPH, benzene, and total BTEX. Analytical results do indicate chloride concentrations exceed the 600 mg/kg assessment level in shallow soils within the release area. Based on the analytical results for TPH, benzene and total BTEX, no further evaluation of TPH, benzene or total BTEX is necessary.

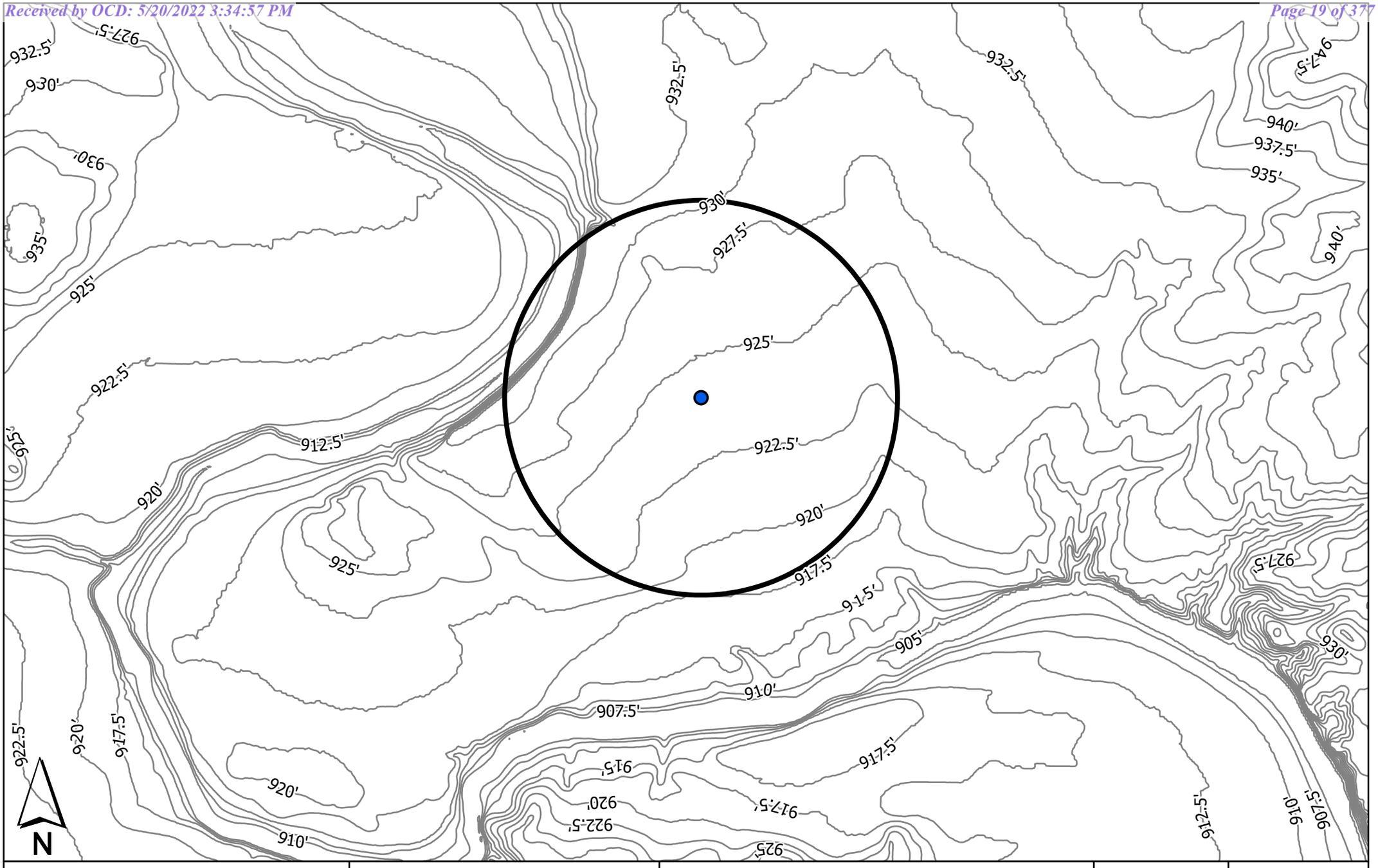
There are several areas where the lateral extent of chlorides from the release area are not well defined based on soil boring/sample data. The extent of chloride affected soil within an area containing numerous underground utilities and pipelines creates a physically complicated situation for assessment and remediation. Additionally, the presence of rock in the soil lithologic matrix does not allow for use of more non-invasive sampling methods (hand auger, dry-vac, and possibly hydrovac).

Following review and comment on this Assessment Report, Novo would welcome a meeting with the OCD and BLM to discuss possible remedies for the chloride impacts that range from the surface to near 13 feet below ground surface and recommendations on how to safely complete remedial activities. It may be feasible from a safety standpoint to remove the most chloride affected soils from the ground surface to 1-2 feet below ground surface in some areas; followed by addition of reagents to chemical bind the chlorides in place. However, full excavation and remediation is an unlikely remedy due to the safety concerns with the surrounding pipelines.

This assessment report will also be submitted to the BLM for their review and comment.

ALTAMIRA

FIGURES



Legend

- Novo Culebra Bluff Release

Notes:

Topographic Map

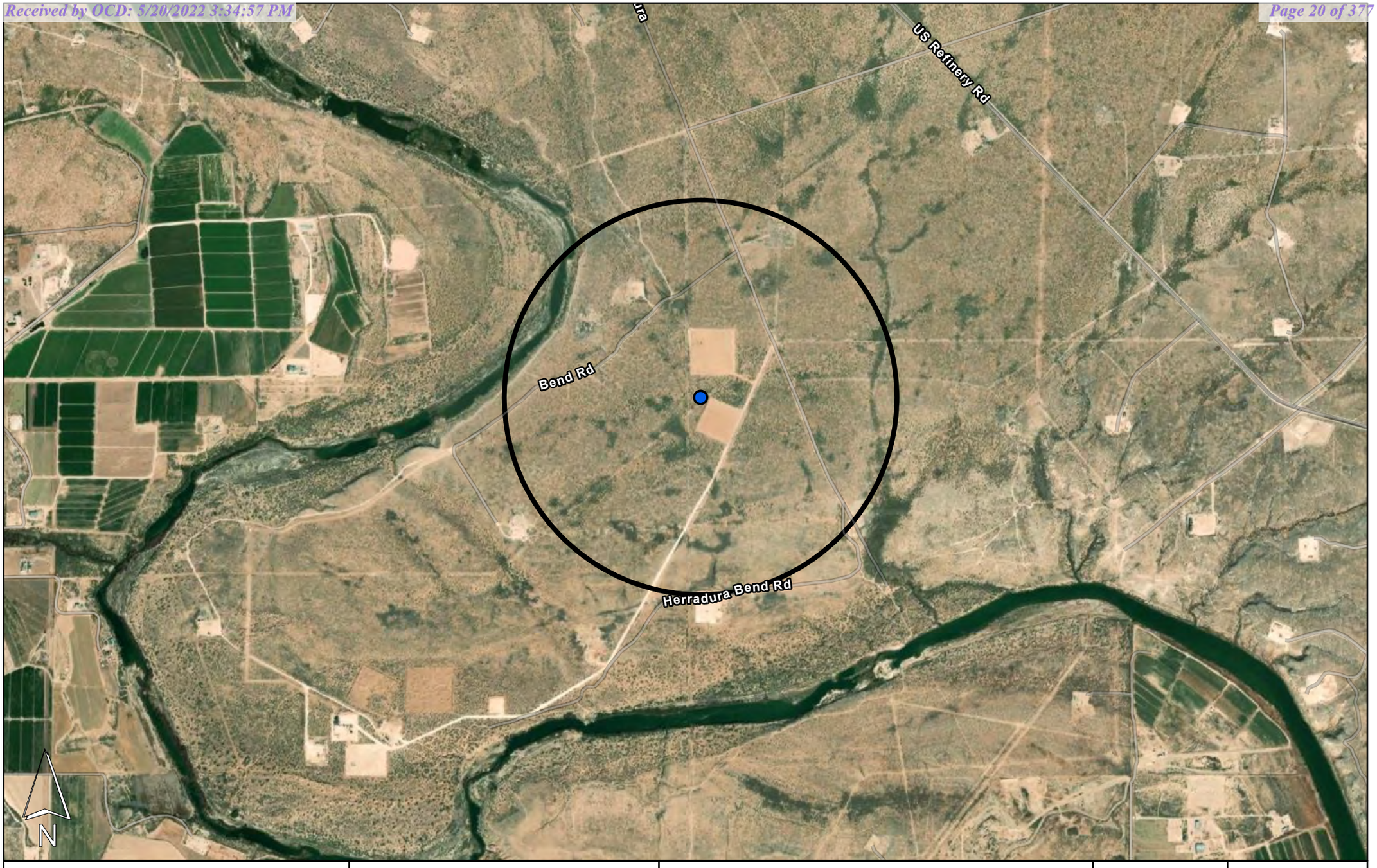
Culebra Bluff CTB3 – Produced Water Release
nAPP2132562482
Eddy County, New Mexico
Novo Oil & Gas

0 2,500 5,000 Feet

Date: 5/18/2022

Figure 1

ALTAMIRA



Legend

- Novo Culebra Bluff Release

Notes:

Site Location Map

Culebra Bluff CTB3 – Produced Water Release
nAPP2132562482
Eddy County, New Mexico
Novo Oil & Gas

0 2,500 5,000 Feet

Date: 5/18/2022

Figure 2

ALTAMIRA

Legend

- SOIL BORING LOCATION
- POINT OF RELEASE
- BURIED PIPELINE
- ROW
- CONSTR ROW
- STAKED ACCESS ROAD
- EXISTING ACCESS ROAD

Notes:

Site Plan Map

Culebra Bluff CTB3 – Produced Water Release
nAPP2132562482
Eddy County, New Mexico
Novo Oil & Gas

0 225 450 Feet

Date: 5/18/2022

Figure 3

ALTAMIRA

Legend

- SOIL BORING LOCATION
- POINT OF RELEASE
- BURIED PIPELINE
- ROW
- CONSTR ROW
- STAKED ACCESS ROAD
- EXISTING ACCESS ROAD
- CHLORIDE CONTOURS

Notes:

Iso Contour - Chlorides
> 600 mg/kg
- Refer to Table 1 for Chloride Data

Chloride Iso-Concentration Map

Culebra Bluff CTB3 – Produced Water Release
nAPP2132562482
Eddy County, New Mexico
Novo Oil & Gas

0 225 450 Feet

Date: 5/18/2022

Figure 4

ALTAMIRA

TABLE 1
Analytical Data Results Summary – Soil Assessment Samples (mg/kg)

Table 1
Analytical Data Results Summary - Soil Assessment Samples (mg/kg)
Novo Oil Gas - Culebra Bluff CTB3 Produced Water Release
(Discovered November 20, 2021)
Near Loving, New Mexico

Analyte			Chloride	BTEX	Benzene	TPH (low)	TPH (C10-28)	TPH (C28-36)	TPH
Method			300/4500-Cl-B	8260B	8260B	8015D	8015M	8015M	8015M
Table I - Closure Criteria (0-4')			600	50	10	-	-	-	100
Sample ID	Sample Date								
Source Area Soil Borings									
SB-2 (0-1')	1/25/2022		8,080	<0.00148	<0.00053	<0.616	33	54.5	87.5
SB-2 (2-3')	1/25/2022		3,570	<0.00155	<0.000556	<0.648	6.36	11.2	17.56
SB-2 (3-4')	1/25/2022		2,040	---	---	---	---	---	---
SB-2 (4-5')	1/25/2022		2,290	---	---	---	---	---	---
SB-2 (6-7')	1/25/2022		1,570	---	---	---	---	---	---
SB-2 (8-9')	1/25/2022		2,380	---	---	---	---	---	---
(SB-2 Resample Event)									
SB-2 (1-2')	4/28/2022		5,360	---	---	---	---	---	---
SB-2 (3-4')	4/28/2022		2,640	---	---	---	---	---	---
SB-2 (6-7')	4/28/2022		2,920	---	---	---	---	---	---
SB-2 (9-10')	4/28/2022		3,200	---	---	---	---	---	---
SB-2 (11-12')	4/28/2022		3,520	---	---	---	---	---	---
SB-2 (13-14')	4/28/2022		480	---	---	---	---	---	---
SB-3 (0-1')	1/25/2022		3,510	<0.00162	<0.000581	<0.674	62.9	57.5	120.4
SB-3 (1-2')	1/25/2022		1,860	<0.00159	<0.000571	<0.663	94.6	77.1	171.7
SB-3 (2-3')	1/25/2022		205	---	---	0.755 (J)	14.5	7.76	23.015
SB-4 (0-1')	1/25/2022		11.2 (J)	<0.00141	<0.000506	<0.587	2.66 (J)	18.1	20.76
SB-4 (1-2')	1/25/2022		19 (J)	<0.00143	<0.000514	<0.598	3.5 (J)	9.92	13.42
SB-5 (0-1')	1/25/2022		5,620	<0.00154	<0.000552	<0.641	3.58 (J)	13.8	17.38
SB-5 (1-1.5')	1/25/2022		6,120	<0.00164	<0.00059	<0.685	5.87	19.5	25.37
SB-5 (3-4')	4/28/2022		1,800	---	---	---	---	---	---
SB-5 (4-5')	4/28/2022		1,060	---	---	---	---	---	---
SB-5 (6-7')	4/28/2022		768	---	---	---	---	---	---
SB-5 (8-9')	4/28/2022		320	---	---	---	---	---	---
SB-6 (0-1')	1/25/2022		1,270	<0.00156	<0.00056	<0.651	4.1 (J)	24.8	28.9
SB-6 (1-2')	1/25/2022		1,440	<0.00154	<0.000554	<0.644	3.47 (J)	18.4	21.87
SB-6 (3-4')	4/28/2022		1,060	---	---	---	---	---	---
SB-6 (4-5')	4/28/2022		1,170	---	---	---	---	---	---
SB-6 (6-7')	4/28/2022		416	---	---	---	---	---	---
SB-6 (8-9')	4/28/2022		128	---	---	---	---	---	---
SB-7 (0-1')	1/25/2022		3,300	0.000706 (J)	0.000706 (J)	<0.717	2.94	11.9	14.84
SB-7 (1-2')	1/25/2022		1,160	<0.00172	<0.000617	<0.717	<1.87	6.14	6.14
SB-7 (2-2.5')	1/25/2022		751	<0.0018	<0.000648	<0.753	2.97 (J)	7.78	10.75

Table 1
Analytical Data Results Summary - Soil Assessment Samples (mg/kg)
Novo Oil Gas - Culebra Bluff CTB3 Produced Water Release
(Discovered November 20, 2021)
Near Loving, New Mexico

Analyte			Chloride	BTEX	Benzene	TPH (low)	TPH (C10-28)	TPH (C28-36)	TPH
Method			300/4500-Cl-B	8260B	8260B	8015D	8015M	8015M	8015M
Table I - Closure Criteria (0-4')			600	50	10	-	-	-	100
SB-7 (3-4')	4/28/2022		480	---	---	---	---	---	---
SB-8 (0-1')	1/25/2022		14,700	0.011414 (J)	0.000734 (J)	<0.706	14.2	30.9	45.1
SB-8 (2-3')	4/28/2022		3,280	---	---	---	---	---	---
SB-8 (3-4')	4/28/2022		2,320	---	---	---	---	---	---
SB-8 (4-5')	4/28/2022		3,000	---	---	---	---	---	---
SB-8 (8-9')	4/28/2022		864	---	---	---	---	---	---
SB-8 (10-11')	4/28/2022		768	---	---	---	---	---	---
SB-8 (12-13')	4/28/2022		208	---	---	---	---	---	---
SB-9 (0-1')	1/25/2022		5,360	<0.00222	<0.000797	<0.926	3.35 (J)	5.68	9.03
SB-9 (1-2')	1/25/2022		4,110	<0.00182	<0.000653	<0.759	6.02	32.7	38.72
SB-9 (2-2.5')	1/25/2022		3,350	---	---	---	---	---	---
SB-9 (3-4')	4/27/2022		1,400	---	---	---	---	---	---
SB-9 (4-5')	4/27/2022		64	---	---	---	---	---	---
SB-10 (0-1')	1/25/2022		39.7	<0.00188	<0.000676	<0.785	2.15 (J)	12	14.15
SB-10 (1-2')	1/25/2022		46	<0.00164	<0.000591	<0.687	3.04 (J)	19.2	22.24
SB-11 (0-1')	1/25/2022		5,980	0.00271 (J)	<0.000648	0.899 (J)	2.47 (J)	11.6	25.72
SB-11 (1-2')	1/25/2022		4,740	0.00157 (J)	<0.000654	<0.76	3.38 (J)	15.7	19.08
SB-11 (2-3')	1/25/2022		3,520	---	---	---	---	---	---
SB-11 (3-4')	1/25/2022		2,740	---	---	---	---	---	---
SB-11 (4-5')	4/28/2022		800	---	---	---	---	---	---
SB-11 (6-7')	4/28/2022		1,140	---	---	---	---	---	---
SB-11 (8-9')	4/28/2022		528	---	---	---	---	---	---
SB-11 (10-11')	4/28/2022		592	---	---	---	---	---	---
SB-12 (0-1')	1/26/2022		3,840	0.00135 (J)	<0.000524	<0.610	16.4	32.6	49
SB-12 (1-2)	4/28/2022		6,960	---	---	---	---	---	---
SB-12 (2-3')	4/28/2022		3,800	---	---	---	---	---	---
SB-12 (3-4')	4/28/2022		544	---	---	---	---	---	---
Lateral Delineation Soil Borings									
SB-1 (0-1')	1/25/2022		64.4	<0.00147	<0.000527	<0.612	<1.68	4.37	4.37
SB-1 (2-3')	1/25/2022		162	<0.00155	<0.000558	<0.648	15.3	47.3	62.6
SB-13 (0-1')	1/26/2022		18.7	<0.00186	<0.000667	<0.774	<1.67	7.97	7.97
SB-13 (1-2')	1/26/2022		24.5	<0.00152	<0.000545	<0.635	3.2 (J)	17.1	20.3
SB-13 (3-4')	1/26/2022		234	---	---	---	---	---	---
SB-14 (0-1')	1/26/2022		11.6 (J)	<0.00139	<0.000499	<0.579	1.68 (J)	11.1	12.78

Table 1
Analytical Data Results Summary - Soil Assessment Samples (mg/kg)
Novo Oil Gas - Culebra Bluff CTB3 Produced Water Release
(Discovered November 20, 2021)
Near Loving, New Mexico

Analyte			Chloride	BTEX	Benzene	TPH (low)	TPH (C10-28)	TPH (C28-36)	TPH
Method			300/4500-Cl-B	8260B	8260B	8015D	8015M	8015M	8015M
Table I - Closure Criteria (0-4')			600	50	10	-	-	-	100
SB-15 (0-1')	1/26/2022		**13.7 (J)**	<0.00142	<0.00051	<0.593	**2.07 (J)**	**13.4**	**15.47**
SB-15 (1-2')	1/26/2022		**12.9 (J)**	<0.00142	<0.00051	<0.593	**2.04 (J)**	**14.2**	**16.24**
SB-16 (0-1')	1/26/2022		**28**	**0.00137 (J)**	<0.000486	<0.565	**2.91 (J)**	**18.2**	**21.11**
SB-17 (0-1')	1/26/2022		**15.8 (J)**	<0.0015	<0.00054	<0.629	<1.69	**10.9**	**10.9**
SB-17 (1-2')	1/26/2022		**12.3 (J)**	<0.00148	<0.000532	<0.619	<1.71	**11**	**11**
SB-17 (2-3')	1/26/2022		<9.77	---	---	---	---	---	---
SB-18 (0-1')	1/26/2022		**25.5**	<0.00155	<0.000557	<0.647	**3.03 (J)**	**15.1**	**18.13**
SB-18 (1-2')	1/26/2022		**12.8 (J)**	<0.00163	<0.000584	<0.680	**2.21 (J)**	**9.26**	**11.47**
SB-18 (2-3')	1/26/2022		**12.5 (J)**	---	---	---	---	---	---
SB-18 (4-5')	4/28/2022		**128**	---	---	---	---	---	---
SB-18 (6-7')	4/28/2022		**496**	---	---	---	---	---	---
SB-19 (0-1')	1/26/2022		**15.5 (J)**	<0.00142	<0.000511	<0.593	**2.87 (J)**	**19.7**	**22.57**
SB-20 (0-1')	1/26/2022		<9.62	<0.00142	<0.00051	<0.592	<1.68	**32.4**	**32.4**
SB-20 (1-2')	1/26/2022		**10.1 (J)**	<0.00142	<0.000509	<0.591	<1.68	**8.04**	**8.04**
SB-21 (0-1')	1/26/2022		**14.9 (J)**	<0.00148	<0.00053	<0.616	**2.15 (J)**	**16.8**	**18.95**
SB-21 (1-2')	1/26/2022		**16.4 (J)**	<0.00143	<0.000515	<0.599	<1.69	**13.2**	**13.2**
SB-22 (0-1')	4/28/2022		**4,160**	---	---	---	---	---	---
SB-22 (2-3')	4/28/2022		**3,080**	---	---	---	---	---	---
SB-22 (3-4')	4/28/2022		**2,720**	---	---	---	---	---	---
SB-22 (6-7')	4/28/2022		**64**	---	---	---	---	---	---
SB-22 (8-9')	4/28/2022		**240**	---	---	---	---	---	---
SB-23 (0-1')	4/28/2022		**6,880**	---	---	---	---	---	---
SB-23 (2-3')	4/28/2022		**4,320**	---	---	---	---	---	---
SB-23 (3-4')	4/28/2022		**400**	---	---	---	---	---	---

Notes:
All results are in mg/kg
Closure Criteria Soils - Table I of 19.15.29.12 NMAC
TPH - Total Petroleum Hydrocarbons - includes GRO, DRO, MRO
BTEX - Benzene, Toluene, Ethylbenzene, Xylenes
< number is the SDL (not detected above the sample detection limit)
J - result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value
Bold indicates that a COC was detected
Shading indicates that a detected result exceeded the NMOCD Table 1 Closure Criteria Levels

APPENDIX A
Notification and Agency Correspondence

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	nAPP2132562482
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: Novo Oil & Gas Northern Delaware, LLC	OGRID
Contact Name: Kurt A. Shipley	Contact Telephone: 405-286-3916
Contact email: kshipley@novoog.com	Incident # *(assigned by OCD):* nAPP2132562482
Contact mailing address: 1001 West Wilshire Blvd., Suite 206 Oklahoma City, OK 73116	

Location of Release Source

Latitude 32.34103 Longitude -104.084188
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Culebra Bluff CTB3 (before San Mateo Meter)	Site Type: Produced Water Line (production)
Date Release Discovered: 11/20/2021 at 1:00am	API# *(if applicable)*

Unit Letter	Section	Township	Range	County
A	4	T23S	R28E	Eddy

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls): 660	Volume Recovered (bbls): 150
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☒ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

A break on a permanent produced water pipeline occurred at camel back riser above ground.
Pump rate of produced water: 17,000 bbl/day = 708 bbl/hour = 12 bbl/min
Pumping during release for 55 minutes

Volume: 12 bbl/min X 55 minutes = **660 bbls (27,720 gallons) estimated to have been released**

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2132562482
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? Calculated volume of the release was 660 bbls of produced water, which is greater than the 25 bbl threshold defining a major release.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

Immediate notification was provided by Kurt Shipley on November 20, 2021 at 2:00pm by phone. Notification was made to the NMOCD – Artesia Office (575.703.3842). A recorded message was provided on the hotline voicemail (a specific person did not answer). Bryan Haney with Altamira-US (on behalf of Novo Oil & Gas Northern Delaware, LLC.) submitted notification of a release (NOR) on the online OCD system on November 21, 2021.

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped.

☒ The impacted area has been secured to protect human health and the environment.

☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

All actions above have been completed.

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Kurt A. Shipley Title: Chief Operating Officer

Signature: _____ Date: December 2, 2021

email: kshipley@novoog.com Telephone: 405-286-3916

OCD Only

Received by: Jocelyn Harimon Date: 04/12/2022

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Operator: NOVO OIL & GAS NORTHERN DELAWARE, LLC 1001 West Wilshire Blvd Oklahoma City, OK 73116	OGRID: 372920
	Action Number: 64652
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	4/12/2022

ATTACHMENT 2

United States Department of Interior
Bureau of Land Management
Major Undesirable Event Report[1]

Report Type: Initial 24-Hour X		15-Day/Final ☐		Other/Follow-up ☐	
BLM Field Office: Carlsbad			State: New Mexico		
BLM Contact:		Date of this Report: 11-20-2021			
Company Official Reporting to BLM: Kurt Shipley (Chief Operating Officer)					
Operator: Novo Oil & Gas Northern Delaware, LLC					
Date/Time of Occurrence: 11-20-2021 at 1:00am		Date/Time BLM Notified: 11-20-2021 at 2:00pm			
Field/Unit Name: Purple Sage - Wolfcamp		Lease Number: NMNM13233			
State: NM	County: Eddy	Twp: T22S	Rng: R28E	Sec: 4	Qtr: NE
Lat 32.34103, Long -104.084188					
Surface Ownership: Federal	Federal: X	Indian: ☐	State: ☐	FEE ☐	

Type and Relevant Details of Event

Oil Spill ☐	Oil/Water Spill ☐	Gas Venting☐	Toxic Fluid Spill ☐
Saltwater Spill X	Other Spill (Specific) ☐	Blowout ☐	Fire ☐
Injury ☐	Fatality ☐	Property Damage ☐	Explosion ☐

Nature and Cause of Event:
Permanent produced water pipeline break at camel back riser above ground.

Environmental Impact:
Approximately 500 bbls saltwater spilled to the pipeline ROW. Approximate affected an area on ROW of 100 feet by 500 ft

Time Required to Control Event (Hours) :	90 minutes
Volume Discharged or Consumed:	OIL: ____ bbls WATER: 500 bbls GAS: ____mcf
Volumes Recovered:	OIL: ____ bbls WATER: 150 bbls
Net Volume Lost:	OIL: ____ bbls WATER: 350 bbls

Action Taken to Control Event: Removed 150 bbls of free standing water with vacuum truck. Marking area. Taking photos. Left message with BLM Spill Hotline.

Resulting Damage: None.

Clean-Up Procedures: Pending.

Cause/Extent of Personal Injury: None.

Actions the operator has taken or will take to prevent a recurrence of the incident:
Repaired line. Emergency shut off valves.

Agency Notification List: (Federal/State/Local):	Agency Name	Contact Name	Date/Time
	BLM – Carlsbad	Left message	11-20-2021 2:00pm
	NMOCD	Left message	11-20-2021 2:00pm

[1] As required per *Section III* , NTL-3A, Federal Register Notice Vol. 44-No. 7, Wednesday, January 10, 1979, [NTL-3A] Reporting Of Undesirable Events, Notice to Lessees and Operators; P. 2204-2206

Remarks: Include available Major Undesirable Events (MUE) history (attach additional sheet, if needed) for the past 3 years of the same well. Include pictures, if available

Attachment 2-2

From:	Hamlet, Robert, EMNRD
To:	Bryan Haney
Cc:	Bratcher, Mike, EMNRD; Nobui, Jennifer, EMNRD; Hensley, Chad, EMNRD; Velez, Nelson, EMNRD
Subject:	RE: [EXTERNAL] Incident nAPP2132562482 - Novo Oil & Gas Culebra Bluff CTB3 Produce Water Release - Update and Request for Review and Discussion
Date:	Monday, February 28, 2022 11:55:13 AM
Attachments:	image003.png

RE: Incident #**NAPP2132562482**

Bryan,

Your request for an extension to **May 20th, 2022** is approved. Please include this e-mail correspondence in the remediation and/or closure report.

Contaminated soil can be safely removed with shovels and/or a hydrovac. If rock refusal is encountered, use hydrovac to clean contaminated soil off rock. Use rotary drill to drill 18"-24" hole into the rock, pull sample and do lab analysis. If clean, layer clean rock with microbial strains to digest organics and hydrocarbons. Back-fill with clean material. A deferral can only be granted on a wellpad. If a release occurs off pad in the pasture area, the area must be reclaimed immediately.

If you still feel a further discussion is necessary, please schedule a meeting (preferably on Tuesday/Wednesday afternoon) with all CC'd environmental specialists including Brad Billings Bradford.Billings@state.nm.us

Regards,

Robert Hamlet ● Environmental Specialist - Advanced
Environmental Bureau
EMNRD - Oil Conservation Division
811 S. First Street | Artesia, NM 88210
575.909.0302 | robert.hamlet@state.nm.us
http://www.emnrd.state.nm.us/OCD/

From: Bryan Haney <Bryan.Haney@Altamira-us.com>
Sent: Friday, February 18, 2022 4:32 PM
To: Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@state.nm.us>; Hensley, Chad, EMNRD <Chad.Hensley@state.nm.us>
Subject: [EXTERNAL] Incident nAPP2132562482 - Novo Oil & Gas Culebra Bluff CTB3 Produce Water Release - Update and Request for Review and Discussion

Rob, Mike, Jennifer, and Chad,

Novo conducted soil assessment activities at the above site location during the week of January 25, 2022. During the soil investigation, a total of 21 soil borings were installed for the purpose of assessing the lateral and vertical extent of potential impacts to soil as a result of the November 20, 2021 release. Upon arrival to the site location, it was discovered that multiple pipeline companies and utilities are installing pipelines and utilities within the main footprint of the release area (between the two pad areas). As a results, we were only able to safely use the drill rig at two locations. The remaining soil borings were advanced using a hand auger. The soil matrix in this area consists of a mixture of unconsolidated soil and rock which prohibited advancement of many soil borings to depth.

I have attached a site plan showing the soil boring locations and outline of the affected soil area (based on visual and confirmed with analytical data results). Also attached is the current analytical data summary table. As you will notice chlorides are the main constituent of concern in the shallow soil profile.

The affected release area is physically located between the Novo Well Pad Area (to the north) and the Novo production/process area (to the south). As mentioned above, this area between the two pads contains numerous underground pipelines, water lines, and utilities that transect the entire release area. The current Google Earth view does not yet depict this activity, but several photos are attached that may help show the complexity of the area.

The recent development of the land located in the same footprint as the release area has resulted in the inability to safely conduct remediation activities. Under 19.15.29.12 C. (2), the regulation indicates that *"if contamination is located in areas immediately under or around production equipment such as production tanks, wellheads and pipelines where remediation could cause a major facility deconstruction, the remediation, restoration, and reclamation may be deferred with division written approval until the equipment is removed during other operations, abandoned, or whichever comes first".*

Additionally, there is a significant safety concern conducting any soil excavation/removal in this area while active pipelines and utilities are in place.

Novo would like to discuss the site conditions and assessment further with the commission and work towards a deferred plan for remediation, restoration and reclamation. Please also note that the 90-day period started on November 20, 2021 and would be up on February 20, 2022. Novo would like to request an extension of time so that Novo can work with the commission on plans moving forward and ensure regulatory compliance.

Please let Kurt Shipley and myself know when we can set up a call or meeting to review the project and options moving forward. Please also let us know about the request for extension so that we remain in compliance while finalizing a path forward with the commission. If you have any questions or would like any further information in the meantime, please let us know.

Thank you for your assistance on this project,

From: Hamlet, Robert, EMNRD
To: Bryan Haney
Cc: Kurt Shipley; Dara Tatum; Bratcher, Mike, EMNRD; Nobui, Jennifer, EMNRD; Harimon, Jocelyn, EMNRD
Subject: (Extension Denied) Incident nAPP2132562482 - Novo Oil & Gas Culebra Bluff CTB3 Produce Water Release
Date: Monday, May 16, 2022 9:01:11 AM
Attachments: image003.png

RE: Incident #**NAPP2132562482**

Bryan,

An extension for this release has already been granted. Your request for another extension is **denied**. Include this e-mail correspondence in the remediation and/or closure report.

Robert Hamlet ● Environmental Specialist - Advanced
Environmental Bureau
EMNRD - Oil Conservation Division
811 S. First Street | Artesia, NM 88210
575.909.0302 | robert.hamlet@state.nm.us
http://www.emnrd.state.nm.us/OCD/

From: Bryan Haney <Bryan.Haney@Altamira-US.com>
Sent: Friday, May 13, 2022 11:24 AM
To: Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Cc: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@state.nm.us>; Hensley, Chad, EMNRD <Chad.Hensley@state.nm.us>; Velez, Nelson, EMNRD <Nelson.Velez@state.nm.us>; Kurt Shipley <kshipley@novoog.com>; Dara Tatum <dtatum@novoog.com>
Subject: RE: [EXTERNAL] Incident nAPP2132562482 - Novo Oil & Gas Culebra Bluff CTB3 Produce Water Release - Update and Request for Time Extension

RE: Incident #**NAPP2132562482**

Rob,

Novo and Altamira are actively working to complete soil assessment activities at the Novo Culebra Bluff CTB3 site. We were able to safely install additional soil borings to help with assessing the general extent of chloride impacts. We are working with the lab on analysis of deeper sample intervals to obtain vertical delineation. It is possible that the extensive activities associated with pipeline and utility installations within the release footprint may have resulted in mixing of chloride affected soil.

Novo and Altamira anticipate completing the Soil Assessment Report and working on various options on remediation of chlorides. The current extension granted was through May 20, 2022. We are requesting an additional extension in order to complete lab analysis, prepare assessment report, and evaluate possible remedies. We are still in a situation where active mass remediation of affected soils may not be safely or physically possible due to the numerous underground pipelines and utilities that traverse the release area.

We would like to request a 90 day extension from May 20, 2022. I suspect we will have the assessment report to the agency earlier than this. Following submittal of the assessment report and options analysis, Novo and Altamira would likely need to schedule a meeting with the OCD to discuss the options and feasible extent of ability to remediate.

I have attached our current site plan for your review.

Thank you,
Bryan

Bryan Haney, TX P.G
Senior Project Manager | 361.658.3126 |
Bryan.Haney@altamira-us.com
altamira-us.com
ALTAMIRA

From: Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Sent: Monday, February 28, 2022 11:55 AM
To: Bryan Haney <Bryan.Haney@Altamira-US.com>
Cc: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@state.nm.us>; Hensley, Chad, EMNRD <Chad.Hensley@state.nm.us>; Velez, Nelson, EMNRD <Nelson.Velez@state.nm.us>
Subject: RE: [EXTERNAL] Incident nAPP2132562482 - Novo Oil & Gas Culebra Bluff CTB3 Produce Water Release - Update and Request for Review and Discussion

RE: Incident #**NAPP2132562482**

Bryan,

Your request for an extension to **May 20th, 2022** is approved. Please include this e-mail correspondence in the remediation and/or closure report.

Contaminated soil can be safely removed with shovels and/or a hydrovac. If rock refusal is

encountered, use hydrovac to clean contaminated soil off rock. Use rotary drill to drill 18"-24" hole into the rock, pull sample and do lab analysis. If clean, layer clean rock with microbial strains to digest organics and hydrocarbons. Back-fill with clean material. A deferral can only be granted on a wellpad. If a release occurs off pad in the pasture area, the area must be reclaimed immediately.

If you still feel a further discussion is necessary, please schedule a meeting (preferably on Tuesday/Wednesday afternoon) with all CC'd environmental specialists including Brad Billings Bradford.Billings@state.nm.us

Regards,

Robert Hamlet ● Environmental Specialist - Advanced
Environmental Bureau
EMNRD - Oil Conservation Division
811 S. First Street | Artesia, NM 88210
575.909.0302 | robert.hamlet@state.nm.us
http://www.emnrd.state.nm.us/OCD/

From: Bryan Haney <Bryan.Haney@Altamira-us.com>
Sent: Friday, February 18, 2022 4:32 PM
To: Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@state.nm.us>; Hensley, Chad, EMNRD <Chad.Hensley@state.nm.us>
Subject: [EXTERNAL] Incident nAPP2132562482 - Novo Oil & Gas Culebra Bluff CTB3 Produce Water Release - Update and Request for Review and Discussion

Rob, Mike, Jennifer, and Chad,

Novo conducted soil assessment activities at the above site location during the week of January 25, 2022. During the soil investigation, a total of 21 soil borings were installed for the purpose of assessing the lateral and vertical extent of potential impacts to soil as a result of the November 20, 2021 release. Upon arrival to the site location, it was discovered that multiple pipeline companies and utilities are installing pipelines and utilities within the main footprint of the release area (between the two pad areas). As a results, we were only able to safely use the drill rig at two locations. The remaining soil borings were advanced using a hand auger. The soil matrix in this area consists of a mixture of unconsolidated soil and rock which prohibited advancement of many soil borings to depth.

I have attached a site plan showing the soil boring locations and outline of the affected soil

area (based on visual and confirmed with analytical data results). Also attached is the current analytical data summary table. As you will notice chlorides are the main constituent of concern in the shallow soil profile.

The affected release area is physically located between the Novo Well Pad Area (to the north) and the Novo production/process area (to the south). As mentioned above, this area between the two pads contains numerous underground pipelines, water lines, and utilities that transect the entire release area. The current Google Earth view does not yet depict this activity, but several photos are attached that may help show the complexity of the area.

The recent development of the land located in the same footprint as the release area has resulted in the inability to safely conduct remediation activities. Under 19.15.29.12 C. (2), the regulation indicates that *"if contamination is located in areas immediately under or around production equipment such as production tanks, wellheads and pipelines where remediation could cause a major facility deconstruction, the remediation, restoration, and reclamation may be deferred with division written approval until the equipment is removed during other operations, abandoned, or whichever comes first".*

Additionally, there is a significant safety concern conducting any soil excavation/removal in this area while active pipelines and utilities are in place.

Novo would like to discuss the site conditions and assessment further with the commission and work towards a deferred plan for remediation, restoration and reclamation. Please also note that the 90-day period started on November 20, 2021 and would be up on February 20, 2022. Novo would like to request an extension of time so that Novo can work with the commission on plans moving forward and ensure regulatory compliance.

Please let Kurt Shipley and myself know when we can set up a call or meeting to review the project and options moving forward. Please also let us know about the request for extension so that we remain in compliance while finalizing a path forward with the commission. If you have any questions or would like any further information in the meantime, please let us know.

Thank you for your assistance on this project,

Bryan Haney, TX P.G

Senior Project Manager | 361.658.3126 | altamira-us.com

ALTAMIRA

From: Bryan Haney
To: Jim Amos (jamos@blm.gov)
Subject: FW: NMOCD Incident ID nAPP2132562482 Notification C-141 - Notification of Upcoming Field Assessment
Date: Thursday, January 20, 2022 1:06:00 PM
Attachments: image001.png
Novo MUE Report 11.20.2021.docx
nAPP2132562482C-141 Initial Notification 12-02-2021.pdf

Hi Jim,

I am providing notification to the BLM of field assessment activities at the above site starting on Tuesday January 25th. We plan to install approximately 25 soil borings to 15 feet and collection of soil samples for analysis of chlorides, TPH, and BTEX. If you have any questions please let me know.

Thank you,

Bryan

Bryan Haney, TX P.G
Senior Project Manager | 361.658.3126 | altamira-us.com
ALTAMIRA

From: Bryan Haney
Sent: Monday, December 13, 2021 10:40 AM
To: blm_nm_cfo_spill@blm.gov; Jim Amos (jamos@blm.gov) <jamos@blm.gov>
Cc: Kurt Shipley <kshipley@novoog.com>
Subject: NMOCD Incident ID nAPP2132562482 Notification C-141 Submittal

Attached is the NMOCD C-141 for the above referenced site for your records. Novo has already submitted the MUE Report to the BLM (also attached).

If you need any further information please let us know. We will keep the BLM notified and updated on progress regarding this incident.

Thank you

Bryan Haney, TX P.G
Senior Project Manager | 361.658.3126 | altamira-us.com
ALTAMIRA

From: Bryan Haney
To: Hamlet, Robert, EMNRD
Cc: Marcus, Ramona, EMNRD; Kurt Shipley
Subject: Novo Culebra Bluff Soil Assessment Activities - 48-Hour Notification - nAPP2132562482
Date: Thursday, January 20, 2022 1:18:00 PM
Attachments: Novo MUE Report 11.20.2021.docx
image001.png
nAPP2132562482C-141 Initial Notification 12-02-2021.pdf

Rob,

I am providing the 48-hour notification of field activities for the above site. We will be conducting the assessment starting January 25-26th. I tried contacting the Artesia office, but it was disconnected. Please let me know if there is another number or if I need to let anyone else know.

Scope of work will be installation of 25 soil borings to 15 feet and collection of soil samples for analysis of chlorides, BTEX, and TPH.

Thanks for your help,

Bryan

Bryan Haney, TX P.G
Senior Project Manager | 361.658.3126 | altamira-us.com
ALTAMIRA

From: Bryan Haney
To: Tucker, Shelly J
Cc: Kurt Shipley
Subject: FW: [EXTERNAL] Novo Culebra Bluff Soil Assessment Activities - 48-Hour Notification - nAPP2132562482
Date: Tuesday, April 19, 2022 4:48:00 PM
Attachments: Scope of Work Detail - NOVO Prod Water Release - 4-19-2022.docx
image001.png
Proposed Soil Boring Location Map - Additional Soil Assessment 4-19-2022.pdf
Novo MUE Report 11.20.2021.docx
nAPP2132562482C-141 Initial Notification 12-02-2021.pdf
GOONCH_WELLPAD_H_I_AND_CTB_3_PRODUCED_WATER_RELEASE.pdf

Hi Shelly,

Attached is a work plan and figure showing proposed soil boring locations for additional soil assessment at this site. I have also attached the initial notification to the BLM following the release for your reference. Please accept this as the 48-hour notification to the BLM of soil assessment activities. If you have any questions or would like additional information please let us know.

FYI, this site location is going to be very challenging due to the numerous underground utilities/pipelines that have recently been installed. Our plan is to complete the assessment to the best of our ability – safely and then submit an assessment report with some recommendations on possible remediation of the chlorides (which may be limited).

Thanks again,
Bryan

Bryan Haney, TX P.G
Senior Project Manager | 361.658.3126 |
Bryan.Haney@altamira-us.com
altamira-us.com
ALTAMIRA

From: Bryan Haney <Bryan.Haney@Altamira-US.com>
Sent: Tuesday, April 19, 2022 4:39 PM
To: Bryan Haney <Bryan.Haney@Altamira-US.com>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Cc: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; jennifer.nobui@state.nm.us; Hensley, Chad, EMNRD <Chad.Hensley@state.nm.us>; Kurt Shipley <kshipley@novoog.com>
Subject: RE: [EXTERNAL] Novo Culebra Bluff Soil Assessment Activities - 48-Hour Notification - nAPP2132562482

Rob,

Novo is attempting to conduct additional soil assessment at the above mentioned site location. The

focus will be delineation of chlorides (based on the previous soil assessment). We plan to start assessment on April 27th and expect this to take one day to complete assessment activities. Attached is our general scope of work and site plan for reference.

Please accept this as our 48-hour notification of field assessment activities.

Thank you,

Bryan

Bryan Haney, TX P.G
Senior Project Manager | 361.658.3126 |
Bryan.Haney@altamira-us.com
altamira-us.com
ALTAMIRA

From: Bryan Haney <Bryan.Haney@Altamira-us.com>
Sent: Friday, January 21, 2022 12:04 PM
To: Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Cc: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; jennifer.nobui@state.nm.us; Hensley, Chad, EMNRD <Chad.Hensley@state.nm.us>
Subject: RE: [EXTERNAL] Novo Culebra Bluff Soil Assessment Activities - 48-Hour Notification - nAPP2132562482

Rob,

I am resending yesterdays notification per your instructions below. I also called the Artesia office and left a message with Laura. Let me know if you have any questions.

SENT January 20, 2021
I am providing the 48-hour notification of field activities for the above site. We will be conducting the assessment starting January 25-26th. I tried contacting the Artesia office, but it was disconnected. Please let me know if there is another number or if I need to let anyone else know.

Scope of work will be installation of 25 soil borings to 15 feet and collection of soil samples for analysis of chlorides, BTEX, and TPH.

Thanks for your help,

Bryan

Bryan Haney, TX P.G
Senior Project Manager | 361.658.3126 | altamira-us.com
ALTAMIRA

From: Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Sent: Friday, January 21, 2022 11:39 AM
To: Bryan Haney <Bryan.Haney@Altamira-us.com>
Cc: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>
Subject: RE: [EXTERNAL] Novo Culebra Bluff Soil Assessment Activities - 48-Hour Notification - nAPP2132562482

Bryan,

You can call or email your notification. Sometimes we are on the phone or in meetings, so you can email us. Please make sure Mike Bratcher, Myself, Chad Hensley, Jennifer Nobui are included on any email notification.

Thanks

Robert Hamlet ● Environmental Specialist - Advanced
Environmental Bureau
EMNRD - Oil Conservation Division
811 S. First Street | Artesia, NM 88210
575.909.0302 | robert.hamlet@state.nm.us
http://www.emnrd.state.nm.us/OCD/

From: Bryan Haney <Bryan.Haney@Altamira-us.com>
Sent: Friday, January 21, 2022 10:26 AM
To: Marcus, Ramona, EMNRD <Ramona.Marcus@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Cc: Kurt Shipley <kshipley@novoog.com>
Subject: RE: [EXTERNAL] Novo Culebra Bluff Soil Assessment Activities - 48-Hour Notification - nAPP2132562482

Thank you, I will call them now.

Bryan Haney, TX P.G
Senior Project Manager | 361.658.3126 | altamira-us.com
ALTAMIRA

From: Marcus, Ramona, EMNRD <Ramona.Marcus@state.nm.us>
Sent: Friday, January 21, 2022 11:25 AM
To: Bryan Haney <Bryan.Haney@Altamira-us.com>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Cc: Kurt Shipley <kshipley@novoog.com>
Subject: RE: [EXTERNAL] Novo Culebra Bluff Soil Assessment Activities - 48-Hour Notification - nAPP2132562482

Dear Mr. Haney,

The following link will take you to a contact list: Contact Us - Oil Conservation (nm.gov)

The telephone number for the Artesia Office is **(505) 629-6116**.

Have a good weekend when it comes.

Ramona

Ramona Lopez Marcus ● Program Coordinator
Project Management Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
505.470.3044 | Ramona.Marcus@state.nm.us
http:// **www.emnrd.nm.gov**

From: Bryan Haney <Bryan.Haney@Altamira-us.com>
Sent: Thursday, January 20, 2022 12:18 PM
To: Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Cc: Marcus, Ramona, EMNRD <Ramona.Marcus@state.nm.us>; Kurt Shipley <kshipley@novoog.com>
Subject: [EXTERNAL] Novo Culebra Bluff Soil Assessment Activities - 48-Hour Notification - nAPP2132562482

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Rob,

I am providing the 48-hour notification of field activities for the above site. We will be conducting the assessment starting January 25-26th. I tried contacting the Artesia office, but it was disconnected. Please let me know if there is another number or if I need to let anyone else know.

Scope of work will be installation of 25 soil borings to 15 feet and collection of soil samples for analysis of chlorides, BTEX, and TPH.

Thanks for your help,

Bryan

Bryan Haney, TX P.G
Senior Project Manager | 361.658.3126 | altamira-us.com
ALTAMIRA

From: Hamlet, Robert, EMNRD
To: Bryan Haney
Cc: Kurt Shipley; Bratcher, Mike, EMNRD; Nobui, Jennifer, EMNRD
Subject: RE: [EXTERNAL] Novo Culebra Bluff Soil Assessment Activities - 48-Hour Notification - nAPP2132562482
Date: Wednesday, April 20, 2022 10:26:38 AM
Attachments: image003.png

Bryan,

Thank you for the notification on field work and assessment activities. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Robert Hamlet ● Environmental Specialist - Advanced
Environmental Bureau
EMNRD - Oil Conservation Division
811 S. First Street | Artesia, NM 88210
575.909.0302 | robert.hamlet@state.nm.us
http://www.emnrd.state.nm.us/OCD/

From: Bryan Haney <Bryan.Haney@Altamira-US.com>
Sent: Tuesday, April 19, 2022 3:39 PM
To: Bryan Haney <Bryan.Haney@Altamira-US.com>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Cc: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@state.nm.us>; Hensley, Chad, EMNRD <Chad.Hensley@state.nm.us>; Kurt Shipley <kshipley@novoog.com>
Subject: RE: [EXTERNAL] Novo Culebra Bluff Soil Assessment Activities - 48-Hour Notification - nAPP2132562482

Rob,

Novo is attempting to conduct additional soil assessment at the above mentioned site location. The focus will be delineation of chlorides (based on the previous soil assessment). We plan to start assessment on April 27th and expect this to take one day to complete assessment activities. Attached is our general scope of work and site plan for reference.

Please accept this as our 48-hour notification of field assessment activities.

Thank you,

Bryan

Bryan Haney, TX P.G
Senior Project Manager | 361.658.3126 |
Bryan.Haney@altamira-us.com
altamira-us.com
ALTAMIRA

From: Bryan Haney <Bryan.Haney@Altamira-us.com>
Sent: Friday, January 21, 2022 12:04 PM
To: Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Cc: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; jennifer.nobui@state.nm.us; Hensley, Chad, EMNRD <Chad.Hensley@state.nm.us>
Subject: RE: [EXTERNAL] Novo Culebra Bluff Soil Assessment Activities - 48-Hour Notification - nAPP2132562482

Rob,

I am resending yesterdays notification per your instructions below. I also called the Artesia office and left a message with Laura. Let me know if you have any questions.

SENT January 20, 2021
I am providing the 48-hour notification of field activities for the above site. We will be conducting the assessment starting January 25-26th. I tried contacting the Artesia office, but it was disconnected. Please let me know if there is another number or if I need to let anyone else know.

Scope of work will be installation of 25 soil borings to 15 feet and collection of soil samples for analysis of chlorides, BTEX, and TPH.

Thanks for your help,

Bryan

Bryan Haney, TX P.G
Senior Project Manager | 361.658.3126 | altamira-us.com
ALTAMIRA

From: Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Sent: Friday, January 21, 2022 11:39 AM
To: Bryan Haney <Bryan.Haney@Altamira-us.com>
Cc: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>
Subject: RE: [EXTERNAL] Novo Culebra Bluff Soil Assessment Activities - 48-Hour Notification - nAPP2132562482

Bryan,

You can call or email your notification. Sometimes we are on the phone or in meetings, so you can email us. Please make sure Mike Bratcher, Myself, Chad Hensley, Jennifer Nobui are included on any email notification.

Thanks

Robert Hamlet ● Environmental Specialist - Advanced
Environmental Bureau
EMNRD - Oil Conservation Division
811 S. First Street | Artesia, NM 88210
575.909.0302 | robert.hamlet@state.nm.us
http://www.emnrd.state.nm.us/OCD/

From: Bryan Haney <Bryan.Haney@Altamira-us.com>
Sent: Friday, January 21, 2022 10:26 AM
To: Marcus, Ramona, EMNRD <Ramona.Marcus@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Cc: Kurt Shipley <kshipley@novoog.com>
Subject: RE: [EXTERNAL] Novo Culebra Bluff Soil Assessment Activities - 48-Hour Notification - nAPP2132562482

Thank you, I will call them now.

Bryan Haney, TX P.G
Senior Project Manager | 361.658.3126 | altamira-us.com
ALTAMIRA

From: Marcus, Ramona, EMNRD <Ramona.Marcus@state.nm.us>
Sent: Friday, January 21, 2022 11:25 AM
To: Bryan Haney <Bryan.Haney@Altamira-us.com>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Cc: Kurt Shipley <kshipley@novoog.com>
Subject: RE: [EXTERNAL] Novo Culebra Bluff Soil Assessment Activities - 48-Hour Notification - nAPP2132562482

Dear Mr. Haney,

The following link will take you to a contact list: Contact Us - Oil Conservation (nm.gov)

The telephone number for the Artesia Office is **(505) 629-6116**.

Have a good weekend when it comes.

Ramona

Ramona Lopez Marcus ● Program Coordinator
Project Management Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
505.470.3044 | Ramona.Marcus@state.nm.us
http:// **www.emnrd.nm.gov**

From: Bryan Haney <Bryan.Haney@Altamira-us.com>
Sent: Thursday, January 20, 2022 12:18 PM
To: Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Cc: Marcus, Ramona, EMNRD <Ramona.Marcus@state.nm.us>; Kurt Shipley <kshipley@novoog.com>
Subject: [EXTERNAL] Novo Culebra Bluff Soil Assessment Activities - 48-Hour Notification - nAPP2132562482

Rob,

I am providing the 48-hour notification of field activities for the above site. We will be conducting the assessment starting January 25-26th. I tried contacting the Artesia office, but it was disconnected. Please let me know if there is another number or if I need to let anyone else know.

Scope of work will be installation of 25 soil borings to 15 feet and collection of soil samples for analysis of chlorides, BTEX, and TPH.

Thanks for your help,

Bryan

Bryan Haney, TX P.G

Senior Project Manager | 361.658.3126 | altamira-us.com

ALTAMIRA

APPENDIX B
Permits

John T. Romero (Acting)
State Engineer

Roswell Office
1900 WEST SECOND STREET
ROSWELL, NM 88201

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER

Trn Nbr: 716696
File Nbr: C 04588

Jan. 18, 2022

JOHN WHITE
WHITE DRILLING COMPANY INC
PO BOX 906
CLYDE, TX 79510

Greetings:

Your approved copy of the above numbered permit to drill a well for non-consumptive purposes is enclosed. You must obtain an additional permit if you intend to use the water. It is your responsibility to provide the contracted well driller with a copy of the permit that must be made available during well drilling activities.

Carefully review the attached conditions of approval for all specific permit requirements.

* If use of this well is temporary in nature and the well will be plugged at the end of the well usage, the OSE must initially approve of the plugging. If plugging approval is not conditioned in this permit, the applicant must submit a Plugging Plan of Operations for approval prior to the well being plugged. The Plugging Record must be properly completed and submitted to the OSE within 30 days of the well plugging.

* If the final intended purpose and condition requires a well ID tag and meter installation, the applicant must immediately send a completed meter report form to this office.

* The well record and log must be submitted within 30 days of the completion of the well or if the attempt was a dry hole.

* This permit expires and will be cancelled if no well is drilled and/or a well log is not received by the date set forth in the conditions of approval.

Appropriate forms can be downloaded from the OSE website www.ose.state.nm.us.

Sincerely,

Azucena Ramirez
(575)622-6521

Enclosure

explore

File No. C-4588 POD1

NEW MEXICO OFFICE OF THE STATE ENGINEER

WR-07 APPLICATION FOR PERMIT TO DRILL A WELL WITH NO WATER RIGHT

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/

Purpose:	☐ Pollution Control And/Or Recovery	☐ Ground Source Heat Pump
☐ Exploratory Well (Pump test)	☐ Construction Site/Public Works Dewatering	☒ Other(Describe): Environmental Soil Borings
☐ Monitoring Well	☐ Mine Dewatering	

A separate permit will be required to apply water to beneficial use regardless if use is consumptive or nonconsumptive.

☒ Temporary Request - Requested Start Date: 2/14/2022 Requested End Date: 3/14/2021

Plugging Plan of Operations Submitted? ☒ Yes ☐ No

1. APPLICANT(S)

Name: Novo Oil & Gas Northern Delaware, LLC	Name: White Drilling Company, Inc.
Contact or Agent: Kurt Shipley — check here if Agent ☐	Contact or Agent: John White — check here if Agent ☒
Mailing Address: 1001 W. Wilshire Blvd., Suite 206	Mailing Address: PO Box 906
City: Oklahoma City	City: Clyde
State: OK Zip Code: 73116	State: Texas Zip Code: 79510
Phone: 405-286-3916 ☐ Home ☒ Cell Phone (Work):	Phone: 325-893-2950 ☐ Home ☒ Cell Phone (Work):
E-mail (optional): kshipley@novoog.com	E-mail (optional): office@whitedrilling.com

OSE DII JAN 11 2022 PM 3:56

FOR OSE INTERNAL USE — Application for Permit, Form WR-07, Rev 11/17/16

File No. C-4588	Trn. No.: 716696	Receipt No.: 2-44132
Trans Description (optional): MON		
Sub-Basin: C	PCW/LOG Due Date: 1/18/23	

2. WELL(S) Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84).
District II (Roswell) and District VII (Cimarron) customers, provide a PLSS location in addition to above.

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

■ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Longitude:	Y or Northing or Latitude:	Provide if known: -Public Land Survey System (PLSS) (*Quarters or Halves , Section, Township, Range*) OR - Hydrographic Survey Map & Tract; OR - Lot, Block & Subdivision; OR - Land Grant Name
SB-1	32 20 28.31 32.3411981	104 5 7.82 -104.085505	Twp: T23S, Rng: R28E, Sec: 4, Qtr: NE

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ **Yes** ■ **No** **If yes, how many** NA

Other description relating well to common landmarks, streets, or other:
From Highway 31 (Potash Mines Road) and Highway 605, travel northwest on Highway 605 approximately 3.4 miles to Herradura Bend Road. Turn southwest on Herradura Bend Road and travel approximately 0.65 miles and turn/continue south 0.7 miles to site location.

Well is on land owned by: BLM (leased to Novo Oil & Gas)

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. Attached? ☐ **Yes** ■ **No**
If yes, how many_____

Approximate depth of well (feet): Boring (1) to 51 ft	Outside diameter of well casing (inches): 6-inch diam soil boring
Driller Name: White Drilling Company, Inc.	Driller License Number: WD-1456

3. ADDITIONAL STATEMENTS OR EXPLANATIONS

This permit is for the installation of an environmental soil boring for collection of soil samples associated with a release of produced water near the site area. Soil boring will be installed using an air rotary drilling rig. One soil boring will be installed to a depth of 51 feet below ground surface. Soil boring will be plugged following installation and soil sample collection. It is anticipated it will take approximately one hour to install the soil boring and plug back to the surface in accordance with the approved plugging plan.

OSE DII JAN 11 2022 PM3:56

FOR OSE INTERNAL USE — Application for Permit, Form WR-07

File No.: C-4588	Trn No.: 716696

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory: ☐ Include a description of any proposed pump test, if applicable.	**Pollution Control and/or Recovery:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	**Construction De-Watering:** ☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	**Mine De-Watering:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☐ Include the reason for the monitoring well, and, ☐ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Ground Source Heat Pump:** ☐ Include a description of the geothermal heat exchange project, ☐ The number of boreholes for the completed project and required depths. ☐ The time frame for constructing the geothermal heat exchange project, and, ☐ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), John White
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Applicant Signature

Applicant Signature

ACTION OF THE STATE ENGINEER

This application is:

☑ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 18th day of January 20 22, for the State Engineer,

John T. Romero (Acting), State Engineer

OSE DIT JAN 11 2022 PM3:56

By K. Parekh
Signature

Kashyap Parekh
Print

Title: Water Resources Manager I
Print

FOR OSE INTERNAL USE

Application for Permit, Form WR-07

File No.: C-4588	Trn No.: 716696

NEW MEXICO STATE ENGINEER OFFICE
PERMIT TO EXPLORE

SPECIFIC CONDITIONS OF APPROVAL

17-16 Construction of a water well by anyone without a valid New Mexico Well Driller License is illegal, and the landowner shall bear the cost of plugging the well by a licensed New Mexico well driller. This does not apply to driven wells, the casing of which does not exceed two and three-eighths inches outside diameter.

17-1A Depth of the well shall not exceed the thickness of the valley fill.

17-4 No water shall be appropriated and beneficially used under this permit.

17-6 The well authorized by this permit shall be plugged completely using the following method per Rules and Regulations Governing Well Driller Licensing, Construction, Repair and Plugging of Wells; Subsection C of 19.27.4.30 NMAC unless an alternative plugging method is proposed by the well owner and approved by the State Engineer upon completion of the permitted use. All pumping appurtenance shall be removed from the well prior to plugging. To plug a well, the entire well shall be filled from the bottom upwards to ground surface using a tremie pipe. The bottom of the tremie shall remain submerged in the sealant throughout the entire sealing process; other placement methods may be acceptable and approved by the state engineer. The well shall be plugged with an office of the state engineer approved sealant for use in the plugging of non-artesian wells. The well driller shall cut the casing off at least four (4) feet below ground surface and fill the open hole with at least two vertical feet of approved sealant. The driller must fill or cover any open annulus with sealant. Once the sealant has cured, the well driller or well owner may cover the seal with soil. A Plugging Report for said well shall be filed with the Office of the State Engineer in a District Office within 30 days of completion of the plugging.

Trn Desc: C 04588 POD1

File Number: C 04588
Trn Number: 716696

NEW MEXICO STATE ENGINEER OFFICE
PERMIT TO EXPLORE

SPECIFIC CONDITIONS OF APPROVAL (Continued)

17-7 The Permittee shall utilize the highest and best technology available to ensure conservation of water to the maximum extent practical.

17-B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with 72-12-12 NMSA 1978. A licensed driller shall not be required for the construction of a well driven without the use of a drill rig, provided that the casing shall not exceed two and three-eighths (2 3/8) inches outside diameter.

17-C The well driller must file the well record with the State Engineer and the applicant within 30 days after the well is drilled or driven. It is the well owner's responsibility to ensure that the well driller files the well record.
The well driller may obtain the well record form from any District Office or the Office of the State Engineer website.

17-P The well shall be constructed, maintained, and operated to prevent inter-aquifer exchange of water and to prevent loss of hydraulic head between hydrogeologic zones.

17-Q The State Engineer retains jurisdiction over this permit.

17-R Pursuant to section 72-8-1 NMSA 1978, the permittee shall allow the State Engineer and OSE representatives entry upon private property for the performance of their respective duties, including access to the ditch or acequia to measure flow and also to the well for meter reading and water level measurement.

NEW MEXICO STATE ENGINEER OFFICE
PERMIT TO EXPLORE

SPECIFIC CONDITIONS OF APPROVAL (Continued)

LOG The Point of Diversion C 04588 POD1 must be completed and the Well Log filed on or before 01/18/2023.

SHOULD THE PERMITTEE CHANGE THE PURPOSE OF USE TO OTHER THAN MONITORING PURPOSES, AN APPLICATION SHALL BE ACQUIRED FROM THE OFFICE OF THE STATE ENGINEER.

ACTION OF STATE ENGINEER

Notice of Intention Rcvd:	Date Rcvd. Corrected:
Formal Application Rcvd: 01/11/2022	Pub. of Notice Ordered:
Date Returned - Correction:	Affidavit of Pub. Filed:

This application is approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare of the state; and further subject to the specific conditions listed previously.

Witness my hand and seal this 18 day of Jan A.D., 2022

John T. Romero (Acting), State Engineer

By: K. Parekh
KASHYAP PAREKH

Trn Desc: C 04588 POD1

File Number: C 04588
Trn Number: 716696

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
ROSWELL

John T. Romero, P.E.
Acting State Engineer

DISTRICT II
1900 West Second St.
Roswell, New Mexico 88201
Phone: (575) 622-6521
Fax: (575) 623-8559

January 12, 2022

Novo Oil & Gas Northern Delaware LLC
1001 W. Wilshire Blvd., Suite 206
Oklahoma City, OK 73116

RE: Well Plugging Plan of Operations for **C-4588-POD1**

Greetings:
Enclosed is your copy of the Well Plugging Plan of Operations for the above referenced project. The proposed method of operation is found to be acceptable and in accordance with the Rules and Regulations Governing Well Driller Licensing; Construction, Repair and Plugging of Wells 19.27.4 NMAC adopted June 30, 2017 by the State Engineer.

(1) Plugging operations shall also be conducted in accordance with NMED, NMOCD, or other State or Federal agencies having oversight for the above described project.

(2) Well that encounters water - No more than 6.0 gallons water per 94 lb. sack of neat cement slurry. High Solids Bentonite Grout – Mixing ratios to attain 20% active solids by weight.

(3) Dry borehole – Drill cuttings or clean native fill up to 20 feet of land surface. 0 to 20 feet of land surface: Bentonite Chips – Fresh water to be added above the water column at rate of 5 gallons per 50-lb sack/bucket

(4) Any deviation from this plan must obtain an approved variance from this office prior to implementation.

Within 30 days after the well is plugged, the well driller is required to file a complete plugging record with the OSE and the permit holder.

Sincerely,

K. Parekh

Kashyap Parekh
Water Resources Manager I

WELL PLUGGING PLAN OF OPERATIONS

NOTE: A Well Plugging Plan of Operations shall be filed with and accepted by the Office of the State Engineer prior to plugging. This form may be used to plug a single well, or if you are plugging multiple monitoring wells on the same site using the same plugging methodology.

Alert! Your well may be eligible to participate in the Aquifer Mapping Program (AMP)-NM Bureau of Geology geoinfo.nmt.edu/resources/water/cgmn/ if within an area of interest and meets the minimum construction requirements, such as there is still water in your well, and the well construction reflected in a well record and log is not compromised, contact AMP at 575-835-5038 or -6951, or by email nmbg-waterlevels@nmt.edu, prior to completing this prior form. Showing proof to the OSE that your well was accepted in this program, may delay the plugging of your well until a later date.

I. FILING FEE: There is no filing fee for this form.

II. GENERAL / WELL OWNERSHIP: ☐ Check here if proposing one plan for multiple monitoring wells on the same site and attaching WD-08m

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: ~~SB-1~~ C - 4588 - POD1

Name of well owner: Novo Oil & Gas Northern Delaware, LLC

Mailing address: 1001 W. Wilshire Blvd., Suite 206 County: Oklahoma

City: Oklahoma City State: OK Zip code: 73116

Phone number: 405-286-3916 E-mail: kshipley@novoog.com

III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: White Drilling Company, Inc.

New Mexico Well Driller License No.: WD-1456 Expiration Date: 9/31/2022

IV. WELL INFORMATION: ☐ **Check here if this plan describes method for plugging multiple monitoring wells on the same site and attach supplemental form WD-08m and skip to #2 in this section.**

Note: A copy of the existing Well Record for the well(s) to be plugged should be attached to this plan.

1) GPS Well Location: Latitude: 32 deg, 20 min, 28.32 sec
Longitude: 104 deg, 05 min, 07.82 sec, NAD 83

RECEIVED OCD JAN 21 2022 PM 3:56

2) Reason(s) for plugging well(s):

Plugging will be for environmental soil boring, which may encounter water. A well will not be installed, however the boring will be plugged within 72 hours upon completion if groundwater in encountered.

3) Was well used for any type of monitoring program? No If yes, please use section VII of this form to detail what hydrogeologic parameters were monitored. If the well was used to monitor contaminated or poor quality water, authorization from the New Mexico Environment Department may be required prior to plugging.

4) Does the well tap brackish, saline, or otherwise poor quality water? NA If yes, provide additional detail, including analytical results and/or laboratory report(s): NA

5) Static water level: NA feet below land surface / feet above land surface (circle one)

6) Depth of the well: NA feet

7) Inside diameter of innermost casing: NA inches.

8) Casing material: NA

9) The well was constructed with:

☐ an open-hole production interval, state the open interval: NA

☐ a well screen or perforated pipe, state the screened interval(s): NA

10) What annular interval surrounding the artesian casing of this well is cement-grouted? _____

11) Was the well built with surface casing? NA If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? NA If yes, please describe:

NA

12) Has all pumping equipment and associated piping been removed from the well? NA If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

V. DESCRIPTION OF PLANNED WELL PLUGGING:

☐ **If plugging method differs between multiple wells on same site, a separate form must be completed for each method.**

Note: If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie pipe, a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional technical information, such as geophysical logs, that are necessary to adequately describe the proposal. Attach a copy of any signed OSE variance to this plugging plan.

Also, if this planned plugging plan requires a variance to 19.27.4 NMAC, attach a detailed variance request signed by the applicant.

1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well:

If groundwater is encountered, Trimie Type 1 cement-bentonite slurry from bottom of boring to ground level. In the event that groundwater is not encountered, backfill with clean dry cuttings or clean native fill to 10 feet, 10-0 feet, 99lbs of 3/8 bentonite chips hydrated with 10 gallons of water.

2) Will well head be cut-off below land surface after plugging? NA

VI. PLUGGING AND SEALING MATERIALS:

Note: The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant. Attach a copy of the batch mix recipe from the cement company and/or product description for specialty cement mixes or any sealant that deviates from the list of OSE approved sealants.

1) For plugging intervals that employ cement grout, complete and attach Table A.

2) For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.

3) Theoretical volume of grout required to plug the well to land surface: 10 CF or 74 Gallons

4) Type of Cement proposed: Type 1 Cement-Bentonite Slurry

5) Proposed cement grout mix: 8.45 gallons of water per 94 pound sack of Portland cement.

6) Will the grout be: _____ batch-mixed and delivered to the site

x mixed on site

OSE OIL JAN 11 2022 PM3:56

7) Grout additives requested, and percent by dry weight relative to cement:

NA

8) Additional notes and calculations:

NA

VII. ADDITIONAL INFORMATION: List additional information below, or on separate sheet(s):

NA

VIII. SIGNATURE:

I, John White, say that I have carefully read the foregoing Well Plugging Plan of Operations and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the plugging of wells and will comply with them, and that each and all of the statements in the Well Plugging Plan of Operations and attachments are true to the best of my knowledge and belief.

Signature of Applicant Date

IX. ACTION OF THE STATE ENGINEER:

This Well Plugging Plan of Operations is:

OSE DII JAN 11 2022 PM3:56

X Approved subject to the attached conditions.

_____ Not approved for the reasons provided on the attached letter.

Witness my hand and official seal this 12th day of JANUARY, 2022

John T. Romero

~~John R. D'Antonio Jr. P.E.~~, New Mexico State Engineer (Acting)

By: K. Parekh

KASHYAP PAREKH

WATER RESOURCES MANAGER I

TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of grout placement (ft bgl)	0		
Bottom of proposed interval of grout placement (ft bgl)	51		
Theoretical volume of grout required per interval (gallons)	47		
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement	8.45		
Mixed on-site or batch-mixed and delivered?	on-site		
Grout additive 1 requested	5% Bentonite		
Additive 1 percent by dry weight relative to cement			
Grout additive 2 requested			
Additive 2 percent by dry weight relative to cement			OSE OIL JAN 11 2022 PM 3:56

TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)			
Bottom of proposed sealant of grout placement (ft bgl)			
Theoretical volume of sealant required per interval (gallons)			
Proposed abandonment sealant (manufacturer and trade name)			

OSE DIT JAN 11 2022 PM3:56

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.)	WELL TAG ID NO.	OSE FILE NO(S).
C-4588-POD1 (SB-1)		C-4588

WELL OWNER NAME(S)	PHONE (OPTIONAL)
Novo Oil & Gas Northern Delware LLC	

WELL OWNER MAILING ADDRESS	CITY	STATE	ZIP
1001 W. Wilshire Blvd., Suite 206	Oklahoma City	OK	73116

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	20	31.47	N
	LONGITUDE	104	5	8.404	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

Culebra Bluff CTB3

2. DRILLING & CASING INFORMATION

LICENSE NO.	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD-1456	John W. White	White Drilling Company, Inc.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
1/25/2022	1/25/2022		50.0	46.5

COMPLETED WELL IS: ☐ ARTESIAN ☐ DRY HOLE ☑ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 46.5

DRILLING FLUID: ☑ AIR ☐ MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ☑ ROTARY ☐ HAMMER ☐ CABLE TOOL ☐ OTHER – SPECIFY:

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
0.0	50.0	5.0	Type 1 Cement-Bentonite Slurry	6.82	Pump Mix w/Trimie Pipe

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

FILE NO.	POD NO.	TRN NO.
LOCATION	WELL TAG ID NO.	PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES **(attach supplemental sheets to fully describe all units)**	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0.0	3.0	3.0	Brown sandy silt w/caliche.	Y ✓ N	
3.0	18.0	15.0	Limestone gravel.	Y ✓ N	
18.0	20.0	2.0	Red/brown sandy clay.	Y ✓ N	
20.0	25.0	5.0	Red/brown sandstone w/red brn silty sandy clay mixed	Y ✓ N	
25.0	45.0	20.0	Red/brown sandy clay/clayey sand	Y ✓ N	
45.0	46.0	1.0	Brown sand.	Y ✓ N	
46.0	47.0	1.0	Brown sandy clay.	✓ Y N	
47.0	50.0	3.0	Brown sand.	✓ Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☐ PUMP ☐ AIR LIFT ☐ BAILER ☑ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 0.00

5. TEST; RIG SUPERVISION

WELL TEST: TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION:

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

William B. Atkins

6. SIGNATURE

BY SIGNING BELOW, I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED WELL. I ALSO CERTIFY THAT THE WELL TAG, IF REQUIRED, HAS BEEN INSTALLED AND THAT THIS WELL RECORD WILL ALSO BE FILED WITH THE PERMIT HOLDER WITHIN 30 DAYS AFTER THE COMPLETION OF WELL DRILLING.

John W. White — SIGNATURE OF DRILLER / PRINT SIGNEE NAME

02/08/2022 — DATE

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/2019)

FILE NO.	POD NO.	TRN NO.	
LOCATION		WELL TAG ID NO.	PAGE 2 OF 2

WHITE DRILLING COMPANY, INC.
ENVIRONMENTAL/GEOTECHNICAL DAILY DRILLING SHEET

Page 1 of 2

Client: ALTAMIRA

Project: NOVO-Culebra Bluff CTB3			Date Started: 1/25/2022	Well No.: SB-2
Project Address: Rural Eddy Co., NM State/City/Zip:			Date Completed: 1/25/2022	Total Depth: 15'
Well Owner: Novo Oil & Gas Northern Delware LLC			Driller: Dallas Rader	Hole Diameter: 5"
Owner Address: 1001 W. Wilshire Blvd, Ste. 206 State/City/Zip: Oklahoma City, OK 73116			Driller's Helpers: Bo Atkins	Logged By: Bo Atkins
WELL COMPLETION DATA			**WELL PLUGGING DATA**	
Diameter:	Screen Slot:	PVC or Steel Schedule:	Casing left in well (ft):	Total Casing Pulled (ft):
Screen Depth:	Sand Feet/Bags: /	Sand Size:	Bentonite Feet/bags: /	Portland/Bent./Grout Ft/bag: 15 - 0 / 2 bags
Riser Depth:	Bentonite Feet/Bags: /	Cement Feet/Bags: /	**GPS:** 32.3419615 -104.0856639	Total Disposal Drums:
Surface Csg. Dia:	Surface Casing Depth:	Cement Feet/Bags: /	Water Level: TOC Dry GL ☐ Clean ☒ Dirty	

DEPTH (ft.)	DESCRIPTION
0.0 to 14.0	Caliche.
14.0 to 15.0	Red brown sandy clay.

WHITE DRILLING COMPANY, INC.
ENVIRONMENTAL/GEOTECHNICAL FIELD LOG

Well No: SB-2
Page 2 of 2

DEPTH (ft.)	DESCRIPTION

Per Diem (days)	Well Dev./hrs.	Decon/hrs.	Air Knife/ Hydro Vac/hrs.	NX Core/ft.	Standby Time/hrs.	Rig Time/hrs.
		.25				

DRILLING METHOD: ☒ Air Rotary ☐ Mud Rotary ☐ Driven ☐ Air Hammer ☐ Other

SURFACE COMPETION:
☐ Alternative Procedure Used ☐ Surface Sleeve Installed
☐ Surface Slab Installed ☐ Bollards _____
☐ Upright Vault _____ ☐ Flush Mount Vault _____

METHOD OF COMPLETION:
☐ Hand Mix
☒ Pump Mix w/tremmie pipe

Notes: On-site Safety Time:

☐ **SKIDSTEER** _____ **days** ☐ **VAC TRAILER USED** _____ **days**
☐ **SAND MATS** _____ **days**

TYPE OF CONTAMINATION:
☐ **Hydorcarbon** ☒ **Cholrides**
☐ **Other** _____

DRILLERS SIGNATURE: Bo Atkins

APPENDIX C
Photographic Documentation

Appendix C - Photograph Log
Culebra Bluff CTB3 Produced Water Release
Incident ID: nAPP2132562482

View north at meter station and camel back – point of release at poly piping

View south at release area to the southwest

Appendix C - Photograph Log
Culebra Bluff CTB3 Produced Water Release
Incident ID: nAPP2132562482

View northwest at point of release and area south or release

View southwest at release area near central and west portions of site

Appendix C - Photograph Log
Culebra Bluff CTB3 Produced Water Release
Incident ID: nAPP2132562482

View southeast at release area – Goonch CTB3 pad in background, release around pipeline

View south at release area and various water lines

Appendix C - Photograph Log
Culebra Bluff CTB3 Produced Water Release
Incident ID: nAPP2132562482

View west towards point of release from approximate SB-23 location, pipeline and water lines in assessment area

View southeast at release area and Goonch CTB3 pad, water lines and above ground equipment

Appendix C - Photograph Log
Culebra Bluff CTB3 Produced Water Release
Incident ID: nAPP2132562482

View southeast at point of release meter/camel back and pipelines in background

View southeast at rig set up at SB-1 location

Appendix C - Photograph Log
Culebra Bluff CTB3 Produced Water Release
Incident ID: nAPP2132562482

View south – SB-1 boring plugged and abandoned

View southeast at rid setup at SB-2 location

Appendix C - Photograph Log
Culebra Bluff CTB3 Produced Water Release
Incident ID: nAPP2132562482

View south at hand auger soil boring location

View west at hand auger boring location SB-20 and various pipelines

Appendix C - Photograph Log
Culebra Bluff CTB3 Produced Water Release
Incident ID: nAPP2132562482

View southeast at hand auger boring location near pad area

View southwest – hand auger soil boring location SB-5

Appendix C - Photograph Log
Culebra Bluff CTB3 Produced Water Release
Incident ID: nAPP2132562482

View north across site area at pipelines, water lines, and construction within ROWs

View north across site area at pipelines, trenches, and construction within ROWs

Appendix C - Photograph Log
Culebra Bluff CTB3 Produced Water Release
Incident ID: nAPP2132562482

View northwest at surface equipment, pipelines and construction within ROWs

View west at surface equipment, pipelines and construction within ROWs

APPENDIX D
Soil Boring Logs

BORING RECORD SB-1

32.3420774
-104.0856686 OUTSIDE DELINEATION

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
	GROUND SURFACE: 0								BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
	0-1'	BROWN SANDY SILT (ML) & CALICHE, DRY	ML			0			
	1-3'	BROWN SANDY SILT-SILT (ML), HARD DRY	ML			0			
	3-8'	TAN-WHITE SANDY SILTY (ML) - ROCK INTERBEDDED	ML			0			
	5					0			5
	8-18'	TAN SILTY SAND (SM), SOME ROCK HARD, DRY, VERY FINE GRAINED	SM			0			
	10								10
	15					0			15
	18-35'	BROWN SILTY SANDY CLAY (CL) STIFF, DRY, LOW PLASTICITY	CL			0			20
	20	SLT MOIST @ 35' BGS BECOMING DARKER BROWN IN COLOR							
	25					0			25
	30					0			30
	35					0			35

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release

PROJECT NUMBER: NVONM2104

BORING NUMBER: SB4

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 1/25/2022
DRILLING METHOD: Direct Push/Air Rotary
DRILLED BY: [redacted] WHITE DRILLING
LOGGED BY: BH
CHECKED BY: BH
DRAWING NO.:
DRAWN BY:
PAGE 1 OF 1

BORING RECORD

SB-1 (CONT)

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
		32.3420774 -104.0856686 GROUND SURFACE:							BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
	35	35'-46' DARK BROWN - ORANGE/BROWN SILTY CLAY (CL), HARD-STIFF, SLT. MOIST, MEDIUM PLASTICITY							35
	40					0			40
	45					0			45
		46'-50' ORANGE/BROWN SAND, FINE GRAINED WET-SATURATED, WELL SORTED.							
	50					0			50
						0			
		TD = 50' BGS							
	55								55
		SAMPLES: 0-1' @ 957 2-3' @ 1004 3-4' @ 1006 5-6' @ 1008 9-10' @ 1015							
	25								25
	30								30
	35								35

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release

PROJECT NUMBER: NVONM2104

BORING NUMBER: SB-1

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 1/25/2022
DRILLING METHOD: Direct Push/Air Rotary
DRILLED BY: ~~Vortex Drilling~~ WHITE DRILLING
LOGGED BY: BA
CHECKED BY: BA
DRAWING NO.:
DRAWN BY: —
PAGE 1 OF 1

BORING RECORD SB-2

GROUND SURFACE:

N 32.3419615 W-104.0850639 POINT OF RELEASE SOURCE

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
	0	0-1 BROWN SILTY SAND (SM) VERY FINE GRAINED, HARD, SOME ROCK	SM			0			BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
		1-14' LIGHT TAN/WHITE SANDY SILT (ML) W/ ROCK, HARD, DRY				0			
	5					0			
			ML			0			
	10					0			
		14-15' ORANGE-BROWN SILTY CLAY (CL), HARD DRY, LOW PLASTICITY	CL			0			
	15	TD= 15' BGS							
	20								
	25	SAMPLES: 0-1' @ 1111; 2-3' @ 1119; 3-4' @ 1121; 4-5' @ 1123; 6-7' @ 1129; 8-9' @ 1133; 9-10' @ 1135; 14-15' @ 1140							
	30								
	35								

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release

PROJECT NUMBER: NVONM2104

BORING NUMBER: SB-2

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 1/25/2022
DRILLING METHOD: Direct Push/Air Rotary
DRILLED BY: [redacted] WHITE DRILLING
LOGGED BY: BH
CHECKED BY: BH
DRAWING NO.: -
DRAWN BY: -
PAGE 1 OF 1

BORING RECORD SB-3

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
		N 32.3415208 W-104.0858178 IN SOURCE AREA							BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
	0	GROUND SURFACE:							0
		0-2' BROWN CLAYEY SILTY SAND (SM), SOFT FINE GRAINED, MOIST	SM			0			
		2-4' BROWN SANDY SILT-SILT (ML), SOFT SOME ROCK IN MATRIX, MOIST	ML			0			
	5					0			5
		REFUSAL @ 4' - ROCK							
		TD= 4' BGS							
	10								10
	15								15
	20	SAMPLES: 0-1' @ 1330 1-2' @ 1333 2-3' @ 1337 3-4' @ 1342							20
	25								25
	30								30
	35								35

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release

PROJECT NUMBER: NVONM2104

BORING NUMBER: SB-3

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 1/25/2022
DRILLING METHOD: ~~Direct Push/Air Rotary~~ HAND AUGER
DRILLED BY: ~~Vertex Drilling~~ WHITE DRILLING
LOGGED BY: BH
CHECKED BY: BH
DRAWN BY:
DRAWING NO.:
PAGE 1 OF 1

BORING RECORD SB-4

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
		N 32.3410562 W-104.0359848 IN SOURCE AREA							BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
	0	GROUND SURFACE:							0
		0-2' BROWN SILT (ML), SOFT DRY, ROCK WITHIN MATRIX	ML			0			
		0							
		REFUSAL @ 2' IN HARD ROCK							
	5	TD= 2' BGS							5
	10								10
	15	SAMPLES: 0-1' @ 1410 1-2' @ 1415							15
	20								20
	25								25
	30								30
	35								35

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release

PROJECT NUMBER: NVONM2104

BORING NUMBER: SB-4

ALTAMIRA
3700 West Robinson St., Suite 200 ▪ Norman, Oklahoma 73072 ▪ 405-701-5058
www.altamira-us.com

DATE DRILLED: 1/25/22
DRILLING METHOD: ~~Direct Push/Air Rotary~~ HAND AUGER
DRILLED BY: ~~Vance Drilling~~ WHITE DRILLING
LOGGED BY: BM
CHECKED BY: BM
DRAWING NO.: —
DRAWN BY: —
PAGE 1 OF 1

BORING RECORD SB-5

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
		N 32.340855 W-104.086133 IN SOURCE AREA							BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
	0	GROUND SURFACE: (0-1.5) BROWN CLAYEY SAND (SM), ROCK PRESENT IN MATRIX, MOIST STIFF-FIRM	SM			0			0
	5	REFUSAL IN ROCK AT 1.5' BGS							5
	10	TD = 1.5 BGS							10
	15								15
	20	SAMPLES 0-1' @ 1457 1-2' @ 1505							20
	25								25
	30								30
	35								35

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release

PROJECT NUMBER: NVONM2104

BORING NUMBER: SB-5

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 1/25/2022
DRILLING METHOD: ~~Direct Push/Air Rotary~~ HAND AUGER
DRILLED BY: ~~Vertex Drilling~~ WHITE DRILLING
LOGGED BY: BA
CHECKED BY: BA
DRAWN BY:
DRAWING NO.: -
PAGE 1 OF 1

BORING RECORD SB-6

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
		N 32.3414817 W-104.0852599 IN SOURCE AREA							BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
	0	GROUND SURFACE:							0
		0-2' BROWN SILTY SAND (SM), VERY FINE GRAINED, MIX W/ ROCKS MOIST REFUSAL @ 2' BGS	SM			0			
						0			
		TD= 2' BGS							
	5								5
	10								10
	15								15
	20								20
		SAMPLES: 0-1' 1426 1-2' 1432							
	25								25
	30								30
	35								35

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release
PROJECT NUMBER: NVONM2104
BORING NUMBER: SB-6

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED:
DRILLING METHOD: ~~Direct Push/Air Rotary~~ HAND AUGER
DRILLED BY: ~~Vortex Drilling~~ WHITE DRILLING
LOGGED BY: BH
CHECKED BY: BH
DRAWN BY:
DRAWING NO.: ~
PAGE 1 OF 1

BORING RECORD SB-#7

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
		N 32.3410953 W -104.0846980 IN SWIRLE AREA							BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
	0	GROUND SURFACE:							0
		0-2" - CALICHE PAD AREA							
		2"-2.5' ORANGE/BROWN CLAYEY SAND (SM) MOIST, FINE GRAINED, SOME ROCK IN MATRIX	SM			0			
	5	REFUSAL AT 2.5' IN ROCK							5
		TD= 2.5' BGS							
	10								10
	15								15
	20	SAMPLES 0-1' @ 1558 1-2' @ 1601 2-2.5' @ 1603							20
	25								25
	30								30
	35								35

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release

PROJECT NUMBER: NVONM2104

BORING NUMBER: SB-#7

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 1/25/22
DRILLING METHOD: ~~Direct Push/Air Rotary~~ HAND AUGER
DRILLED BY: ~~Vortex Drilling~~ WHITE DRILLING
LOGGED BY: BH
CHECKED BY: BH
DRAWING NO.: -
DRAWN BY:
PAGE 1 OF 1

BORING RECORD SB-8

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
		N 32.3416715 W -104.0853196 IN SWEEE AREA							BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
	0	GROUND SURFACE:							0
		0-1' ORANGE/BROWN SILTY, CLAYEY SAND (SM) MOIST, ROCK IN MATRIX, SOFT	SM			0			
		HIT ROCK AT 1' - MULTIPLE ATTEMPTS							
	5	TD = 1' BGS							5
	10								10
	15								15
		SAMPLES: 0-1' @ 1445							
	20								20
	25								25
	30								30
	35								35

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release

PROJECT NUMBER: NVONM2104

BORING NUMBER: SB-8

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 1/25/2022
DRILLING METHOD: ~~Direct Push/Air Rotary~~ HAND AUGER
DRILLED BY: ~~Vertex Drilling~~ WHITE DRILLING
LOGGED BY: BA
CHECKED BY: BA
DRAWN BY:
DRAWING NO.: -
PAGE 1 OF 1

BORING RECORD SB-9

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE: NUMBER	SAMPLE: OVM READING	SAMPLE: RECOVERY	SAMPLE: DEPTH	REMARKS
		N 32.3416743 W-104.086136 IN SUDUKE AREA							BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
	0	GROUND SURFACE:							0
		0-2.5' ORANGE-BROWN SILTY CLAY (CL) MOIST, STIFF, MEDIUM PLASTICITY	CL						
		REFUSAL IN ROCK AT 2.5'							
	5								5
	10								10
	15								15
	20	SAMPLES: 0-1' @ 1523 1-2' @ 1526 2-2.5' @ 1529							20
	25								25
	30								30
	35								35

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release
PROJECT NUMBER: NVONM2104
BORING NUMBER: SB-9

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 1/25/22
DRILLING METHOD: ~~Limited Push/Air Rotary~~ HAND AUGER
DRILLED BY: ~~Vertex Drilling~~ WHITE DRILLING
LOGGED BY: BK
CHECKED BY: BK
DRAWING NO.: —
DRAWN BY: —
PAGE 1 OF 1

BORING RECORD SB-10

N 32.3410245 W-104.0843275 IN SOURCE AREA

GROUND SURFACE:

0-4' BROWN CLAYEY SILTY SAND (SM) DRY, STIFF, FINE-VERY FINE GRAINED ROOTS PRESENT, ROCK IN MATRIX

SM

REFUSAL AT 4' IN ROCK

TD @ 4' BGS

SAMPLES:
0-1' @ 1612
1-2' @ 1615
2-3' @ 1619
3-4 @ 1623

SAMPLE NUMBER	OVM READING	RECOVERY	DEPTH
	0		
	0		
	0		
	0		

REMARKS: BACKGROUND OVM READING: SOIL: 0 PPM AIR: 10.5 PPM

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release
PROJECT NUMBER: NVONM2104
BORING NUMBER: SB-10

ALTAMIRA
3700 West Robinson St., Suite 200 ▪ Norman, Oklahoma 73072 ▪ 405-701-5058
www.altamira-us.com

DATE DRILLED: 11/25/22
DRILLING METHOD: ~~Direct Push/Air Rotary~~ HAND AUGER
DRILLED BY: ~~Vertex Drilling~~ WHITE DRILLING
LOGGED BY: BH
CHECKED BY: BH
DRAWING NO.: -
DRAWN BY:
PAGE 1 OF 1

BORING RECORD SB-11

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
		N 32.341158 IN SOURCE W-104.084149 AREA							BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0.1 PPM
	0	GROUND SURFACE:							0
		0-1' BROWN CLAYEY SAND (SM), MOIST FINE GRAINED							
		1-4' ORANGE/BROWN SANDY CLAY (CL) MOIST, STIFF MEDIUM PLASTICITY MINOR ROCK							
	5								5
		TD= 4' BGS							
	10								10
	15								15
		SAMPLES: 0-1 @ 1631 1-2 @ 1633 2-3 @ 1636 3-4' @ 1640							
	20								20
	25								25
	30								30
	35								35

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release
PROJECT NUMBER: NVONM2104
BORING NUMBER: SB-11

ALTAMIRA
3700 West Robinson St., Suite 200 ▪ Norman, Oklahoma 73072 ▪ 405-701-5058
www.altamira-us.com

DATE DRILLED: 1/25/2022
DRILLING METHOD: ~~Direct Push~~/~~Rotary~~ HAND AUGER
DRILLED BY: ~~Yellow Drilling~~ WHITE DRILLING
LOGGED BY: BA
CHECKED BY: BA
DRAWN BY: —
DRAWING NO.: —
PAGE 1 OF 1

BORING RECORD SB-12

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
		N 32.3419096 DELINEATION W -104.0853424							BACKGROUND OVM READING: SOIL: 6 PPM AIR: 0 PPM
	0	GROUND SURFACE:							0
		0-1' DARK BROWN SANDY SILT (ML) DRY, ABUNDANT ROCK IN MATRIX VERY HARD	ML			0			
	5	REFUSAL @ 1' BGS							5
		TD - 1' BGS							
	10								10
	15	SAMPLE 0-1' @ 859							15
	20								20
	25								25
	30								30
	35								35

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release

PROJECT NUMBER: NVONM2104

BORING NUMBER: SB-12

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 1/26/2022
DRILLING METHOD: ~~Direct Push/Air Rotary~~ HAND AUGER
DRILLED BY: ~~Vertex Drilling~~ WHITE DRILLING
LOGGED BY: BH
CHECKED BY: BH
DRAWING NO.: -
DRAWN BY: -
PAGE 1 OF 1

BORING RECORD SB-13

N 32.3418734 DEGINEATION
W - 104.0960461

GROUND SURFACE:

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
	0	BROWN SILTY SAND (SM), VERY FINE GRAINED, HARD, DRY ABUNDANT ROCK MATERIAL IN MATRIX	SM			0			BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
	5	TD- 4' BGS				0			
	10					0			
	15					0			
	20								
	25								
	30								
	35								

Samples:
0-1' @ 841
1-2' @ 844
2-3' @ 848
3-4' @ 851

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release
PROJECT NUMBER: NVONM2104
BORING NUMBER: SB-13

ALTAMIRA
3700 West Robinson St., Suite 200 ▪ Norman, Oklahoma 73072 ▪ 405-701-5058
www.altamira-us.com

DATE DRILLED: 11/26/2022
DRILLING METHOD: ~~Direct Push/Air Rotary~~ HAND AUGER
DRILLED BY: ~~Vortex Drilling~~ WHITE DRILLING
LOGGED BY: BH
CHECKED BY: BSA
DRAWING NO.: —
DRAWN BY: ✓
PAGE 1 OF 1

BORING RECORD SB-14

N 32.341580 DELINEATION
W-104.086033

GROUND SURFACE:

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
	0	0-1' BROWN SANDY SILT (ML), DRY SOFT. ROCK IN MATRIX	ML			0			BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
		ROCK REFUSAL @ 1'							
	5	TD-1' BGS							
	10								
		SB-14 @ 0-1' @ 935							
	15								
	20								
	25								
	30								
	35								

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release
PROJECT NUMBER: NVONM2104
BORING NUMBER: SB-14

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 11/20/2022
DRILLING METHOD: Direct Push/Air Rotary
DRILLED BY: Vortex Driling
LOGGED BY:
CHECKED BY: DRAWING NO.:
DRAWN BY: PAGE 1 OF 1

BORING RECORD SB-15

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
		N 32.3417465 W-104.0852083 DELINEATION							BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
	0	GROUND SURFACE:							0
		0-2' BROWN CLAYEY SILT (ML), DRY HARD, ROCK IN MATRIX	ML			0			
						0			
		REFUSAL AT 2' BGS							
		TD= 2' BGS							
	5								5
	10								10
	15	SAMPLES: 0-1' @ 914 1-2' @ 917							15
	20								20
	25								25
	30								30
	35								35

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release

PROJECT NUMBER: NVONM2104

BORING NUMBER: SB-15

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 1/26/2022
DRILLING METHOD: ~~Direct Push/Air Rotary~~ HAND AUGER
DRILLED BY: ~~Vortex Drilling~~ WHITE PANTHER
LOGGED BY: BA
CHECKED BY: BA
DRAWN BY:
DRAWING NO.:
PAGE 1 OF 1

BORING RECORD SB-16

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
		GROUND SURFACE: N 32.340617 W -104.085253 DELINEATION							BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
	0	0-1' BROWN SANDY SILT (ML) VERY FINE, DRY, ROCK WITHIN MATRIX	ML			0	[redacted]	[redacted]	0
		REFUSAL - ROCK @ 1'							
		TD = 1' BGS							
	5								5
	10								10
	15								15
		SAMPLE: 0-1' @ 927							
	20								20
	25								25
	30								30
	35								35

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release

PROJECT NUMBER: NVONM2104

BORING NUMBER: SB-16

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 1/26/2022
DRILLING METHOD: ~~Direct Push/Air Rotary~~ HAND AUGER
DRILLED BY: ~~Vortex Drilling~~ WHITE DRILLING
LOGGED BY: RA
CHECKED BY:
DRAWN BY:
DRAWING NO.:
PAGE 1 OF 1

BORING RECORD SB-17

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
		N 32.3413644 W -104.0841555 DELINEATION							BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
	0	GROUND SURFACE:							
		0-3' BROWN SANDY SILT (ML), VERY FINE, DRY, ROCK IN SOIL MATRIX	ML			0			
						0			
						0			
		REFUSAL IN ROCK AT 3' BGS							
	5	TD = 3' BGS							
	10								
	15								
	20	SAMPLES 0-1' @ 1022 1-2' @ 1025 2-3' @ 1027							
	25								
	30								
	35								

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release

PROJECT NUMBER: NVONM2104

BORING NUMBER: SB-17

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 1/26/2022
DRILLING METHOD: ~~Direct Push/Air Rotary~~ HAND AUGER
DRILLED BY: ~~Talon Drilling~~ WHITE DRILLING
LOGGED BY: BH
CHECKED BY: BH
DRAWING NO.: -
DRAWN BY:
PAGE 1 OF 1

BORING RECORD SB-18

N 32.3409225
W-104.0841277 DELINEATION

GROUND SURFACE:

DARK BROWN SANDY SILTY CLAY (CL)
HARD, DRY, ROCK IN SOIL MATRIX

REFUSAL AT 3' IN ROCK

TD= 3' BGS

SAMPLES:
0-1' @ 1104
1-2' @ 1107
2-3' @ 1111

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
	0		CL			0			BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
	5					0			
	10					0			
	15								
	20								
	25								
	30								
	35								

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release
PROJECT NUMBER: NVONM2104
BORING NUMBER: SB-18

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 11/26/2022
DRILLING METHOD: ~~Direct Push/Air Rotary~~ HAND AUGER
DRILLED BY: ~~Vortex Drilling~~ WHITE DRILLING
LOGGED BY: BM
CHECKED BY: BM
DRAWN BY:
DRAWING NO.: —
PAGE 1 OF 1

BORING RECORD SB-19

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
		N 32.3409279 DELINEATION W-104.0863023							BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
	0	GROUND SURFACE:							0
		0-1' BROWN SANDY SILT (ML) DRY, ROCK IN SOIL MATRIX	ML			0			
		REFUSAL IN ROCK @ 1' BGS							
	5	TD= 1' BGS							5
	10								10
	15								15
		SAMPLE:							
		0-1' @ 956							
	20								20
	25								25
	30								30
	35								35

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release

PROJECT NUMBER: NVONM2104

BORING NUMBER: SB-19

ALTAMIRA

3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 1/26/2022
DRILLING METHOD: ~~Direct Push/Air Rotary~~ HAND AUGER
DRILLED BY: ~~Horizon Drilling~~ WHITE DRILLING
LOGGED BY: BH
CHECKED BY: BH
DRAWING NO.: ~
DRAWN BY: ~
PAGE 1 OF 1

BORING RECORD SB-20

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
		N 32.3414383 W-104.0864337 DELINEATION							BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
	0	GROUND SURFACE:							
		0-3' BROWN/ORANGE SANDY SILT (ML) DRY, ROCK IN SOIL MATRIX	ML			0			
						0			
		REFUSAL AT 3' BGS IN ROCK				0			
	5								
		TD = 3' BGS							
	10								
	15								
	20	SAMPLES: 0-1' @ 1005 1-2' @ 1008 2-3' @ 1011							
	25								
	30								
	35								

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release

PROJECT NUMBER: NVONM2104

BORING NUMBER: SB-20

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 1/26/2022
DRILLING METHOD: ~~Direct Push/Air Rotary~~ HAND AUGER
DRILLED BY: ~~Vortex Drilling~~ WHITE DRILLING
LOGGED BY: BH
CHECKED BY: BH
DRAWN BY:
DRAWING NO.:
PAGE 1 OF 1

BORING RECORD SB-21

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
		N 32.3412313 DELINEATION W -104.0846064							BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
	0	GROUND SURFACE: 0-2' LT BROWN SANDY SILT (ML), DRY ROCK IN SOIL MATRIX	ML			0 0			0
		REFUSAL IN ROCK AT 2' TD-2' BGS							
	5								5
	10								10
	15	SAMPLES 0-1' @ 1044 1-2' @ 1048							15
	20								20
	25								25
	30								30
	35								35

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release

PROJECT NUMBER: NVONM2104

BORING NUMBER: SB-21

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 1/26/2022
DRILLING METHOD: ~~Direct Push/Air Rotary~~ HAND AUGER
DRILLED BY: ~~Vortex Drilling~~ WHITE DRILLING
LOGGED BY: BH
CHECKED BY: BH
DRAWING NO.: ~
DRAWN BY: —
PAGE 1 OF 1

BORING RECORD

N 32.34199
W-104.08566

GROUND SURFACE:

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
	0	(0-3) 100% Dry fine sand & silt Lt Tan/Light Brown				0.0		X	BACKGROUND OVM READING: SOIL: 0.0 PPM AIR: 0.0 PPM
		(3-14.5) Reddish Brown fine sand & silt with caliche				0.0		X	
						0.0		X	
	5					0.0		X	
			ML			0.0		X	
						0.0		X	
	10					0.0		X	
						2.3		X	
						2.1		X	
						2.1		X	
	15	(14.5-15) TAN fine sand & caliche Dry loose up to 0.5" gravel	SM			2.1		X	
		TD =							
	20	Sample times:							
		1-2 1029							
		2-3 1029							
		3-4 1030							
		4-5 1031							
	25	6-7 1034							
		8-9 1035							
		9-10 1036							
		10-11 1040							
		11-12 1041							
		12-13 1042							
	30	13-14 1043							
		14-15 1044							
	35								

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release
PROJECT NUMBER: NVONM2104
BORING NUMBER: SB-2

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 4/28/2022
DRILLING METHOD: Direct Push/Air Rotary
DRILLED BY: Vortex Drilling
LOGGED BY:
CHECKED BY: BH
DRAWING NO.:
DRAWN BY:
PAGE 1 OF 1

BORING RECORD

N 32.34083
W -104.08624

GROUND SURFACE:

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
	0	(0-10) Reddish Brown fine sand & silt + some limestone fragments	ML			0.0		X	BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
	5					0.0		X	
						0.0		X	
	10	(10-15) Tan fine sand & silt up to 0-5' limestone interspersed	ML			0.0		X	
						0.0		X	
	15	TD = 15' BGS				0.0		X	
	20	Sample times 3-4 0907 4-5 0909 6-7 0914 8-9 0919 10-11 0929 12-13 0931 14-15 0933							
	25								
	30								
	35								

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release
PROJECT NUMBER: NVONM2104
BORING NUMBER: SB-5

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 4/28/2022
DRILLING METHOD: Direct Push/Air Rotary
DRILLED BY: Vortex Drilling
LOGGED BY:
CHECKED BY: BH
DRAWING NO.:
DRAWN BY:
PAGE 1 OF 1

BORING RECORD

N 32.34160
W -104.08545

GROUND SURFACE:

(0-2) loose Reddish Brown fine sand & silt Dry loose Some gravel fragments

(2-6) Tan fine sand & silt loose Dry Some gravel fragments

(6-10) caliche & fine sand loose Dry light TAN

ML

SM

TD= 10' BGS

Sample times
3-4 1420
4-5 1421
6-7 1424
8-9 1426
9-10 1429

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
	0		ML			0.0		X	BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
	5					0.0		X	
			SM			0.0		X	
	10					0.0		X	
	15					0.0		X	
	20								
	25								
	30								
	35								

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release
PROJECT NUMBER: NVONM2104
BORING NUMBER: SB-6

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 4/28/2022
DRILLING METHOD: Direct Push/Air Rotary
DRILLED BY: Vortex Driling
LOGGED BY: OG
CHECKED BY: BH
DRAWING NO.:
DRAWN BY:
PAGE 1 OF 1

BORING RECORD

N 32.34133
W -104.08466

GROUND SURFACE:

(0-2') Reddish brown fine sand & silt Dry loose grass rootletts present

(2-6) Tan fine sand & silt Dry loose some gravel present

(6-10) Caliche & fine sand Dry loose light tan

TD= 10' BGS

TD = 10' BGS
3-4 15/6
4-5 15/8
6-7 15/20
8-9 15/23
9-10 15/24

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
	0								BACKGROUND OVM READING: SOIL: 10 PPM AIR: 0 PPM
	5		ML						
	10		Sm						
	15								
	20								
	25								
	30								
	35								

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release

PROJECT NUMBER: NVONM2104

BORING NUMBER: SB-7

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 4/28/2022
DRILLING METHOD: Direct Push/Air Rotary SJ-A
DRILLED BY: Vortex Driling
LOGGED BY: Orlando Gonzalez
CHECKED BY: BH
DRAWING NO.:
DRAWN BY:
PAGE 1 OF 1

BORING RECORD

N 32.34164
W -104.08542

GROUND SURFACE:

Remarks: BACKGROUND OVM READING: SOIL: 0 PPM; AIR: 0 PPM

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	OVM READING	RECOVERY	DEPTH	REMARKS
	0	(0-2) Reddish brown fine sand & silt some gravel Dry loose							0
		(2-12) TAN fine sand & silt Dry Loose some gravel				0.0		X	
						0.0		X	
						0.0		X	
	5								5
			ML			0.0		X	
						0.0		X	
	10					0.0		X	10
		(12-15) Fine sand & silt Loose Dry light reddish TAN				0.0		X	
			SM			0.0		X	
	15	TD = 15' BGS							15
	20								20
	25								25
	30								30
	35								35

Sample times
2-3 1346
3-4 1350
4-5 1353
6-7 1355
8-9 1356
10-11 1359
12-13 1400
14-15 1403

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release
PROJECT NUMBER: NVONM2104
BORING NUMBER: SB-8

DATE DRILLED: 4/28/2022
DRILLING METHOD: Direct Push/Air Rotary
DRILLED BY: Vortex Drilling
LOGGED BY: Atlanta Gonzales
CHECKED BY: BH
DRAWN BY: —
DRAWING NO.:
PAGE 1 OF 1

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

BORING RECORD

N 32.34167
W -104.08617

GROUND SURFACE:

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
	0	(0-2.5) Fine sand & Silt Intermittent pebbles moist Reddish Brown				0.0		X	BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
	5	(2.5-11) Caliche Very well cemented Fine sand & Silt Reddish Brown	ML			0.0		X	
						0.0		X	
						0.0		X	
	10	(11-15) fine sand & Silt some fractured limestone Rock very well Cemented TAN				0.0		X	
			SM			0.0		X	
	15					0.0		X	
		TD = 15' BGS							
	20	Sample time 3-4 1644 4-5 1656 6-7 1700 8-9 1707 10-11 1711 12-13 1714 14-15 1719							
	25								
	30								
	35								

3-4
4-5
6-7
8-9
10-11
12-13
14-15

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release

PROJECT NUMBER: NVONM2104

BORING NUMBER: SB-9

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 4/27/2022
DRILLING METHOD: Direct Push/Air Rotary
DRILLED BY: Vortex Driling
LOGGED BY:
CHECKED BY: BH
DRAWING NO.:
DRAWN BY:
PAGE 1 OF 1

BORING RECORD

N 32.34124
W -104.08425

GROUND SURFACE:

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
	0	(0-3) Reddish Brown fine Sand & Silt loose Dry some gravel	ML			0.0	X		BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
	5	(3-6) Reddish Brown Fine sand & silt Hard compacted easily crumbles some gravel				2.8	X		
		(6-10) TAN fine sand & silt Dry loose with Rock fragments				2.3	X		
	10	(10-15) light tan caliche & fine sand Dry loose Rock fragments	SM			0.0	X		
						0.0	X		
	15	TD= 15' BGS				0.0	X		
	20	TD=15 BGS Samples taken 4-5 1545 6-7 1548 8-9 1549 10-11 1552 12-13 1554 14-15 1558							
	25								
	30								
	35								

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release
PROJECT NUMBER: NVONM2104
BORING NUMBER: SB-11

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 4/28/22
DRILLING METHOD: Direct Push/Air Rotary SFA
DRILLED BY: Vortex Driling
LOGGED BY: Antonio Gonzalez
CHECKED BY: BH
DRAWING NO.:
DRAWN BY:
PAGE 1 OF 1

BORING RECORD

N - 32.34185
W - -104.08534

GROUND SURFACE:

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
	0	(0-3) Brown loose fine sand & silt some gravel	ML			0		X	BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
		(3-4) Tan fine sand & silt some gravel				0		X	
		(4-12 white fine sand caliche some gravel trace silt				0		X	
	5					0		X	
			SM			0		X	
	10					0		X	
		(12-14) Gravel Tan fine sand & silt - dry loose gravel Rounded ~0.25"				0		X	
			ML						
	15	(14-15) caliche & fine sand loose Dry some gravel	SM			0		X	
		TD = 15' BGS							
	20	sample times 1-2 1118 2-3 1119 3-4 1126 4-5 1121 6-7 1125 8-9 1136 10-11 1142 12-13 1147 14-15 1204							
	25								
	30								
	35								

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release
PROJECT NUMBER: NVONM2104
BORING NUMBER: SB-12

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 4/28/2022
DRILLING METHOD: Direct Push/Air Rotary
DRILLED BY: Vortex Driling
LOGGED BY: OG
CHECKED BY: BH
DRAWING NO.:
DRAWN BY:
PAGE 1 OF 1

BORING RECORD

N 32.34123
W-104.08423

GROUND SURFACE:

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
	0	(0-5') Brown Silt & fine sand Dry loose	ML			0.0		X	BACKGROUND OVM READING: SOIL: 0 PPM AIR: 60 PPM
	5	(5-7') Tan Fine sand & silt Some gravel Dry loose	SM			0.0		X	
						0.0		X	
	10	(7-10') ROCK & fine sand Dry loose Some Rock fragments & Pebbles ≈ 0.25"	SM			0.0		X	
	15								
	20	TD-10' bgs							
	25	Sample times 4-5 1631 5-6 1634 6-7 1638 7-10 1643							
	30								
	35								

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release
PROJECT NUMBER: NVONM2104
BORING NUMBER: SB-18

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED:
DRILLING METHOD: Direct Push/Air Rotary
DRILLED BY: Vortex Driling
LOGGED BY:
CHECKED BY: BH
DRAWING NO.:
DRAWN BY: —
PAGE 1 OF 1

BORING RECORD

N 32.34077
W -104.08620

GROUND SURFACE:

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	OVM READING	RECOVERY	DEPTH	REMARKS
	0	(0-3.75) fine sand & silt Dry loose TAN	ML			0.0		X	BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
						0.0		X	
						0.0		X	
		(3.75-11) caliche & fine sand white with reddish brown striations some pea size pebbles				0.0		X	
	5					0.0		X	5
						0.0		X	
			SM			0.0		X	
	10	(11-15) caliche & Tan fine sand loose dry some 0.25" caliche pebbles				0.0		X	10
						0.0		X	
						0.0		X	
	15								15
		TD= 15' BGS							
	20	Sample times							20
		0-1 0949							
		1-2 0950							
		2-3 0951							
		3-4 0952							
	25	4-5 0953							25
		6-7 0954							
		8-9 0955							
		10-11 0958							
		12-13 0959							
	30	14-15 1000							30
	35								35

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
L LABORATORY TEST LOCATION
+ PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release
PROJECT NUMBER: NVONM2104
BORING NUMBER: SB-22

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 4/28/22
DRILLING METHOD: Direct Push/Air Rotary
DRILLED BY: Vortex Drilling
LOGGED BY: [signature]
CHECKED BY: BH
DRAWN BY: —
DRAWING NO.:
PAGE 1 OF 1

BORING RECORD

N 32.34183
W - 104.08522
GROUND SURFACE:

GEOLOG. UNIT	DEPTH (FEET)	LITHOLOGIC DESCRIPTION	UNIFIED SOIL CLASSIFICATION	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE OVM READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS
	0	(0-2) Reddish Brown Fine sand & silt loose Dry Some gravel	SM			0.0		X	BACKGROUND OVM READING: SOIL: 0 PPM AIR: 0 PPM
		(2-4) TAN Fine sand & silt Dry loose some gravel				0.0		X	
	5	(4-8 caliche Fine sand & silt some gravel white dry loose				0.0		X	
		(8-10) fine sand & silt some gravel dry loose TAN				0.0		X	
	10					0.0		X	
						0.0		X	
	15	TD = 10' BGS							
		Sample times							
		0-1 1303							
	20	1-2 1304							
		2-3 1305							
		3-4 1314							
		4-5 1315							
		6-7 1319							
	25	8-9 1320							
		9-10 1323							
	30								
	35								

CME CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HOURS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/SQ. FT.)
NR: NO RECOVERY

PROJECT NAME: Novo - Culebra Bluff CTB3 - Produced Water Line Release
PROJECT NUMBER: NVONM2104
BORING NUMBER: SB-23

ALTAMIRA
3700 West Robinson St., Suite 200 • Norman, Oklahoma 73072 • 405-701-5058
www.altamira-us.com

DATE DRILLED: 4/28/22
DRILLING METHOD: Direct Push/Air Rotary
DRILLED BY: Vortex Driling
LOGGED BY:
CHECKED BY: BH
DRAWING NO.:
DRAWN BY:
PAGE 1 OF 1

APPENDIX E
Field Documentation

ALTAMIRA

Page: 1 of 1

Client: Novo

Date: 11/24/2024

Project: New Saltwater Release

By: CB

0900 CT depart for site to meet up with Brad of Novo

1000 MT Arrive @ site met up with Brad @ facility, then drove to leak area walked most of leak area then Brad departed site

1053 MT called Bryan to discuss mapping & staking out perimeter of leak foot print.

1054 MT Began staking out perimeter of foot print of leak site with 3' wood stakes with green flagging

1353 completed staking leak foot print. Began on site sketch of Release site

1440, completed site sketch. Began taking Photos of site

1508, completed photos collected GPS coordinate of Release point N 32.3411981
W -104.085505

1530 depart site for Kermit. called Bryant Brad to let him know I was off site

ALTAMIRA

Client: NOVO

Project: CULEBRA BLUFF SOIL ASSESSMENT

Page: 1 of 1

Date: 1/20/2022

By: BA

BLM NOTIFICATION 1/20/22 - EMAIL TO JIM AMOS - RESENT C-141

NMOCD NOTIFICATION 1/20/22 - 48-HOUR - 575.748.1283 (DID NOT WORK)
ARTESIA OFFICE.
EMAILED BLM HARVEY & RAYMOND MACIAS
* USE NUMBER 505.629.6116 - 1/21/2022 BA @ 1150 LAURA TULK - LEFT VM
- RESENT EMAIL PER ROB H. INSTRUCTIONS

1/20/22 ONECALL - NM811.org OR 1800.321.2537
USE WHITE DRILLING TICKET # TO CREATE ALTAMIRA
CONF #22JA200532

1/21/22 - WHITE DRILLING - RESENT SCOPE

ALTAMIRA

Client: NOVO

Project: CULEBRA BLUFF - SOIL ASSESSMENT

Page: 1 of 2

Date: 1/25/2022

By: BA

0800 - ARRIVE ONSITE, JSA
ORLANDO & BRYAN WORK TO MARK SOIL BORING LOCATIONS & REMARK RELEASE BOUNDARY AREAS W/ WOOD STAKES (GREEN FLAG)

* EXTENSIVE AMOUNT OF FIELD ACTIVITIES, PIPELINES BEING INSTALLED IN AREA & THROUGH RELEASE AREA, UTILITIES

MAY HAVE TO MODIFY SOIL BORING INSTALLATION TO HAND AUGERING DUE TO PIPELINES, OBSTICALS, TRENCHES - WILL WORK W/ DRILLER & PIPELINES TO ENSURE SAFE SAMPLING.

WEATHER: SUNNY, LT. WIND 35°-60°F

MEET W/ WHITE DRILLING COMPANY - AIR ROTARY - DIRECT PUSH

940: SET UP AT SB-1 LOCATION (DEEP BORING TO 50') - WATER ENCOUNTERED @ ~47'

* PID CALIBRATED TO 100 ppm ISOBUTYLENE
MEASURE PID READINGS FOR SAMPLES COLLECTED - ZIPLOCK BAG - EQUIL, MEASURE

SOIL SAMPLES: PACE ANALYTICAL: (BTEX 8260, TPH GRO, DRO, MRO, CHLORIDES)
SOIL LITHOLOGY & SAMPLES DOCUMENTED ON BORING LOGS

* ORLANDO MARKING PERIMETER OF RELEASE AREA W/ FULCRUM - GPS - MAPPING TO ACCURATELY OUTLINE RELEASE AREA.

1105: SET UP ON SB2 LOCATION @ POINT OF RELEASE

1210: WHITE DRILLING PLUG ~~SB-1~~ SB-1 PER PERMIT, PLUG SB-1

1315: SETUP AT SB-3 LOCATION - IN SOURCE AREA - USE HAND AUGER TO ADVANCE BORING RIG NOT ACCESSIBLE / NOT SAFE - DECON HAND AUGER - REFUSAL @ 4' BGS

1345: SECOND CREW SET UP AT SB-4 LOCATION - IN SOURCE AREA - HAND AUGER, DECON REFUSAL IN ROCK @ 2' BGS

1415 SET UP AT SB-6 LOCATION - IN SOURCE AREA - HAND AUGER - DECON - REFUSAL @ 2' ROCK

1435 SET UP AT SB-8 LOCATION - IN SOURCE AREA - HAND AUGER - DECON
REFUSAL IN ROCK AT 1' BGS

1448 SET UP AT SB-5 LOCATION - IN SOURCE AREA - HAND AUGER - DECON
REFUSAL IN ROCK AT 1.5' BGS

1518 SET UP AT SB-9 LOCATION - IN SOURCE AREA - HAND AUGER - DECON
REFUSAL IN ROCK AT 2.5' BGS

ALTAMIRA

Client: NOVO

Project: CULEBRA BLUFF - SOIL ASSESTMENT

Date: 1/25/2022

By: BH

1551: SET UP AT SB-7 LOCATION IN SOURCE AREA - HAND AUGER - DECON
REFUSAL AT 2.5' BGS - ROCK

1606: SET UP AT SB-10 LOCATION IN SOURCE AREA - HAND AUGER - DECON
REFUSAL AT 4' BGS - ROCK

1627: SETUP AT SB-11 LOCATION IN SOURCE AREA - HAND AUGER - DECON

SAMPLES MAINTAINED ON ICE IN COOLER - NO SHIPPING TODAY

ALTAMIRA

Client: NOVO

Project: CULEBRA BLUFF - SOIL ASSESSMENT

Date: 1/26/2022

By: BH

820: ARRIVE ONSITE: JSA TAILGATE MEETING
WEATHER: CLOUDY 20°F, LT WIND
GOAL: INSTALL SOIL BORINGS FOR LATERAL DELINEATION
WILL HAVE TO HAND AUGER BORINGS DUE TO EXTENSIVE UNDERGROUND, ABOVEGROUND UTILITIES/LINES - TRENCHES.

: WILL DECON HAND AUGER PRIOR TO USE AT EACH LOCATION
: CALIBRATE PID TO 100 ppm ISOBUTYLENE STANDARD
: MARK BORING LOCATIONS W/ ORANGE PAN FLAGS

835: SET UP ON SB-13 USE OPEN EXCAVATION WALL
852: SETUP ON SB-12 HAND AUGER - REFUSAL AT 1' BGS - HARD ROCK AREA
SETUP ON SB-15 HAND AUGER - REFUSAL AT 2' BGS - HARD ROCK AREA
SETUPON SB-16 HAND AUGER - REFUSAL AT 1' BGS - HARD ROCK AREA
SETUP ON SB-14

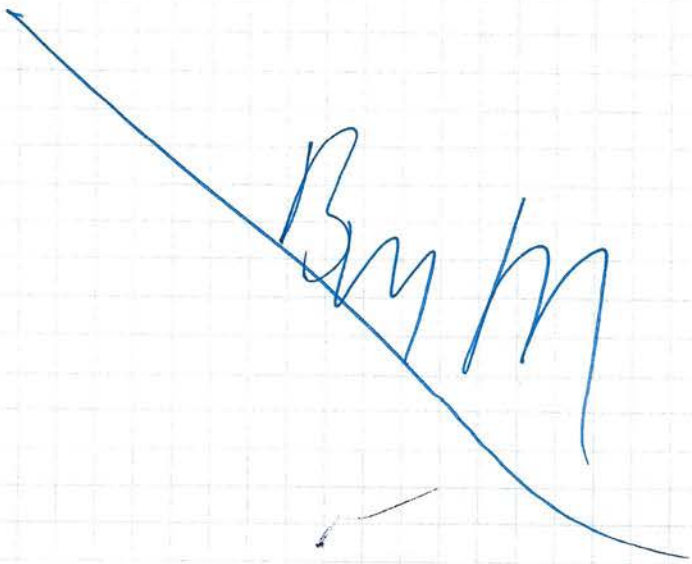
946 SET UP ON SB-19 LOCATION - HAND AUGER
SET UP ON SB-20 LOCATION - HAND AUGER - REFUSAL @ 3'

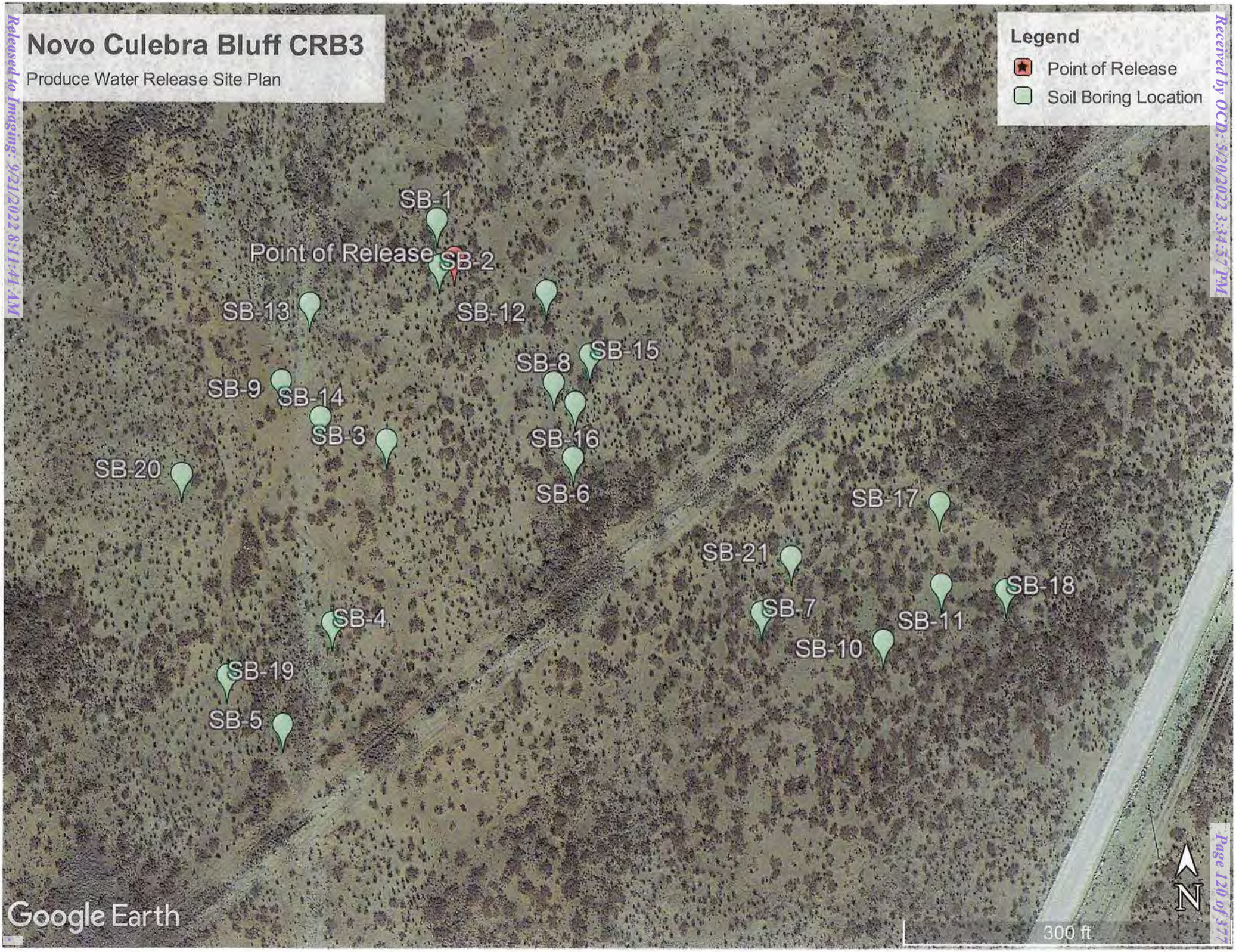
1020 SET UP ON SB-17 LOCATION - HAND AUGER
SET UP ON SB-21 LOCATION - HAND AUGER
1057 SET UP ON SB-18 LOCATION - HAND AUGER

1135 ONSITE TO ODESSA TO SHIP SAMPLES

SAMPLES IN COOLER W/ICE - COC INCL

BORING & SAMPLE DETAILS ON SOIL BORING LOGS





Company Name/Address:
Altamira - Angleton, TX

4001 Technology Drive, Ste 120
Angleton, TX 77515

Billing Information:
Bryan Haney
4001 Technology Drive, Ste 120
Angleton, TX 77515

Pres Chk

Report to:
Bryan Haney

Email To: **bryan.haney@altamira-us.com;Orlando.Gonzalez@Altamira-us.com**

Project Description: CULEBRA BLUFF
Novo Ovation Pad O Release

City/State Collected: LOVING, NM

Please Circle: PT (MT) CT ET

Phone: **361-658-3126**

Client Project # **NVONM2103 PHASE 001**

Lab Project # **ALTAMIRAATX-NOVO**

Collected by (print): BH/OG

Site/Facility ID # CULEBRA BLUFF

P.O. # —

Collected by (signature): BM IM

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
X Three Day

Date Results Needed

Quote # —

Analysis / Container / Preservative

Chain of Custody Page 1 of 2

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG #

Table #

Acctnum: **ALTAMIRAATX**
Template: **T201884**
Prelogin: **P900101**
PM: **134 - Mark W. Beasley**
PB:
Shipped Via: **FedEx Ground**

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4ozClr-NoPres	DRONM 4ozClr-NoPres	GRO 40mlAmb/MeOH10ml/Syr	V8260BTEX 40mlAmb/MeOH10ml/Syr	Remarks	Sample # (lab only)
SB-1 (0-1') ✓	G	SS	0-1'	11/25/22	957	2	X	X	X	X		
SB-1 (2-3') ✓	G	SS	2-3'	11/25/22	1004	2	X	X	X	X		
SB-1 (3-4')	G	SS	3-4'	11/25/22	1006	2						
SB-1 (5-6')	G	SS	5-6'	11/25/22	1003	2						
SB1 (9-10')	G	SS	9-10'	11/25/22	1015	2						
		SS										
		SS										
		SS										
		SS										

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: DEEPER SAMPLES ON HOLD PENDING

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
BM IM	11/26/2022	1630			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: / Condition: NCF / OK

Company Name/Address:
Altamira - Angleton, TX

4001 Technology Drive, Ste 120
Angleton, TX 77515

Billing Information:
Bryan Haney
4001 Technology Drive, Ste 120
Angleton, TX 77515

Pres Chk

Report to:
Bryan Haney

Email To: **bryan.haney@altamira-us.com;Orlando.Gonzalez@Altamira-us.com**

Project Description:
Novo Ovation Pad O Release CULEBRA BLUFF

City/State Collected: LOVING, NM

Please Circle: PT MT CT ET

Phone: **361-658-3126**

Client Project #
NVONM2104 PHASE 001

Lab Project #
ALTAMIRAATX-NOVO

Collected by (print):
BH / OG

Site/Facility ID #
CULEBRA BLUFF

P.O. #
—

Collected by (signature):
BM MM

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
X Three Day

Date Results Needed

Quote # —

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4ozClr-NoPres	DRONM 4ozClr-NoPres	GRO 40mlAmb/MeOH10ml/Syr	V8260BTEX 40mlAmb/MeOH10ml/Syr	Remarks	Sample # (lab only)
SB-2 (0-1')	G	SS	0-1'	11/25/22	1111	2	X	X	X	X		
SB-2 (2-3')	G	SS	2-3'	11/25/22	1119	2	X	X	X	X		
SB-2 (3-4')	G	SS	3-4'	11/25/22	1121	2						
SB-2 (4-5')	G	SS	4-5'	11/25/22	1123	2						
SB-2 (6-7')	G	SS	6-7'	11/25/22	1129	2						
SB-2 (8-9')	G	SS	8-9'	11/25/22	1133	2						
SB-2 (9-10')	G	SS	9-10'	11/25/22	1135	2						
SB-2 (14-15')	G	SS	14-15'	11/25/22	1140	2						
		SS										
		SS										

Chain of Custody Page 2 of 5

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG #

Table #

Acctnum: **ALTAMIRAATX**
Template: **T201884**
Prelogin: **P900101**
PM: **134 - Mark W. Beasley**
PB: Undesignated
Shipped Via: **FedEX Ground**

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: DEEPER SAMPLES PENDING ANALYSIS

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
BM MM	11/26/2022	1630			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
			JAD		
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: / Condition: NCF / OK

Company Name/Address:
Altamira - Angleton, TX

4001 Technology Drive, Ste 120
Angleton, TX 77515

Billing Information:
Bryan Haney
4001 Technology Drive, Ste 120
Angleton, TX 77515

Pres Chk

Report to:
Bryan Haney

Email To: **bryan.haney@altamira-us.com;Orlando.Gonzalez@Altamira-us.com**

Project Description:
Novo Ovation Pad O Release CULEBRA BLUFF

City/State Collected: LOVING, NM

Please Circle: PT (MT) CT ET

Phone: **361-658-3126**

Client Project #
NVONM2104 PHASE 001

Lab Project #
ALTAMIRAATX-NOVO

Collected by (print):
OG/BH

Site/Facility ID #
CULEBRA BLUFF

P.O. #
—

Collected by (signature):
BM MM

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
X Three Day

Date Results Needed

Quote #

Analysis / Container / Preservative

Chain of Custody Page 3 of 5

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG #

Table #

Acctnum: **ALTAMIRAATX**
Template: **T201884**
Prelogin: **P900101**
PM: **134 - Mark W. Beasley**
PB: 12/22 tOd
Shipped Via: **FedEX Ground**

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4ozClr-NoPres	DRONM 4ozClr-NoPres	GRO 40mlAmb/MeOH10ml/Syr	V8260BTEX 40mlAmb/MeOH10ml/Syr	Remarks	Sample # (lab only)
SB-3 (0-1')	G	SS	0-1'	1/25/22	1330	2	X	X	X	X		
SB-3 (1-2')	G	SS	1-2'	1/25/22	1333	2	X	X	X	X		
SB-3 (2-3')	G	SS	2-3'	1/25/22	1337	2						
SB-3 (3-4')	G	SS	3-4'	1/25/22	1342	2						
SB-4 (0-1')	G	SS	0-1'	1/25/22	1410	2	X	X	X	X		
SB-4 (1-2')	G	SS	1-2'	1/25/22	1415	2	X	X	X	X		
SB-6 (0-1')	G	SS	0-1'	1/25/22	1426	2	X	X	X	X		
SB-6 (1-2')	G	SS	1-2'	1/25/22	1432	2	X	X	X	X		
SB-8 (0-1')	G	SS	0-1'	1/25/22	1445	2	X	X	X	X		
		SS										

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: DEEPER SAMPLES ON HOLD PENDING

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
BM MM	1/26/2022	1630			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: / Condition: NCF / OK

Company Name/Address:
Altamira - Angleton, TX

4001 Technology Drive, Ste 120
Angleton, TX 77515

Billing Information:
Bryan Haney
4001 Technology Drive, Ste 120
Angleton, TX 77515

Pres Chk

Report to:
Bryan Haney

Email To: **bryan.haney@altamira-us.com;Orlando.Gonzalez@Altamira-us.com**

Project Description:
Novo Ovation Pad O Release CULEBRA BLUFF

City/State Collected: LOVING, NM

Please Circle: PT MT CT ET

Phone: **361-658-3126**

Client Project #
NVONM2104 PHASE 001

Lab Project #
ALTAMIRAATX-NOVO

Collected by (print):
OG/BH

Site/Facility ID #
CULEBRA BLUFF

P.O. #
—

Collected by (signature):
BM BM

Immediately Packed on Ice N___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
X Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page 4 of 5

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG #

Table #

Acctnum: **ALTAMIRAATX**
Template: **T201884**
Prelogin: **P900101**
PM: **134 - Mark W. Beasley**
PB:
Shipped Via: **FedEX Ground**

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4ozClr-NoPres	DRONM 4ozClr-NoPres	GRO 40mlAmb/MeOH10ml/Syr	V8260BTEX 40mlAmb/MeOH10ml/Syr	Remarks	Sample # (lab only)
SB-5 (0-1')	G	SS	0-1'	1/25/22	1457	2	X	X	X	X		
SB-5 (1-1.5')	G	SS	1-1.5'	1/25/22	1505	2	X	X	X	X		
SB-9 (0-1')	G	SS	0-1'	1/25/22	1523	2	X	X	X	X		
SB-9 (1-2')	G	SS	1-2'	1/25/22	1526	2	X	X	X	X		
SB-9 (2-2.5')	G	SS	2-2.5'	1/25/22	1529	2						
SB-7 (0-1')	G	SS	0-1'	1/25/22	1558	2	X	X	X	X		
SB-7 (1-2')	G	SS	1-2'	1/25/22	1601	2	X	X	X	X		
SB-7 (2-2.5')	G	SS	2-2.5'	1/25/22	1603	2						
		SS										
		SS										

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: DEEPER SAMPLES ON HOLD PENDING

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx ✓ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
BM BM	1/26/2022	1630		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Company Name/Address:
Altamira - Angleton, TX

4001 Technology Drive, Ste 120
Angleton, TX 77515

Billing Information:
Bryan Haney
4001 Technology Drive, Ste 120
Angleton, TX 77515

Pres Chk

Report to:
Bryan Haney

Email To: **bryan.haney@altamira-us.com;Orlando.Gonzalez@Altamira-us.com**

Project Description:
Novo Ovation Pad O Release CULEBRA BLUFF

City/State Collected: LOVING NM

Please Circle: PT (MT) CT ET

Phone: **361-658-3126**

Client Project #
NVONM2104 PHASE 001

Lab Project #
ALTAMIRAATX-NOVO

Collected by (print):
OG/BH

Site/Facility ID #
CULEBRA BLUFF

P.O. #
—

Collected by (signature):
BM MM ✓

Immediately Packed on Ice N ___ Y ___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
X Three Day

Date Results Needed

Quote #
—

Analysis / Container / Preservative

Chain of Custody Page 5 of 5

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG #

Table #

Acctnum: **ALTAMIRAATX**
Template:**T201884**
Prelogin: **P900101**
PM: **134 - Mark W. Beasley**
PB: 1/30/22-tcc
Shipped Via: **FedEX Ground**

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4ozClr-NoPres	DRONM 4ozClr-NoPres	GRO 40mlAmb/MeOH10ml/Syr	V8260BTEX 40mlAmb/MeOH10ml/Syr	Remarks	Sample # (lab only)
SB-10 (0-1')	G	SS	0-1'	1/25/22	1612	2	X	X	X	X		
SB-10 (1-2')	G	SS	1-2'	1/25/22	1615	2	X	X	X	X		
SB-10 (2-3')	G	SS	2-3'	1/25/22	1619	2						
SB-10 (3-4')	G	SS	3-4'	1/25/22	1623	2						
SB-11 (0-1')	G	SS	0-1'	1/25/22	1631	2	X	X	X	X		
SB-11 (1-2')	G	SS	1-2'	1/25/22	1633	2	X	X	X	X		
SB-11 (2-3')	G	SS	2-3'	1/25/22	1636	2						
SB-11 (3-4')	G	SS	3-4'	1/25/22	1640	2						
		SS										
		SS										

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: DEEPER SAMPLES ON HOLD PENDING

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
BM MM	1/26/2022	1630			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: / Condition: NCF / OK

Company Name/Address:
Altamira - Angleton, TX

4001 Technology Drive, Ste 120
Angleton, TX 77515

Billing Information:
Bryan Haney
4001 Technology Drive, Ste 120
Angleton, TX 77515

Pres Chk

Report to:
Bryan Haney

Email To: **bryan.haney@altamira-us.com;Orlando.Gonzalez@Altamira-us.com**

Project Description:
Novo Ovation Pad O Release CULEBRA BLUFF

City/State Collected: LOVING NM

Please Circle: PT MT CT ET

Phone: **361-658-3126**

Client Project #
NVONM2104 PHASE 001

Lab Project #
ALTAMIRAATX-NOVO

Collected by (print):
BH DG

Site/Facility ID #
CULEBRA BLUFF

P.O. #
—

Collected by (signature):
BMM

Immediately
Packed on Ice N___ Y___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote # —

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page 1 of 3

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG #

Table #

Acctnum: **ALTAMIRAATX**
Template:**T201884**
Prelogin: **P900101**
PM: **134 - Mark W. Beasley**
PB: 11/22 tc

Shipped Via: **FedEX Ground**

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4ozClr-NoPres	DRONM 4ozClr-NoPres	GRO 40mlAmb/MeOH10ml/Syr	V8260BTEX 40mlAmb/MeOH10ml/Syr							Remarks	Sample # (lab only)
SB-13 (0-1')	G	SS	0-1'	11/26/22	941	2	X	X	X	X								
SB-13 (1-2')	G	SS	1-2'	11/26/22	944	2	X	X	X	X								
SB-13 (2-3')	G	SS	2-3'	11/26/22	949	2												
SB-13 (3-4')	G	SS	3-4'	11/26/22	951	2												
SB-12 (0-1')	G	SS	0-1'	11/26/22	859	2	X	X	X	X								
SB-15 (0-1')	G	SS	0-1'	11/26/22	914	2	X	X	X	X								
SB-15 (1-2')	G	SS	1-2'	11/26/22	917	2	X	X	X	X								
SB-16 (0-1')	G	SS	0-1'	11/26/22	927	2	X	X	X	X								
SB-14 (0-1')	G	SS	0-1'	11/26/22	935	2	X	X	X	X								
SB-19 (0-1')	G	SS	0-1'	11/26/22	956	2	X	X	X	X								

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: DISPOSAL SAMPLES ON HOLD PENDING

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
BMM	1/26/2022	1630			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: / Condition: NCF / OK

Company Name/Address:
Altamira - Angleton, TX
4001 Technology Drive, Ste 120
Angleton, TX 77515

Billing Information:
Bryan Haney
4001 Technology Drive, Ste 120
Angleton, TX 77515

Pres Chk

Report to: **Bryan Haney**

Email To: **bryan.haney@altamira-us.com;Orlando.Gonzalez@Altamira-us.com**

Project Description: **Novo Ovation Pad 0 Release** CULEBRA BLUFF

City/State Collected: LOVING, NM

Please Circle: PT (MT) CT ET

Phone: **361-658-3126**

Client Project # **NVONM2104 PHASE 001**

Lab Project # **ALTAMIRAATX-NOVO**

Collected by (print): OS/BH

Site/Facility ID # CULEBRA BLUFF

P.O. # —

Collected by (signature): BMM

Immediately Packed on Ice N___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
X Three Day

Quote # —

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page 2 of 3

Pace PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG #

Table #

Acctnum: **ALTAMIRAATX**
Template: **T201884**
Prelogin: **P900101**
PM: **134 - Mark W. Beasley**
PB: 1/20/22 tdf
Shipped Via: **FedEX Ground**

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4ozClr-NoPres	DRONM 4ozClr-NoPres	GRO 40mlAmb/MeOH10ml/Syr	V8260BTEX 40mlAmb/MeOH10ml/Syr							Remarks	Sample # (lab only)
SB-20 (0-1')	G	SS	0-1'	1/26/22	1105	2	X	X	X	X								
SB-20 (1-2')	G	SS	1-2'	1/26/22	1108	2	X	X	X	X								
SB-20 (2-3')	G	SS	2-3'	1/26/22	1011	2												
SB-17 (0-1')	G	SS	0-1'	1/26/22	1022	2	X	X	X	X								
SB-17 (1-2')	G	SS	1-2'	1/26/22	1025	2	X	X	X	X								
SB-17 (2-3')	G	SS	2-3'	1/26/22	1027	2												
SB-21 (0-1')	G	SS	0-1'	1/26/22	1044	2	X	X	X	X								
SB-21 (1-2')	G	SS	1-2'	1/26/22	1048	2	X	X	X	X								
~~SB-18~~		SS																
~~SB~~		SS																

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: DEEPER SAMPLES ON HOLD PENDING

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
BMM	1/26/2022	1630			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: / Condition: NCF / OK

Company Name/Address:
Altamira - Angleton, TX

4001 Technology Drive, Ste 120
Angleton, TX 77515

Billing Information:
Bryan Haney
4001 Technology Drive, Ste 120
Angleton, TX 77515

Pres Chk

Report to:
Bryan Haney

Email To: **bryan.haney@altamira-us.com;Orlando.Gonzalez@Altamira-us.com**

Project Description:
Novo Ovation Pad O Release - CULEBRA BLUFF

City/State Collected: LOVING, NM

Please Circle: PT (MT) CT ET

Phone: **361-658-3126**

Client Project #
NVONM2104PHASE 001

Lab Project #
ALTAMIRAATX-NOVO

Collected by (print):
OG / BH

Site/Facility ID #
CULEBRA BLUFF

P.O. #
—

Collected by (signature):
BM MM

Immediately
Packed on Ice N ___ Y ___

Rush? (Lab MUST be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
X Three Day

Quote #
—

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page 3 of 3

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG #

Table #

Acctnum: **ALTAMIRAATX**
Template: **T201884**
Prelogin: **P900101**
PM: **134 - Mark W. Beasley**
PB: 1/26/22-ECD
Shipped Via: **FedEX Ground**

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4ozClr-NoPres	DRONM 4ozClr-NoPres	GRO 40mlAmb/MeOH10ml/Syr	V8260BTEX 40mlAmb/MeOH10ml/Syr						Remarks	Sample # (lab only)
SB-18 (0-1')	G	SS	0-1'	1/26/22	1104	2	X	X	X	X							
SB-18 (1-2')	G	SS	1-2'	1/26/22	1107	2	X	X	X	X							
SB-18 (2-3')	G	SS	2-3'	1/26/22	1111	2											
		SS															
		SS															
		SS															
		SS															
		SS															
		SS															
		SS															

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: DEEPER SAMPLES ON HOLD PENDING

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx ✓ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
BM MM	1/26/2022	1630			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: / Condition: NCF / OK

Soil Assessment Scope of Work Detail
Culebra Bluff CTB3 Produced Water Release

SOIL ASSESSMENT
4/27 - 4/28/2022

Prior to Field Work

- 48- hour Notification to OCD and BLM
- Conduct One Call – 4/19/2022
- Order Lab – Cardinal Labs – 4/19/2022
- Order PID from Pine – 4/19/2022
- Driller planning and meeting – 4/19/2022

In Field

- Mark boring locations
- Identify utilities and piping with pipeline companies

Soil Boring Installation

Install soil borings as shown below. Each hole will be cleared for utilities using an airknife. Advance borehole and collect soil samples continuously to the total depth of the soil boring (est 10-15 feet).

- SB-2 – collect at 1-2 ,2-3, 3-4, 4-5 6-7, 8-9, 9-10, 10-11, 11-12, 12-13, 13-14, 14-15 – Chlorides only
- SB-5 – collect at 3-4, 4-5, 6-7, 8-9, 10-11, 12-13, 14-15 – Chlorides only
- SB-6 - collect at 3-4, 4-5, 6-7, 8-9, 9-10 – Chlorides only 10'
- SB-7 - collect at 3-4, 4-5, 6-7, 8-9, 9-10 – Chlorides only 10'
- SB-8 – collect at 2-3, 3-4, 4-5, 6-7, 8-9, 10-11, 12-13, 14-15 – Chlorides only
- SB-9 – collect at 3-4, 4-5, 6-7, 8-9, 10-11, 12-13, 14-15 – Chlorides only
- SB-11 – collect at 4-5, 6-7, 8-9, 10-11, 12-13, 14-15 – Chlorides only
- SB-12 – collect at 1-2, 2-3, 3-4, 4-5, 6-7, 8-9, 10-11, 12-13, 14-15 – Chlorides only
- SB-18 – collect at 4-5, 5-6, 6-7, 9-10 – Chlorides only 10'
- SB-22 SB-24 Stepout South of SB-5 – collect at 0-1, 1-2, 2-3, 3-4, 4-5, 6-7, 8-9, 10-11, 12-13, 14-15 – Chlorides only
- SB-23 Stepout East of SB-12 – collect at 0-1, 1-2, 2-3, 3-4, 4-5, 6-7, 8-9, 9-10 – Chlorides only 10'

- Analysis of soil samples will be conducted vertically until constituent concentrations are below action levels – remaining soil samples will be placed on hold
- Analysis for Chlorides (300.0)
- Maintain soil samples in cooler with ice and chain of custody document
- Take photos of soil boring locations
- Document lat/long at each boring location
- Complete a soil boring log for each location that includes lithology, observations, PID readings, sample depths

Field Map

- Prepare a detailed field figure showing location of utilities, above ground piping/features
- Include soil boring locations
- Include any surface water features, wells, springs, creeks, oil and gas wells

Assessment/Cleanup Levels

Refer to Table I in Chapter 19.15.29 and guidance from OCD

0-51 feet
Chlorides – 600 mg/kg
TPH – 100 mg/kg

Soil Assessment Scope of Work Detail
Culebra Bluff CTB3 Produced Water Release

BTEX – 50 mg/kg
Benzene – 10 mg/kg

Equipment

- Sample coolers/COCs/fedex
- Table
- Canopy
- PID
- Boring Logs
- Wooden stakes to mark locations
- Sharpe
- PPE
- Gloves
- Zip lock bags
- Hammer

ALTAMIRA

Client: NOVO

Project: CULEBRA BLUFF CTB3

Page: 1 of 1

Date: 4/14/22

By: BH

SB-2 → 9-10', 10-11', 11-12', 12-13, 13-14, 14-15' CL

SB-5 START AT 3' TO 15 CL

SB-6 " 3' TO 10' CL

SB-7 " 3' TO 10' CL

SB-8 " 2' TO 15' CL

SB-9 3 TO 15' CL

SB-11 4 TO 15' CL

SB-12 1 - 15' CL

NEW STEP OUT 0 - 10' CL

NEW STEP OUT @12 0 - 10' CL

SB-18 4-5, 6-7, 9-10 CL

8 - BORINGS TO ~ 15'

- NOTIFY BLM
OCD

✓ - ONE CALL 800 · 321 · 2537 ON 4/19/2022
USE PREVIOUS TICKET # 22 JA200532
START 27TH APRIL
NEW TICKET # 22AP190684

BH

✓ - DRILLER: USE ENVIROTECH BH 1 DAY EST.

✓ - LAB - CARDINAL IN HOBBS

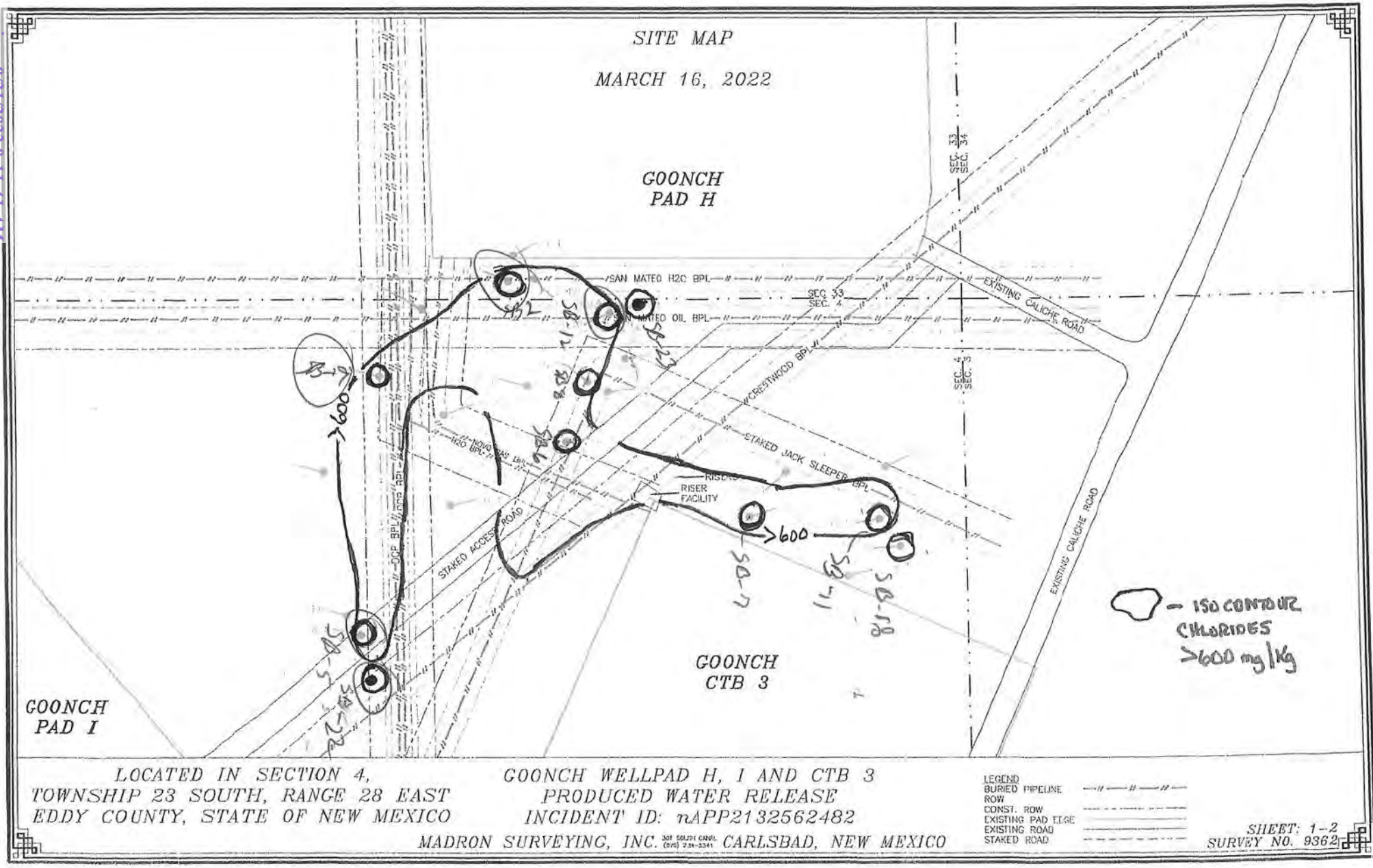
 4/27/2022 15

Novo Culebra Bluff

15 25 Arrive @ Location tailgate safety meeting
off load beeping to set up @ SB-9
16 00 start SB-9 Boring will start with Spoons to see How deep we can go before switching to other methods
16 11 made it down to 2.5' BGS with direct push/Hammer ~~Switched~~ Switched to Auger
16 16 switched to Air Rotary to Advance boring
16 37 switch to Air Rotary Complete will Begin drilling
17 24 completed SB-9 pulling rods to plug borehole
Samples on Ice
17 47 Drive off site

Culebra Bluff
4/28/22

0800 Arrive @ site tailgate safety meeting conducted
0830 prepare to offload geoprobe to begin hand augering to SB-5 & SB-8A locations
0901 set up @ SB-5 to advance to 15' BGS
0920 switched to Direct push for last 5' of boring
0937 completed SB-5 now set up @ SB-22 will use direct Push to start.
1008 done @ SB-22 moving to SB-2 location
1020 @ SB-2 to set to begin Boring
1025 Start SB-2 Boring will do direct push to 5'
1105 done @ SB-2 moving to SB-12
1117 start SB-12 Boring
1214 completed SB-12 taking lunch Break then set up @ SB-23
1246 lunch Break done move Geoprobe SB-23
1300 start SB-23 Boring to 10' BGS
1339 Start @ SB-8 Boring to 15' BGS
1416 set up @ SB-6 Boring to 10' BGS
1440 @ SB-7 will take short 15 min Break
1455 Break done Start @ SB-7 boring to 10' BGS
1530 completed SB-7 moving to SB-11
1600 SB-11 to 15' BGS samples collected fillings Augers to plug bore Hole
1611 Geoprobe set up @ SB-18 to start Boring to 10' BGS
1614 start SB-18 Boring using solid Flight Auger
1644 completed SB-18 to 10' BGS Borehole plugged with bentonite chips + Hydrated. All Boreholes @ this site plugged as described above.
1654 drillers loading up equipment & tools then move Geoprobe to Road to load on solid level ground
1738 drive off site end day



LOCATED IN SECTION 4,
TOWNSHIP 23 SOUTH, RANGE 28 EAST
EDDY COUNTY, STATE OF NEW MEXICO

GOONCH WELLPAD H, I AND CTB 3
PRODUCED WATER RELEASE
INCIDENT ID: nAPP2132562482

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

LEGEND
BURIED PIPELINE
ROW
CONST. ROW
EXISTING PAD EDGE
EXISTING ROAD
STAKED ROAD

AERIAL DATE 12/2019

SHEET: 2-2
SURVEY NO. 9362

ALTAMIRA

Page: _____ of _____

Client: _____ Date: 4/21/22

Project: Culebra Bluff By: CS

	North	West
JB-9	32.34167	-104.08617
JB-5	32.34083	-104.08624
JB-22	32.34077	-104.08620
JB-2	32.34199	-104.08566
SB-12	32.34185	-104.08534
SB-23	32.34183	-104.08522
SB-8	32.34164	-104.08542
SB-6	32.34160	-104.08545
SB-7	32.34133	-104.08466
SB-11	32.34124	-104 08425
SB-18	32.34123	-104 08423

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

		BILL TO	
Company Name:	Altamira-US	P.O. #:	
Project Manager:	Bryon Huney	Company:	Novo oil & GAS
Address:	14229 Punta Bonaire	Attn:	
City: Corpus Christi	State: TX Zip: 78918	Address:	
Phone #: 361 658 3126	Fax #: —	City:	
Project #: NOVO NM 2102	Project Owner: Bryan Huney	State: Zip:	
Project Name:	Novo Culebra Bluff	Phone #:	
Project Location:	Loving New Mexico	Fax #:	
Sampler Name:	[illegible] Gonzales		

ANALYSIS REQUEST: Chlorides (300 equivalent)

Lab I.D. (FOR LAB USE ONLY)	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME	Chlorides (300 equivalent)
	SB-7 (3-4)	G	1			X					X		4/27/22	1644	X
	SB-7 (4-5)	G	1			X					X		4/27/22	1656	X
	SB-7 (6-7)	G	1			X					X		4/27/22	1700	X
	SB-7 (8-9)	G	1			X					X		4/27/22	1707	X
	SB-7 (10-11)	G	1			X					X		4/27/22	1711	X
	SB-7 (12-13)	G	1			X					X		4/27/22	1714	X
	SB-7 (14-15)	G	1			X					X		4/27/22	1719	X
	SB- ( )	G	1			X					X				X
	SB- ( )	G	1			X					X				X
	SB- ( )	G	1			X					X				X

Relinquished By: [signature]	Date: 4-29-22 Time: 1035	Received By: Tamara Oldaker	Verbal Result: ☐ Yes ☐ No Add'l Phone #: All Results are emailed. Please provide Email address:
Relinquished By:	Date: Time:	Received By:	REMARKS: 3day - Run #1 Sample on each group and hold Rest.
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C 1.2 Corrected Temp. °C 0.7	Sample Condition Cool Intact ☑ Yes ☑ Yes ☐ No ☐ No	CHECKED BY: (Initials) [initials]
Turnaround Time: Standard ☐ Rush ☑	Thermometer ID #113 Correction Factor -0.5°C	Bacteria (only) Sample Condition Cool Intact ☐ Yes ☐ Yes ☐ No ☐ No	Observed Temp. °C Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Alamora - (L)
Project Manager:	Bryan Hunay
Address:	14229 Hunter Bonair
City:	Corpus Christi State: TX Zip: 78418
Phone #:	3616583126 Fax #: —
Project #:	NOVO NM2103 Project Owner: Bryan Hunay
Project Name:	Novo Culebra Bluff
Project Location:	Loving New Mexico
Sampler Name:	Michael Gonzalez

BILL TO

P.O. #:	
Company:	Novo oil & GAS
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

Chlorides (300 or equivalent)

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	Chlorides
	SB-5 (2-4)	G	1			X					X		4/28/22	0707	X
	SB-5 (4-5)	G	1			X					X		4/28/22	0909	X
	SB-5 (6-7)	G	1			X					X		4/28/22	0914	X
	SB-5 (8-9)	G	1			X					X		4/28/22	0919	X
	SB-5 (10-11)	G	1			X					X		4/28/22	0929	X
	SB-5 (12-13)	G	1			X					X		4/28/22	0931	X
	SB-5 (14-15)	G	1			X					X		4/28/22	0933	X
	SB- ( )	G	1			X					X				X
	SB- ( )	G	1			X					X				X
	SB- ( )	G	1			X					X				X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 4-29-22	Received By: Tamara Oldaker	Verbal Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 1035		All Results are emailed. Please provide Email address:
Relinquished By:	Date:	Received By:	REMARKS: 3day
	Time:		

Delivered By: (Circle One)	Observed Temp. °C 1.2	Sample Condition Cool / Intact	CHECKED BY: (Initials)	Turnaround Time: Standard ☐ Rush ☐
Sampler - UPS - Bus - Other:	Corrected Temp. °C 0.7	☑ Yes ☑ Yes ☐ No ☐ No	T.O.	Thermometer ID #113 Correction Factor -0.5°C

Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No; Intact ☐ Yes ☐ No; Observed Temp. °C; Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Altamira-US		**BILL TO**	
Project Manager: Bryon Huney		P.O. #:	
Address: 14225 Punta Bonaire		Company: Novo Oil & Gas	
City: Corpus Christi	State: TX Zip: 78418	Attn:	
Phone #: 361/658 3126	Fax #: —	Address:	
Project #: NOVO NM 2103	Project Owner: Bryan Huney	City:	
Project Name: Novo Culebra Bluff		State:	Zip:
Project Location: Loving New Mexico		Phone #:	
Sampler Name: [signature] Gonzalez		Fax #:	

ANALYSIS REQUEST: Chlorides (300 equivalent)

Lab I.D. (FOR LAB USE ONLY)	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME	Chlorides (300 equivalent)
	SB-22 (0-1)	G	1			X					X		4/28/22	0949	X
	SB-22 (1-2)	G	1			X					X		4/28/22	0950	X
	SB-22 (2-3)	G	1			X					X		4/28/22	0951	X
	SB-22 (3-4)	G	1			X					X		4/28/22	0952	X
	SB-22 (4-5)	G	1			X					X		4/28/22	0953	X
	SB-22 (6-7)	G	1			X					X		4/28/22	0754	X
	SB-22 (8-9)	G	1			X					X		4/28/22	0955	X
	SB-22 (10-11)	G	1			X					X		4/28/22	0958	X
	SB-22 (12-13)	G	1			X					X		4/28/22	0959	X
	SB-22 (14-15)	G	1			X					X		4/28/22	1000	X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: [signature]	Date: 4-29-22 Time: 1035	Received By: Tamara [signature]	Verbal Result: ☐ Yes ☐ No Add'l Phone #: All Results are emailed. Please provide Email address:
Relinquished By:	Date: Time:	Received By:	REMARKS: 3day
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C 1.2 Corrected Temp. °C 0.7	Sample Condition Cool ☑ Yes ☐ No Intact ☑ Yes ☐ No; CHECKED BY: (Initials) TO	Turnaround Time: Standard ☐ Rush ☑; Thermometer ID #113 Correction Factor -0.5°C; Bacteria (only) Sample Condition Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No Observed Temp. °C Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Altamira - US
Project Manager: Bryan Huey
Address: 14229 Punta Bonaire
City: Corpus Christi State: TX Zip: 78418
Phone #: 361 658 3126 Fax #: —
Project #: NOVO NM 2103 Project Owner: Bryan Huey
Project Name: Novo Culebra Bluff
Project Location: Loving New Mexico
Sampler Name: [signature] Gonzales

BILL TO
P.O. #:
Company: Novo oil & GAS
Attn:
Address:
City:
State: Zip:
Phone #:
Fax #:

ANALYSIS REQUEST: Chlorides (300 or equivalent)

Lab I.D. (FOR LAB USE ONLY)	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME	Chlorides (300 or equivalent)
	SB-2 (1-2)	G	1			X					X		4/28/22	1028	X
	SB-2 (2-3)	G	1			X					X		4/28/22	1029	X
	SB-2 (3-4)	G	1			X					X		4/28/22	1030	X
	SB-2 (4-5)	G	1			X					X		4/28/22	1031	X
	SB-2 (6-7)	G	1			X					X		4/28/22	1034	X
	SB-2 (8-9)	G	1			X					X		4/28/22	1035	X
	SB-2 (9-10)	G	1			X					X		4/28/22	1036	X
	SB-2 (10-11)	G	1			X					X		4/28/22	1040	X
	SB-2 (11-12)	G	1			X					X		4/28/22	1041	X
	SB-2 (12-13)	G	1			X					X		4/28/22	1042	X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: [signature] Date: 4-29-22 Time: 1035 Received By: Tamara Oldaker

Relinquished By: Date: Time: Received By:

Delivered By: (Circle One) Sampler - UPS - Bus - Other:

Observed Temp. °C 1.2
Corrected Temp. °C 0.7

Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No

CHECKED BY: (Initials) [initials]

Verbal Result: ☐ Yes ☐ No Add'l Phone #:
All Results are emailed. Please provide Email address:

REMARKS: 3day

Turnaround Time: Standard ☐ Rush ☑

Thermometer ID #113
Correction Factor -0.5°C

Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No; Intact ☐ Yes ☐ No; Observed Temp. °C; Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Altamira -US
Project Manager: Bryon Huney
Address: 14229 Punta Bonaire
City: Corpus Christi State: TX Zip: 78418
Phone #: 361 658 3126 Fax #: —
Project #: NOVO NM 2103 Project Owner: Bryan Huney
Project Name: Novo Culebra Bluff
Project Location: Loving New Mexico
Sampler Name: [signature] Gonzalez

BILL TO
P.O. #:
Company: Novo oil & Gas
Attn:
Address:
City:
State: Zip:
Phone #:
Fax #:

ANALYSIS REQUEST: Chlorides (300 or equivalent)

Lab I.D. (FOR LAB USE ONLY)	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME	Chlorides
	SB-2 (13-14)	G	1			X					X		4/28/22	1043	X
	SB-2 (14-15)	G	1			X					X		4/28/22	1044	X
	SB- ( )	G	1			X					X				X
	SB- ( )	G	1			X					X				X
	SB- ( )	G	1			X					X				X
	SB- ( )	G	1			X					X				X
	SB- ( )	G	1			X					X				X
	SB- ( )	G	1			X					X				X
	SB- ( )	G	1			X					X				X
	SB- ( )	G	1			X					X				X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: [signature] Date: 4-29-22 Time: 1035 Received By: Tamara Oldaker
Relinquished By: Date: Time: Received By:

Verbal Result: ☐ Yes ☐ No Add'l Phone #:
All Results are emailed. Please provide Email address:
REMARKS: 3day

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:
Observed Temp. °C 1.2
Corrected Temp. °C 0.7
Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No
CHECKED BY: (Initials) [initials]
Turnaround Time: Standard ☐ Rush ☑
Thermometer ID #113
Correction Factor -0.5°C
Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No; Intact ☐ Yes ☐ No; Observed Temp. °C; Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Altamira -US
Project Manager: Bryon Huna
Address: 14229 Punta Bonaire
City: Corpus Christi State: TX Zip: 78918
Phone #: 361 658 3126 Fax #: —
Project #: NONVO NM 2103 Project Owner: Bryan Huney
Project Name: Novo Culebra Bluff
Project Location: Loving New Mexico
Sampler Name: [signature] Gonzales

BILL TO
P.O. #:
Company: Novo oil & GAS
Attn:
Address:
City:
State: Zip:
Phone #:
Fax #:

ANALYSIS REQUEST: Chlorides (300 or equivalent)

Lab I.D. (FOR LAB USE ONLY)	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME	Chlorides
	SB-12 (1-2)	G	1			X					X		4/28/22	1118	X
	SB-12 (2-3)	G	1			X					X		4/28/22	1119	X
	SB-12 (3-4)	G	1			X					X		4/28/22	1120	X
	SB-12 (4-5)	G	1			X					X		4/28/22	1121	X
	SB-12 (6-7)	G	1			X					X		4/28/22	1125	X
	SB-12 (8-9)	G	1			X					X		4/28/22	1136	X
	SB-12 (10-11)	G	1			X					X		4/28/22	1142	X
	SB-12 (12-13)	G	1			X					X		4/28/22	1147	X
	SB-12 (14-15)	G	1			X					X		4/28/22	1204	X
	~~SB-12~~	G	1			X					X				X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: [signature] Date: 4-29-22 Time: 1035 Received By: Tamara Oldaker
Relinquished By: Date: Time: Received By:

Verbal Result: ☐ Yes ☐ No Add'l Phone #:
All Results are emailed. Please provide Email address:
REMARKS: 3day

Delivered By: (Circle One) Sampler - UPS - Bus - Other:
Observed Temp. °C 1.2
Corrected Temp. °C 0.7
Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No
CHECKED BY: (Initials) [initials]

Turnaround Time: Standard ☐ Rush ☑
Thermometer ID #113 Correction Factor -0.5°C
Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No; Intact ☐ Yes ☐ No; Observed Temp. °C; Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories
101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Altamira - US
Project Manager: Bryon Huney
Address: 14229 Punta Bonaire
City: Corpus Christi State: TX Zip: 78418
Phone #: 361 658 3126 Fax #: —
Project #: NOVO NM 2102 Project Owner: Bryan Huney
Project Name: Novo Culebra Bluff
Project Location: Loving New Mexico
Sampler Name: [illegible] Gonzalez

BILL TO
P.O. #:
Company: NOVO oil & GAS
Attn:
Address:
City:
State: Zip:
Phone #:
Fax #:

FOR LAB USE ONLY

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	Chlorides (300 equivalent)
	SB-23 (0-1)	G	1			X					X		4/28/22	1303	X
	SB-23 (1-2)	G	1			X					X		4/28/22	1304	X
	SB-23 (2-3)	G	1			X					X		4/28/22	1305	X
	SB-23 (3-4)	G	1			X					X		4/28/22	1314	X
	SB-23 (4-5)	G	1			X					X		4/28/22	1315	X
	SB-23 (6-7)	G	1			X					X		4/28/22	1317	X
	SB-23 (8-9)	G	1			X					X		4/28/22	1320	X
	SB-23 (9-10)	G	1			X					X		4/28/22	1323	X
	~~SB-~~	G	1			X					X				X
	~~SB-~~	G	1			X					X				X

Relinquished By: [signature] Date: 4-29-22 Time: 1035 Received By: Tamara Oldaker

Relinquished By: Date: Time: Received By:

Verbal Result: ☐ Yes ☐ No Add'l Phone #:
All Results are emailed. Please provide Email address:

REMARKS: 3 days

Delivered By: (Circle One) Sampler - UPS - Bus - Other:

Observed Temp. °C 1.2
Corrected Temp. °C 0.7

Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No

CHECKED BY: (Initials) TO

Turnaround Time: Standard ☐ Rush ☑

Thermometer ID #113
Correction Factor -0.5°C

Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No; Intact ☐ Yes ☐ No; Observed Temp. °C; Corrected Temp. °C

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Altamira - US
Project Manager: Bryon Huney
Address: 14229 Punta Bonaire
City: Corpus Christi State: TX Zip: 78918
Phone #: 361 658 3126 Fax #: —
Project #: NOVO NM 2103 Project Owner: Bryan Huney
Project Name: Novo Culebra Bluff
Project Location: Loving New Mexico
Sampler Name: [illegible] Gonzalez

BILL TO
P.O. #:
Company: Novo oil & GAS
Attn:
Address:
City:
State: Zip:
Phone #:
Fax #:

ANALYSIS REQUEST: Chlorides (300 equivalent)

Lab I.D. (FOR LAB USE ONLY)	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	ICE / COOL	OTHER	DATE	TIME	Chlorides
	SB-8 (2-3)	G	1			X					X		4/28/22	1346	X
	SB-8 (3-4)	G	1			X					X		4/28/22	1350	X
	SB-8 (4-5)	G	1			X					X		4/28/22	1353	X
	SB-8 (6-7)	G	1			X					X		4/28/22	1355	X
	SB-8 (8-9)	G	1			X					X		4/28/22	1356	X
	SB 8 (10-11)	G	1			X					X		4/28/22	1358	X
	SB- 8 (12-13)	G	1			X					X		4/28/22	1400	X
	SB- 8 (14-15)	G	1			X					X		4/28/22	1403	X
	SB- ( )	G	1			X					X				X
	SB- ( )	G	1			X					X				X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: [signature] Date: 4-29-22 Time: 1035 Received By: Tamara Oldaker

Relinquished By: Date: Time: Received By:

Verbal Result: ☐ Yes ☐ No Add'l Phone #:
All Results are emailed. Please provide Email address:

REMARKS: 3 day

Delivered By: (Circle One) Sampler - UPS - Bus - Other:

Observed Temp. °C 1.2
Corrected Temp. °C 0.7

Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No

CHECKED BY: (Initials) TO

Turnaround Time: Standard ☐ Rush ☑

Thermometer ID #113
Correction Factor -0.5°C

Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No; Intact ☐ Yes ☐ No; Observed Temp. °C; Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Altamira - US	**BILL TO**
Project Manager: Bryon Huney	P.O. #:
Address: 14229 Punta Bonaire	Company: Novo oil & GAS
City: Corpus Christi State: TX Zip: 78418	Attn:
Phone #: 361 658 3126 Fax #: —	Address:
Project #: NOVO NM 2103 Project Owner: Bryan Huney	City:
Project Name: Novo Culebra Bluff	State: Zip:
Project Location: Loving New Mexico	Phone #:
Sampler Name: [signature] Gonzalez	Fax #:

ANALYSIS REQUEST: Chlorides (300 equivalent)

Lab I.D. (FOR LAB USE ONLY)	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME	Chlorides (300 equivalent)
	SB-6 (3-4)	G	1			X					X		4/28/22 1420		X
	SB-6 (4-5)	G	1			X					X		4/28/22	1421	X
	SB-6 (6-7)	G	1			X					X		4/28/22	1424	X
	SB-6 (8-9)	G	1			X					X		4/28/22	1426	X
	SB-6 (9-10)	G	1			X					X		4/28/22	1429	X
	~~SB- ( )~~	G	1			X					X				X
	~~SB- ( )~~	G	1			X					X				X
	~~SB- ( )~~	G	1			X					X				X
	~~SB- ( )~~	G	1			X					X				X
	~~SB- ( )~~	G	1			X					X				X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: [signature]	Date: 4-29-22 Time: 1035	Received By: Tamara Oldaker	Verbal Result: ☐ Yes ☐ No Add'l Phone #: All Results are emailed. Please provide Email address:
Relinquished By:	Date: Time:	Received By:	REMARKS: 3day
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C 1.2 Corrected Temp. °C 0.7	Sample Condition Cool ☑ Yes ☐ No Intact ☑ Yes ☐ No	CHECKED BY: (Initials) [initials]	Turnaround Time: Standard ☐ Rush ☑ Thermometer ID #113 Correction Factor -0.5°C	Bacteria (only) Sample Condition Cool Intact ☐ Yes ☐ No ☐ Yes ☐ No Observed Temp. °C Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Alamera - US
Project Manager:	Bryan Hung
Address:	14229 Punta Romani
City:	Corpus Christi State: TX Zip: 78418
Phone #:	3616583126 Fax #:
Project #:	NOVO NM2103 Project Owner: Bryan Hung
Project Name:	NOVO Culebra Bluff
Project Location:	Loving New Mexico
Sampler Name:	Mark Gonzales

BILL TO

P.O. #:	
Company:	NOVO oil & GAS
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

Chlorides (300.0 or equivalent)

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	Chlorides
	SB-11 (4-5)	G	1			X					X		4/28/22	1545	X
	SB-11 (6-7)	G	1			X					X		4/28/22	1548	X
	SB-11 (8-9)	G	1			X					X		4/28/22	1549	X
	SB-11 (10-11)	G	1			X					X		4/28/22	1552	X
	SB-11 (12-13)	G	1			X					X		4/28/22	1554	X
	SB-11 (14-15)	G	1			X					X		4/28/22	1556	X
	SB- ( )	G	1			X					X				X
	SB- ( )	G	1			X					X				X
	SB- ( )	G	1			X					X				X
	SB- ( )	G	1			X					X				X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 4-29-22 Time: 1035	Received By:	Verbal Result: ☐ Yes ☐ No Add'l Phone #: All Results are emailed. Please provide Email address:
Relinquished By:	Date: Time:	Received By:	REMARKS: 3 days
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C 1.2 Corrected Temp. °C 0.7	Sample Condition Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials) TO
Turnaround Time: Standard ☐ Rush ☑	Thermometer ID #113 Correction Factor -0.5°C	Bacteria (only) Sample Condition Cool: ☐ Yes ☐ No Intact: ☐ Yes ☐ No	Observed Temp. °C Corrected Temp. °C

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

FORM-006 R 3.2 10/07/21

CARDINAL Laboratories
101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Altamira - US
Project Manager: Bryan Huey
Address: 14225 Punta Bonaire
City: Corpus Christi State: TX Zip: 78418
Phone #: 361 658 3126 Fax #: —
Project #: NOVO NM 2103 Project Owner: Bryan Huey
Project Name: Novo Culebra Bluff
Project Location: Loving New Mexico
Sampler Name: [signature] Gonzalez

BILL TO
P.O. #:
Company: Novo Oil & Gas
Attn:
Address:
City:
State: Zip:
Phone #:
Fax #:

ANALYSIS REQUEST: Chlorides (300 or equivalent)

Lab I.D. (FOR LAB USE ONLY)	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME	Chlorides (300 or equivalent)
	SB-18 (4-5)	G	1			X					X		4/28/22	1631	X
	SB-18 (5-6)	G	1			X					X		4/28/22	1636	X
	SB-18 (6-7)	G	1			X					X		4/28/22	1638	X
	SB-18 (9-10)	G	1			X					X		4/28/22	1643	X
	SB- ( )	G	1			X					X				X
	SB- ( )	G	1			X					X				X
	SB- ( )	G	1			X					X				X
	SB- ( )	G	1			X					X				X
	SB- ( )	G	1			X					X				X
	SB- ( )	G	1			X					X				X

Relinquished By: [signature] Date: 4-29-22 Time: 1035 Received By: Tamara [signature]
Relinquished By: Date: Time: Received By:

Verbal Result: ☐ Yes ☐ No Add'l Phone #:
All Results are emailed. Please provide Email address:
REMARKS: 3 day

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:
Observed Temp. °C 1.2
Corrected Temp. °C 0.7
Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No
CHECKED BY: (Initials) TO.

Turnaround Time: Standard ☐ Rush ☑
Thermometer ID #113
Correction Factor -0.5°C
Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No; Intact ☐ Yes ☐ No; Observed Temp. °C; Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Alamira - (L)
Project Manager:	Bryan Hung
Address:	14229 Hunterbrook
City:	Corpus Christi State: TX Zip: 78418
Phone #:	361 658 3126 Fax #: —
Project #:	NOVO NM 2103 Project Owner: Bryan Hung
Project Name:	NOVO Celebra Bluff
Project Location:	Loving New Mexico
Sampler Name:	Michael Gonzales

BILL TO

P.O. #:	
Company:	NOVO oil & GAS
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

Ch lorides (300, as received)

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING DATE	SAMPLING TIME	Chlorides (300, as received)
	SB-7 (3-4)	G	1			X					X		4/28/22	1516	X
	SB-7 (4-5)	G	1			X					X		4/28/22	1518	X
	SB-7 (6-7)	G	1			X					X		4/28/22	1520	X
	SB-7 (8-9)	G	1			X					X		4/28/22	1523	X
	SB-7 (9-10)	G	1			X					X		4/28/22	1524	X
	SB-( )	G	1			X					X				X
	SB-( )	G	1			X					X				X
	SB-( )	G	1			X					X				X
	SB-( )	G	1			X					X				X
	SB-( )	G	1			X					X				X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 4-29-22 Time: 1035	Received By:	Verbal Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Date: Time:	Received By:	All Results are emailed. Please provide Email address:
			REMARKS: 3day

Delivered By: (Circle One)	Observed Temp. °C 1.2	Sample Condition Cool ☑ Yes Intact ☑ Yes	CHECKED BY: (Initials)	Turnaround Time: Standard ☐ Rush ☑	Bacteria (only) Sample Condition Cool ☐ Yes Intact ☐ Yes Observed Temp. °C
Sampler - UPS - Bus - Other:	Corrected Temp. °C 0.7	☐ No ☐ No		Thermometer ID #113 Correction Factor -0.5°C	☐ No ☐ No Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

APPENDIX F
Plugging Report

PLUGGING RECORD

NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC

I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: C-4588-POD1 (SB-1)

Well owner: Novo Oil & Gas Northern Delaware, LLC Phone No.: 405-286-3916

Mailing address: 1001 W. Wilshire Blvd. Suite 206

City: Oklahoma City State: OK Zip code: 73116

II. WELL PLUGGING INFORMATION:

1) Name of well drilling company that plugged well: White Drilling Company, Inc.

2) New Mexico Well Driller License No.: WD-1456 Expiration Date: 09/30/2022

3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): John White

4) Date well plugging began: 01/25/2022 Date well plugging concluded: 01/25/2022

5) GPS Well Location: Latitude: 32 deg, 20 min, 31.47 sec
Longitude: 104 deg, 05 min, 8.404 sec, WGS 84

6) Depth of well confirmed at initiation of plugging as: 46.5 ft below ground level (bgl), by the following manner: Steel Tape

7) Static water level measured at initiation of plugging: 46.5 ft bgl

8) Date well plugging plan of operations was approved by the State Engineer: 01/25/2022

9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
0 50	Type 1 Cement-Bentonite Slurry	6.82 Gal		Pump Mix w/trimie pipe	

MULTIPLY		BY		AND OBTAIN
cubic feet	x	7.4805	=	gallons
cubic yards	x	201.97	=	gallons

III. SIGNATURE:

I, John White say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Signature of Well Driller

02/08/2022
Date

APPENDIX G
Laboratory Analytical Data Reports

ANALYTICAL REPORT

February 01, 2022

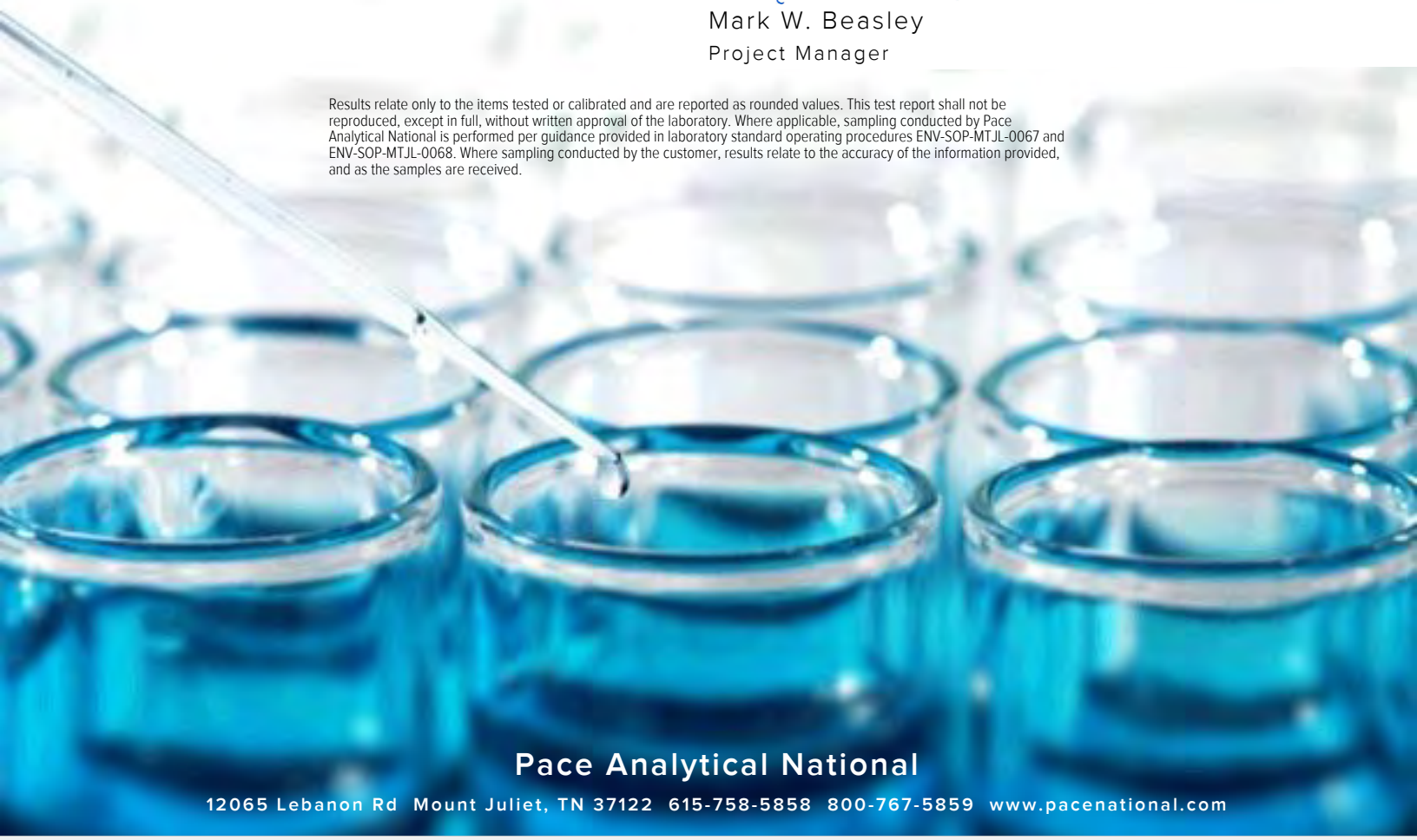
Altamira - Angleton, TX

Sample Delivery Group:	L1455251
Samples Received:	01/27/2022
Project Number:	NVONM2103 PHASE 001
Description:	Novo Culebra Bluff
Site:	CULEBRA BLUFF
Report To:	Bryan Haney 4001 Technology Drive, Ste 120 Angleton, TX 77515

Entire Report Reviewed By:

Mark W. Beasley
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Sc: Sample Chain of Custody 52

SB-1(0-1') L1455251-01 Solid

Collected by: BH/OG | Collected date/time: 01/25/22 09:57 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809537	1	01/28/22 07:04	01/28/22 07:11	CMK	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809416	1	01/27/22 17:50	01/27/22 21:11	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809449	26	01/25/22 09:57	01/27/22 22:43	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809440	1.04	01/25/22 09:57	01/28/22 00:38	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810265	1	01/31/22 08:13	01/31/22 13:57	TJD	Mt. Juliet, TN

SB-1(2-3') L1455251-02 Solid

Collected by: BH/OG | Collected date/time: 01/25/22 10:04 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809537	1	01/28/22 07:04	01/28/22 07:11	CMK	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809416	1	01/27/22 17:50	01/27/22 21:20	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809449	27	01/25/22 10:04	01/27/22 23:05	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809440	1.08	01/25/22 10:04	01/28/22 00:57	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810265	1	01/31/22 08:13	01/31/22 18:56	TJD	Mt. Juliet, TN

SB-2(0-1') L1455251-06 Solid

Collected by: BH/OG | Collected date/time: 01/25/22 11:11 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809537	1	01/28/22 07:04	01/28/22 07:11	CMK	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809416	20	01/27/22 17:50	01/27/22 21:58	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809449	25	01/25/22 11:11	01/27/22 23:27	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809440	1	01/25/22 11:11	01/28/22 01:16	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810265	1	01/31/22 08:13	01/31/22 15:15	TJD	Mt. Juliet, TN

SB-2(2-3') L1455251-07 Solid

Collected by: BH/OG | Collected date/time: 01/25/22 11:19 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809537	1	01/28/22 07:04	01/28/22 07:11	CMK	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809416	10	01/27/22 17:50	01/27/22 22:07	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809449	25.8	01/25/22 11:19	01/27/22 23:49	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809440	1.03	01/25/22 11:19	01/28/22 01:36	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810265	1	01/31/22 08:13	01/31/22 13:44	TJD	Mt. Juliet, TN

SB-3(0-1') L1455251-14 Solid

Collected by: BH/OG | Collected date/time: 01/25/22 13:30 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809538	1	01/28/22 09:28	01/28/22 09:57	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809416	10.2	01/27/22 17:50	01/27/22 22:17	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809449	25	01/25/22 13:30	01/28/22 00:11	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809440	1	01/25/22 13:30	01/28/22 01:54	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810265	1	01/31/22 08:13	01/31/22 14:10	TJD	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Tr
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

SB-3(1-2') L1455251-15 Solid

			Collected by	Collected date/time	Received date/time	
			BH/OG	01/25/22 13:33	01/27/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809538	1	01/28/22 09:28	01/28/22 09:57	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809416	10	01/27/22 17:50	01/27/22 22:45	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809449	25	01/25/22 13:33	01/28/22 00:33	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809440	1	01/25/22 13:33	01/28/22 02:13	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810265	1	01/31/22 08:13	01/31/22 17:12	TJD	Mt. Juliet, TN

SB-4(0-1') L1455251-18 Solid

			Collected by	Collected date/time	Received date/time	
			BH/OG	01/25/22 14:10	01/27/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809538	1	01/28/22 09:28	01/28/22 09:57	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809416	1	01/27/22 17:50	01/27/22 22:55	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809449	25	01/25/22 14:10	01/28/22 00:55	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809440	1	01/25/22 14:10	01/28/22 02:32	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810265	1	01/31/22 08:13	01/31/22 14:23	TJD	Mt. Juliet, TN

SB-4(1-2') L1455251-19 Solid

			Collected by	Collected date/time	Received date/time	
			BH/OG	01/25/22 14:15	01/27/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809538	1	01/28/22 09:28	01/28/22 09:57	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809416	1.02	01/27/22 17:50	01/27/22 23:04	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809449	25	01/25/22 14:15	01/28/22 01:17	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809440	1	01/25/22 14:15	01/28/22 02:51	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810265	1	01/31/22 08:13	01/31/22 14:36	TJD	Mt. Juliet, TN

SB-6(0-1') L1455251-20 Solid

			Collected by	Collected date/time	Received date/time	
			BH/OG	01/25/22 14:26	01/27/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809538	1	01/28/22 09:28	01/28/22 09:57	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809416	10	01/27/22 17:50	01/27/22 23:14	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809449	25	01/25/22 14:26	01/28/22 01:39	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809440	1	01/25/22 14:26	01/28/22 03:10	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810265	1	01/31/22 08:13	01/31/22 14:49	TJD	Mt. Juliet, TN

SB-6(1-2') L1455251-21 Solid

			Collected by	Collected date/time	Received date/time	
			BH/OG	01/25/22 14:32	01/27/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809538	1	01/28/22 09:28	01/28/22 09:57	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809416	10	01/27/22 17:50	01/27/22 23:23	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809449	25	01/25/22 14:32	01/28/22 02:00	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809440	1	01/25/22 14:32	01/28/22 03:29	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810264	1	01/31/22 08:11	01/31/22 14:05	TJD	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Tr
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

SB-8(0-1') L1455251-22 Solid

Collected by: BH/OG | Collected date/time: 01/25/22 14:45 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809538	1	01/28/22 09:28	01/28/22 09:57	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809416	100	01/27/22 17:50	01/27/22 23:33	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809449	25	01/25/22 14:45	01/28/22 02:22	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809440	1	01/25/22 14:45	01/28/22 03:48	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810264	1	01/31/22 08:11	01/31/22 17:55	TJD	Mt. Juliet, TN

SB-5(0-1') L1455251-23 Solid

Collected by: BH/OG | Collected date/time: 01/25/22 14:57 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809538	1	01/28/22 09:28	01/28/22 09:57	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809416	10	01/27/22 17:50	01/27/22 23:43	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809449	25	01/25/22 14:57	01/28/22 02:44	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809440	1	01/25/22 14:57	01/28/22 04:07	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810264	1	01/31/22 08:11	01/31/22 18:49	TJD	Mt. Juliet, TN

SB-5(1-1.5') L1455251-24 Solid

Collected by: BH/OG | Collected date/time: 01/25/22 15:05 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809538	1	01/28/22 09:28	01/28/22 09:57	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809416	10.4	01/27/22 17:50	01/28/22 00:08	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809449	25	01/25/22 15:05	01/28/22 03:06	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809440	1	01/25/22 15:05	01/28/22 04:26	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810264	1	01/31/22 08:11	01/31/22 18:35	TJD	Mt. Juliet, TN

SB-9(0-1') L1455251-25 Solid

Collected by: BH/OG | Collected date/time: 01/25/22 15:23 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809538	1	01/28/22 09:28	01/28/22 09:57	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809416	10	01/27/22 17:50	01/28/22 00:17	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809449	31.5	01/25/22 15:23	01/28/22 03:28	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809440	1.26	01/25/22 15:23	01/28/22 04:45	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810264	1	01/31/22 08:11	01/31/22 14:19	TJD	Mt. Juliet, TN

SB-9(1-2') L1455251-26 Solid

Collected by: BH/OG | Collected date/time: 01/25/22 15:26 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809539	1	01/28/22 10:09	01/28/22 10:26	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809416	10	01/27/22 17:50	01/28/22 00:46	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809449	25	01/25/22 15:26	01/28/22 03:50	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809440	1	01/25/22 15:26	01/28/22 05:04	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810264	1	01/31/22 08:11	01/31/22 18:08	TJD	Mt. Juliet, TN

SB-7(0-1') L1455251-28 Solid

Collected by	Collected date/time	Received date/time
BH/OG	01/25/22 15:58	01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809539	1	01/28/22 10:09	01/28/22 10:26	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809416	10	01/27/22 17:50	01/28/22 00:55	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809449	25	01/25/22 15:58	01/28/22 04:12	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809440	1	01/25/22 15:58	01/28/22 05:23	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810264	1	01/31/22 08:11	01/31/22 14:32	TJD	Mt. Juliet, TN

SB-7(1-2') L1455251-29 Solid

Collected by	Collected date/time	Received date/time
BH/OG	01/25/22 16:01	01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809539	1	01/28/22 10:09	01/28/22 10:26	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809416	5	01/27/22 17:50	01/28/22 01:05	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809449	25	01/25/22 16:01	01/28/22 04:34	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809440	1	01/25/22 16:01	01/28/22 05:42	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810264	1	01/31/22 08:11	01/31/22 14:46	TJD	Mt. Juliet, TN

SB-7(2-2.5') L1455251-30 Solid

Collected by	Collected date/time	Received date/time
BH/OG	01/25/22 16:03	01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809539	1	01/28/22 10:09	01/28/22 10:26	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809416	1.01	01/27/22 17:50	01/28/22 01:14	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809449	26.5	01/25/22 16:03	01/28/22 04:56	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809440	1.06	01/25/22 16:03	01/28/22 06:01	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810264	1	01/31/22 08:11	01/31/22 14:59	TJD	Mt. Juliet, TN

SB-10(0-1') L1455251-31 Solid

Collected by	Collected date/time	Received date/time
BH/OG	01/25/22 16:12	01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809539	1	01/28/22 10:09	01/28/22 10:26	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809416	1.02	01/27/22 17:50	01/28/22 01:24	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809449	29	01/25/22 16:12	01/28/22 05:18	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809440	1.16	01/25/22 16:12	01/28/22 06:20	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810264	1	01/31/22 08:11	01/31/22 15:13	TJD	Mt. Juliet, TN

SB-10(1-2') L1455251-32 Solid

Collected by	Collected date/time	Received date/time
BH/OG	01/25/22 16:15	01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809539	1	01/28/22 10:09	01/28/22 10:26	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809416	1.04	01/27/22 17:50	01/28/22 01:33	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809449	25.3	01/25/22 16:15	01/28/22 05:40	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809440	1.01	01/25/22 16:15	01/28/22 06:39	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810264	1	01/31/22 08:11	01/31/22 15:26	TJD	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Tr
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

SB-11(0-1') L1455251-35 Solid

Collected by: BH/OG | Collected date/time: 01/25/22 16:31 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809539	1	01/28/22 10:09	01/28/22 10:26	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809423	10	01/27/22 22:30	01/28/22 02:40	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809503	26.5	01/25/22 16:31	01/28/22 02:39	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809490	1.06	01/25/22 16:31	01/28/22 06:07	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810264	1	01/31/22 08:11	01/31/22 16:07	TJD	Mt. Juliet, TN

SB-11(1-2') L1455251-36 Solid

Collected by: BH/OG | Collected date/time: 01/25/22 16:33 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809539	1	01/28/22 10:09	01/28/22 10:26	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809423	10	01/27/22 22:30	01/28/22 02:50	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809503	26.5	01/25/22 16:33	01/28/22 03:02	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809491	1.06	01/25/22 16:33	01/28/22 04:29	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810264	1	01/31/22 08:11	01/31/22 16:20	TJD	Mt. Juliet, TN

TRIP BLANK L1455251-39 GW

Collected by: BH/OG | Collected date/time: 01/25/22 00:00 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809290	1	01/27/22 15:43	01/27/22 15:43	ACG	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Mark W. Beasley
Project Manager

Revised May 2010

Laboratory Data Package Cover Page

This data package consists of this signature page, the laboratory review checklist, and the following reportable data as applicable:

R1 - Field chain-of-custody documentation;

R2 - Sample identification cross-reference;

R3 - Test reports (analytical data sheets) for each environmental sample that includes:

a. Items consistent with NELAC Chapter 5,

b. dilution factors,

c. preparation methods,

d. cleanup methods, and

e. if required for the project, tentatively identified compounds (TICs).

R4 - Surrogate recovery data including:

a. Calculated recovery (%R), and

b. The laboratory's surrogate QC limits.

R5 - Test reports/summary forms for blank samples;

R6 - Test reports/summary forms for laboratory control samples (LCSs) including:

a. LCS spiking amounts,

b. Calculated %R for each analyte, and

c. The laboratory's LCS QC limits.

R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

a. Samples associated with the MS/MSD clearly identified,

b. MS/MSD spiking amounts,

c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,

d. Calculated %Rs and relative percent differences (RPDs), and

e. The laboratory's MS/MSD QC limits

R8 - Laboratory analytical duplicate (if applicable) recovery and precision:

a. The amount of analyte measured in the duplicate,

b. The calculated RPD, and

c. The laboratory's QC limits for analytical duplicates.

R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.

R10 - Other problems or anomalies.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Mark W. Beasley

Project Manager

Revised May 2010

Laboratory Review Checklist: Reportable Data

Laboratory Name: Pace Analytical National	LRC Date: 02/01/2022 13:17
Project Name: Novo Culebra Bluff	Laboratory Job Number: L1455251-01, 02, 06, 07, 14, 15, 18, 19, 20, 21, 22, 23, 24, 25, 26, 28, 29, 30, 31, 32, 35, 36 and 39
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1809490, WG1809449, WG1809416, WG1809423, WG1809440, WG1809537, WG1809538, WG1809539, WG1809491, WG1809290, WG1809503, WG1810264 and WG1810265

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?	X				
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?	X				
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Supporting Data

Laboratory Name: Pace Analytical National	LRC Date: 02/01/2022 13:17
Project Name: Novo Culebra Bluff	Laboratory Job Number: L1455251-01, 02, 06, 07, 14, 15, 18, 19, 20, 21, 22, 23, 24, 25, 26, 28, 29, 30, 31, 32, 35, 36 and 39
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1809490, WG1809449, WG1809416, WG1809423, WG1809440, WG1809537, WG1809538, WG1809539, WG1809491, WG1809290, WG1809503, WG1810264 and WG1810265

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?			X		
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Revised May 2010

Laboratory Review Checklist: Exceptions Reports

Laboratory Name: Pace Analytical National	LRC Date: 02/01/2022 13:17
Project Name: Novo Culebra Bluff	Laboratory Job Number: L1455251-01, 02, 06, 07, 14, 15, 18, 19, 20, 21, 22, 23, 24, 25, 26, 28, 29, 30, 31, 32, 35, 36 and 39
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1809490, WG1809449, WG1809416, WG1809423, WG1809440, WG1809537, WG1809538, WG1809539, WG1809491, WG1809290, WG1809503, WG1810264 and WG1810265

ER #[1]	Description
1	300.0 WG1809423 Chloride: Percent Recovery is outside of established control limits.

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.8		1	01/28/2022 07:11	WG1809537

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	64.4		9.60	20.0	20.9	1	01/27/2022 21:11	WG1809416

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.612	0.100	2.82	26	01/27/2022 22:43	WG1809449
(S) a,a,a-Trifluorotoluene(FID)	*90.1*				*77.0-120*		*01/27/2022 22:43*	WG1809449

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000527	0.00100	0.00113	1.04	01/28/2022 00:38	WG1809440
Toluene	U		0.00147	0.00500	0.00564	1.04	01/28/2022 00:38	WG1809440
Ethylbenzene	U		0.000832	0.00250	0.00282	1.04	01/28/2022 00:38	WG1809440
Total Xylenes	U		0.000993	0.00650	0.00733	1.04	01/28/2022 00:38	WG1809440
(S) Toluene-d8	*95.3*				*75.0-131*		*01/28/2022 00:38*	WG1809440
(S) 4-Bromofluorobenzene	*103*				*67.0-138*		*01/28/2022 00:38*	WG1809440
(S) 1,2-Dichloroethane-d4	*116*				*70.0-130*		*01/28/2022 00:38*	WG1809440

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U		1.68	4.00	4.17	1	01/31/2022 13:57	WG1810265
C28-C36 Motor Oil Range	4.37		0.286	4.00	4.17	1	01/31/2022 13:57	WG1810265
(S) o-Terphenyl	*71.0*				*18.0-148*		*01/31/2022 13:57*	WG1810265

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.8		1	01/28/2022 07:11	WG1809537

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	162		9.71	20.0	21.1	1	01/27/2022 21:20	WG1809416

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.648	0.100	2.99	27	01/27/2022 23:05	WG1809449
(S) a,a,a-Trifluorotoluene(FID)	*90.6*				*77.0-120*		*01/27/2022 23:05*	WG1809449

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000558	0.00100	0.00120	1.08	01/28/2022 00:57	WG1809440
Toluene	U		0.00155	0.00500	0.00598	1.08	01/28/2022 00:57	WG1809440
Ethylbenzene	U		0.000881	0.00250	0.00299	1.08	01/28/2022 00:57	WG1809440
Total Xylenes	U		0.00105	0.00650	0.00777	1.08	01/28/2022 00:57	WG1809440
(S) Toluene-d8	*94.1*				*75.0-131*		*01/28/2022 00:57*	WG1809440
(S) 4-Bromofluorobenzene	*105*				*67.0-138*		*01/28/2022 00:57*	WG1809440
(S) 1,2-Dichloroethane-d4	*114*				*70.0-130*		*01/28/2022 00:57*	WG1809440

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	15.3		1.70	4.00	4.22	1	01/31/2022 18:56	WG1810265
C28-C36 Motor Oil Range	47.3		0.289	4.00	4.22	1	01/31/2022 18:56	WG1810265
(S) o-Terphenyl	*87.2*				*18.0-148*		*01/31/2022 18:56*	WG1810265

SB-2(0-1')
Collected date/time: 01/25/22 11:11
L1455251

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.1		1	01/28/2022 07:11	WG1809537

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	8080		196	20.0	425	20	01/27/2022 21:58	WG1809416

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.616	0.100	2.84	25	01/27/2022 23:27	WG1809449
(S) a,a,a-Trifluorotoluene(FID)	*90.6*				*77.0-120*		*01/27/2022 23:27*	WG1809449

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000530	0.00100	0.00113	1	01/28/2022 01:16	WG1809440
Toluene	U		0.00148	0.00500	0.00567	1	01/28/2022 01:16	WG1809440
Ethylbenzene	U		0.000836	0.00250	0.00284	1	01/28/2022 01:16	WG1809440
Total Xylenes	U		0.000998	0.00650	0.00738	1	01/28/2022 01:16	WG1809440
(S) Toluene-d8	*97.7*				*75.0-131*		*01/28/2022 01:16*	WG1809440
(S) 4-Bromofluorobenzene	*105*				*67.0-138*		*01/28/2022 01:16*	WG1809440
(S) 1,2-Dichloroethane-d4	*115*				*70.0-130*		*01/28/2022 01:16*	WG1809440

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	33.0		1.71	4.00	4.25	1	01/31/2022 15:15	WG1810265
C28-C36 Motor Oil Range	54.5		0.291	4.00	4.25	1	01/31/2022 15:15	WG1810265
(S) o-Terphenyl	*63.7*				*18.0-148*		*01/31/2022 15:15*	WG1810265

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	92.6		1	01/28/2022 07:11	WG1809537

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	3570		99.3	20.0	216	10	01/27/2022 22:07	WG1809416

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.648	0.100	2.98	25.8	01/27/2022 23:49	WG1809449
(S) a,a,a-Trifluorotoluene(FID)	*91.3*				*77.0-120*		*01/27/2022 23:49*	WG1809449

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000556	0.00100	0.00119	1.03	01/28/2022 01:36	WG1809440
Toluene	U		0.00155	0.00500	0.00596	1.03	01/28/2022 01:36	WG1809440
Ethylbenzene	U		0.000878	0.00250	0.00298	1.03	01/28/2022 01:36	WG1809440
Total Xylenes	U		0.00105	0.00650	0.00775	1.03	01/28/2022 01:36	WG1809440
(S) Toluene-d8	*95.3*				*75.0-131*		*01/28/2022 01:36*	WG1809440
(S) 4-Bromofluorobenzene	*103*				*67.0-138*		*01/28/2022 01:36*	WG1809440
(S) 1,2-Dichloroethane-d4	*110*				*70.0-130*		*01/28/2022 01:36*	WG1809440

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	6.36		1.74	4.00	4.32	1	01/31/2022 13:44	WG1810265
C28-C36 Motor Oil Range	11.2		0.296	4.00	4.32	1	01/31/2022 13:44	WG1810265
(S) o-Terphenyl	*67.5*				*18.0-148*		*01/31/2022 13:44*	WG1810265

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	89.8		1	01/28/2022 09:57	WG1809538

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	3510		105	20.0	227	10.2	01/27/2022 22:17	WG1809416

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.674	0.100	3.11	25	01/28/2022 00:11	WG1809449
(S) a,a,a-Trifluorotoluene(FID)	*89.8*				*77.0-120*		*01/28/2022 00:11*	WG1809449

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000581	0.00100	0.00124	1	01/28/2022 01:54	WG1809440
Toluene	U		0.00162	0.00500	0.00622	1	01/28/2022 01:54	WG1809440
Ethylbenzene	U		0.000916	0.00250	0.00311	1	01/28/2022 01:54	WG1809440
Total Xylenes	U		0.00109	0.00650	0.00808	1	01/28/2022 01:54	WG1809440
(S) Toluene-d8	*94.3*				*75.0-131*		*01/28/2022 01:54*	WG1809440
(S) 4-Bromofluorobenzene	*103*				*67.0-138*		*01/28/2022 01:54*	WG1809440
(S) 1,2-Dichloroethane-d4	*113*				*70.0-130*		*01/28/2022 01:54*	WG1809440

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	62.9		1.79	4.00	4.46	1	01/31/2022 14:10	WG1810265
C28-C36 Motor Oil Range	57.5		0.305	4.00	4.46	1	01/31/2022 14:10	WG1810265
(S) o-Terphenyl	*61.1*				*18.0-148*		*01/31/2022 14:10*	WG1810265

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	90.1		1	01/28/2022 09:57	WG1809538

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	1860		102	20.0	222	10	01/27/2022 22:45	WG1809416

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.663	0.100	3.06	25	01/28/2022 00:33	WG1809449
(S) a,a,a-Trifluorotoluene(FID)	*91.7*				*77.0-120*		*01/28/2022 00:33*	WG1809449

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000571	0.00100	0.00122	1	01/28/2022 02:13	WG1809440
Toluene	U		0.00159	0.00500	0.00611	1	01/28/2022 02:13	WG1809440
Ethylbenzene	U		0.000901	0.00250	0.00306	1	01/28/2022 02:13	WG1809440
Total Xylenes	U		0.00108	0.00650	0.00795	1	01/28/2022 02:13	WG1809440
(S) Toluene-d8	*95.8*				*75.0-131*		*01/28/2022 02:13*	WG1809440
(S) 4-Bromofluorobenzene	*106*				*67.0-138*		*01/28/2022 02:13*	WG1809440
(S) 1,2-Dichloroethane-d4	*116*				*70.0-130*		*01/28/2022 02:13*	WG1809440

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	94.6		1.79	4.00	4.44	1	01/31/2022 17:12	WG1810265
C28-C36 Motor Oil Range	77.1		0.304	4.00	4.44	1	01/31/2022 17:12	WG1810265
(S) o-Terphenyl	*60.2*				*18.0-148*		*01/31/2022 17:12*	WG1810265

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.2		1	01/28/2022 09:57	WG1809538

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	11.2	J	9.57	20.0	20.8	1	01/27/2022 22:55	WG1809416

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.587	0.100	2.71	25	01/28/2022 00:55	WG1809449
(S) a,a,a-Trifluorotoluene(FID)	*90.8*				*77.0-120*		*01/28/2022 00:55*	WG1809449

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000506	0.00100	0.00108	1	01/28/2022 02:32	WG1809440
Toluene	U		0.00141	0.00500	0.00541	1	01/28/2022 02:32	WG1809440
Ethylbenzene	U		0.000798	0.00250	0.00271	1	01/28/2022 02:32	WG1809440
Total Xylenes	U		0.000953	0.00650	0.00704	1	01/28/2022 02:32	WG1809440
(S) Toluene-d8	*95.4*				*75.0-131*		*01/28/2022 02:32*	WG1809440
(S) 4-Bromofluorobenzene	*103*				*67.0-138*		*01/28/2022 02:32*	WG1809440
(S) 1,2-Dichloroethane-d4	*111*				*70.0-130*		*01/28/2022 02:32*	WG1809440

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	2.66	J	1.67	4.00	4.16	1	01/31/2022 14:23	WG1810265
C28-C36 Motor Oil Range	18.1		0.285	4.00	4.16	1	01/31/2022 14:23	WG1810265
(S) o-Terphenyl	*77.2*				*18.0-148*		*01/31/2022 14:23*	WG1810265

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.3		1	01/28/2022 09:57	WG1809538

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	19.0	J	9.85	20.0	21.4	1.02	01/27/2022 23:04	WG1809416

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.598	0.100	2.75	25	01/28/2022 01:17	WG1809449
(S) a,a,a-Trifluorotoluene(FID)	*90.2*				*77.0-120*		*01/28/2022 01:17*	WG1809449

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000514	0.00100	0.00110	1	01/28/2022 02:51	WG1809440
Toluene	U		0.00143	0.00500	0.00551	1	01/28/2022 02:51	WG1809440
Ethylbenzene	U		0.000812	0.00250	0.00275	1	01/28/2022 02:51	WG1809440
Total Xylenes	U		0.000969	0.00650	0.00716	1	01/28/2022 02:51	WG1809440
(S) Toluene-d8	*94.9*				*75.0-131*		*01/28/2022 02:51*	WG1809440
(S) 4-Bromofluorobenzene	*102*				*67.0-138*		*01/28/2022 02:51*	WG1809440
(S) 1,2-Dichloroethane-d4	*112*				*70.0-130*		*01/28/2022 02:51*	WG1809440

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	3.50	J	1.69	4.00	4.20	1	01/31/2022 14:36	WG1810265
C28-C36 Motor Oil Range	9.92		0.288	4.00	4.20	1	01/31/2022 14:36	WG1810265
(S) o-Terphenyl	*64.5*				*18.0-148*		*01/31/2022 14:36*	WG1810265

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.0		1	01/28/2022 09:57	WG1809538

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	1270		101	20.0	220	10	01/27/2022 23:14	WG1809416

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.651	0.100	3.00	25	01/28/2022 01:39	WG1809449
(S) a,a,a-Trifluorotoluene(FID)	*92.0*				*77.0-120*		*01/28/2022 01:39*	WG1809449

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000560	0.00100	0.00120	1	01/28/2022 03:10	WG1809440
Toluene	U		0.00156	0.00500	0.00600	1	01/28/2022 03:10	WG1809440
Ethylbenzene	U		0.000884	0.00250	0.00300	1	01/28/2022 03:10	WG1809440
Total Xylenes	U		0.00106	0.00650	0.00780	1	01/28/2022 03:10	WG1809440
(S) Toluene-d8	*95.5*				*75.0-131*		*01/28/2022 03:10*	WG1809440
(S) 4-Bromofluorobenzene	*104*				*67.0-138*		*01/28/2022 03:10*	WG1809440
(S) 1,2-Dichloroethane-d4	*114*				*70.0-130*		*01/28/2022 03:10*	WG1809440

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	4.10	J	1.77	4.00	4.40	1	01/31/2022 14:49	WG1810265
C28-C36 Motor Oil Range	24.8		0.301	4.00	4.40	1	01/31/2022 14:49	WG1810265
(S) o-Terphenyl	*71.8*				*18.0-148*		*01/31/2022 14:49*	WG1810265

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.6		1	01/28/2022 09:57	WG1809538

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	1440		100	20.0	218	10	01/27/2022 23:23	WG1809416

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.644	0.100	2.97	25	01/28/2022 02:00	WG1809449
(S) a,a,a-Trifluorotoluene(FID)	*90.6*				*77.0-120*		*01/28/2022 02:00*	WG1809449

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000554	0.00100	0.00119	1	01/28/2022 03:29	WG1809440
Toluene	U		0.00154	0.00500	0.00593	1	01/28/2022 03:29	WG1809440
Ethylbenzene	U		0.000874	0.00250	0.00297	1	01/28/2022 03:29	WG1809440
Total Xylenes	U		0.00104	0.00650	0.00771	1	01/28/2022 03:29	WG1809440
(S) Toluene-d8	*96.3*				*75.0-131*		*01/28/2022 03:29*	WG1809440
(S) 4-Bromofluorobenzene	*103*				*67.0-138*		*01/28/2022 03:29*	WG1809440
(S) 1,2-Dichloroethane-d4	*111*				*70.0-130*		*01/28/2022 03:29*	WG1809440

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	3.47	J	1.76	4.00	4.36	1	01/31/2022 14:05	WG1810264
C28-C36 Motor Oil Range	18.4		0.299	4.00	4.36	1	01/31/2022 14:05	WG1810264
(S) o-Terphenyl	*73.4*				*18.0-148*		*01/31/2022 14:05*	WG1810264

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	87.3		1	01/28/2022 09:57	WG1809538

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	14700		1050	20.0	2290	100	01/27/2022 23:33	WG1809416

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.706	0.100	3.25	25	01/28/2022 02:22	WG1809449
(S) a,a,a-Trifluorotoluene(FID)	*90.3*				*77.0-120*		*01/28/2022 02:22*	WG1809449

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	0.000734	J	0.000608	0.00100	0.00130	1	01/28/2022 03:48	WG1809440
Toluene	0.00346	J	0.00169	0.00500	0.00651	1	01/28/2022 03:48	WG1809440
Ethylbenzene	U		0.000959	0.00250	0.00325	1	01/28/2022 03:48	WG1809440
Total Xylenes	0.00722	J	0.00115	0.00650	0.00846	1	01/28/2022 03:48	WG1809440
(S) Toluene-d8	*94.6*				*75.0-131*		*01/28/2022 03:48*	WG1809440
(S) 4-Bromofluorobenzene	*102*				*67.0-138*		*01/28/2022 03:48*	WG1809440
(S) 1,2-Dichloroethane-d4	*112*				*70.0-130*		*01/28/2022 03:48*	WG1809440

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	14.2		1.84	4.00	4.58	1	01/31/2022 17:55	WG1810264
C28-C36 Motor Oil Range	30.9		0.314	4.00	4.58	1	01/31/2022 17:55	WG1810264
(S) o-Terphenyl	*58.7*				*18.0-148*		*01/31/2022 17:55*	WG1810264

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	92.6		1	01/28/2022 09:57	WG1809538

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	5620		99.4	20.0	216	10	01/27/2022 23:43	WG1809416

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.641	0.100	2.95	25	01/28/2022 02:44	WG1809449
(S) a,a,a-Trifluorotoluene(FID)	*90.1*				*77.0-120*		*01/28/2022 02:44*	WG1809449

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000552	0.00100	0.00118	1	01/28/2022 04:07	WG1809440
Toluene	U		0.00154	0.00500	0.00591	1	01/28/2022 04:07	WG1809440
Ethylbenzene	U		0.000871	0.00250	0.00295	1	01/28/2022 04:07	WG1809440
Total Xylenes	U		0.00104	0.00650	0.00768	1	01/28/2022 04:07	WG1809440
(S) Toluene-d8	*96.9*				*75.0-131*		*01/28/2022 04:07*	WG1809440
(S) 4-Bromofluorobenzene	*103*				*67.0-138*		*01/28/2022 04:07*	WG1809440
(S) 1,2-Dichloroethane-d4	*116*				*70.0-130*		*01/28/2022 04:07*	WG1809440

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	3.58	J	1.74	4.00	4.32	1	01/31/2022 18:49	WG1810264
C28-C36 Motor Oil Range	13.8		0.296	4.00	4.32	1	01/31/2022 18:49	WG1810264
(S) o-Terphenyl	*72.4*				*18.0-148*		*01/31/2022 18:49*	WG1810264

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	89.8		1	01/28/2022 09:57	WG1809538

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	6120		107	20.0	232	10.4	01/28/2022 00:08	WG1809416

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.685	0.100	3.16	25	01/28/2022 03:06	WG1809449
(S) a,a,a-Trifluorotoluene(FID)	*90.8*				*77.0-120*		*01/28/2022 03:06*	WG1809449

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000590	0.00100	0.00126	1	01/28/2022 04:26	WG1809440
Toluene	U		0.00164	0.00500	0.00632	1	01/28/2022 04:26	WG1809440
Ethylbenzene	U		0.000931	0.00250	0.00316	1	01/28/2022 04:26	WG1809440
Total Xylenes	U		0.00111	0.00650	0.00821	1	01/28/2022 04:26	WG1809440
(S) Toluene-d8	*96.4*				*75.0-131*		*01/28/2022 04:26*	WG1809440
(S) 4-Bromofluorobenzene	*104*				*67.0-138*		*01/28/2022 04:26*	WG1809440
(S) 1,2-Dichloroethane-d4	*110*				*70.0-130*		*01/28/2022 04:26*	WG1809440

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	5.87		1.79	4.00	4.45	1	01/31/2022 18:35	WG1810264
C28-C36 Motor Oil Range	19.5		0.305	4.00	4.45	1	01/31/2022 18:35	WG1810264
(S) o-Terphenyl	*76.2*				*18.0-148*		*01/31/2022 18:35*	WG1810264

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	83.5		1	01/28/2022 09:57	WG1809538

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	5360		110	20.0	239	10	01/28/2022 00:17	WG1809416

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.926	0.100	4.27	31.5	01/28/2022 03:28	WG1809449
(S) a,a,a-Trifluorotoluene(FID)	*89.7*				*77.0-120*		*01/28/2022 03:28*	WG1809449

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000797	0.00100	0.00171	1.26	01/28/2022 04:45	WG1809440
Toluene	U		0.00222	0.00500	0.00853	1.26	01/28/2022 04:45	WG1809440
Ethylbenzene	U		0.00126	0.00250	0.00427	1.26	01/28/2022 04:45	WG1809440
Total Xylenes	U		0.00150	0.00650	0.0111	1.26	01/28/2022 04:45	WG1809440
(S) Toluene-d8	*96.0*				*75.0-131*		*01/28/2022 04:45*	WG1809440
(S) 4-Bromofluorobenzene	*104*				*67.0-138*		*01/28/2022 04:45*	WG1809440
(S) 1,2-Dichloroethane-d4	*111*				*70.0-130*		*01/28/2022 04:45*	WG1809440

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	3.35	J	1.93	4.00	4.79	1	01/31/2022 14:19	WG1810264
C28-C36 Motor Oil Range	5.68		0.328	4.00	4.79	1	01/31/2022 14:19	WG1810264
(S) o-Terphenyl	*53.2*				*18.0-148*		*01/31/2022 14:19*	WG1810264

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	84.4		1	01/28/2022 10:26	WG1809539

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	4110		109	20.0	237	10	01/28/2022 00:46	WG1809416

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.759	0.100	3.50	25	01/28/2022 03:50	WG1809449
(S) a,a,a-Trifluorotoluene(FID)	*91.1*				*77.0-120*		*01/28/2022 03:50*	WG1809449

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000653	0.00100	0.00140	1	01/28/2022 05:04	WG1809440
Toluene	U		0.00182	0.00500	0.00699	1	01/28/2022 05:04	WG1809440
Ethylbenzene	U		0.00103	0.00250	0.00350	1	01/28/2022 05:04	WG1809440
Total Xylenes	U		0.00123	0.00650	0.00909	1	01/28/2022 05:04	WG1809440
(S) Toluene-d8	*95.6*				*75.0-131*		*01/28/2022 05:04*	WG1809440
(S) 4-Bromofluorobenzene	*104*				*67.0-138*		*01/28/2022 05:04*	WG1809440
(S) 1,2-Dichloroethane-d4	*115*				*70.0-130*		*01/28/2022 05:04*	WG1809440

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	6.02		1.91	4.00	4.74	1	01/31/2022 18:08	WG1810264
C28-C36 Motor Oil Range	32.7		0.325	4.00	4.74	1	01/31/2022 18:08	WG1810264
(S) o-Terphenyl	*62.2*				*18.0-148*		*01/31/2022 18:08*	WG1810264

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	86.9		1	01/28/2022 10:26	WG1809539

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	3300		106	20.0	230	10	01/28/2022 00:55	WG1809416

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.717	0.100	3.30	25	01/28/2022 04:12	WG1809449
(S) a,a,a-Trifluorotoluene(FID)	*89.6*				*77.0-120*		*01/28/2022 04:12*	WG1809449

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	0.000706	J	0.000617	0.00100	0.00132	1	01/28/2022 05:23	WG1809440
Toluene	U		0.00172	0.00500	0.00661	1	01/28/2022 05:23	WG1809440
Ethylbenzene	U		0.000974	0.00250	0.00330	1	01/28/2022 05:23	WG1809440
Total Xylenes	U		0.00116	0.00650	0.00859	1	01/28/2022 05:23	WG1809440
(S) Toluene-d8	*95.4*				*75.0-131*		*01/28/2022 05:23*	WG1809440
(S) 4-Bromofluorobenzene	*103*				*67.0-138*		*01/28/2022 05:23*	WG1809440
(S) 1,2-Dichloroethane-d4	*111*				*70.0-130*		*01/28/2022 05:23*	WG1809440

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	2.94	J	1.85	4.00	4.60	1	01/31/2022 14:32	WG1810264
C28-C36 Motor Oil Range	11.9		0.315	4.00	4.60	1	01/31/2022 14:32	WG1810264
(S) o-Terphenyl	*72.5*				*18.0-148*		*01/31/2022 14:32*	WG1810264

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	86.3		1	01/28/2022 10:26	WG1809539

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	1160		53.3	20.0	116	5	01/28/2022 01:05	WG1809416

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.717	0.100	3.31	25	01/28/2022 04:34	WG1809449
(S) a,a,a-Trifluorotoluene(FID)	*90.4*				*77.0-120*		*01/28/2022 04:34*	WG1809449

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000617	0.00100	0.00132	1	01/28/2022 05:42	WG1809440
Toluene	U		0.00172	0.00500	0.00661	1	01/28/2022 05:42	WG1809440
Ethylbenzene	U		0.000974	0.00250	0.00331	1	01/28/2022 05:42	WG1809440
Total Xylenes	U		0.00116	0.00650	0.00859	1	01/28/2022 05:42	WG1809440
(S) Toluene-d8	*96.3*				*75.0-131*		*01/28/2022 05:42*	WG1809440
(S) 4-Bromofluorobenzene	*104*				*67.0-138*		*01/28/2022 05:42*	WG1809440
(S) 1,2-Dichloroethane-d4	*113*				*70.0-130*		*01/28/2022 05:42*	WG1809440

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U		1.87	4.00	4.64	1	01/31/2022 14:46	WG1810264
C28-C36 Motor Oil Range	6.14		0.318	4.00	4.64	1	01/31/2022 14:46	WG1810264
(S) o-Terphenyl	*62.6*				*18.0-148*		*01/31/2022 14:46*	WG1810264

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	86.3		1	01/28/2022 10:26	WG1809539

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	751		10.8	20.0	23.4	1.01	01/28/2022 01:14	WG1809416

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.753	0.100	3.47	26.5	01/28/2022 04:56	WG1809449
(S) a,a,a-Trifluorotoluene(FID)	*90.6*				*77.0-120*		*01/28/2022 04:56*	WG1809449

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000648	0.00100	0.00139	1.06	01/28/2022 06:01	WG1809440
Toluene	U		0.00180	0.00500	0.00694	1.06	01/28/2022 06:01	WG1809440
Ethylbenzene	U		0.00102	0.00250	0.00347	1.06	01/28/2022 06:01	WG1809440
Total Xylenes	U		0.00122	0.00650	0.00902	1.06	01/28/2022 06:01	WG1809440
(S) Toluene-d8	*95.4*				*75.0-131*		*01/28/2022 06:01*	WG1809440
(S) 4-Bromofluorobenzene	*101*				*67.0-138*		*01/28/2022 06:01*	WG1809440
(S) 1,2-Dichloroethane-d4	*115*				*70.0-130*		*01/28/2022 06:01*	WG1809440

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	2.97	J	1.87	4.00	4.64	1	01/31/2022 14:59	WG1810264
C28-C36 Motor Oil Range	7.78		0.318	4.00	4.64	1	01/31/2022 14:59	WG1810264
(S) o-Terphenyl	*75.3*				*18.0-148*		*01/31/2022 14:59*	WG1810264

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	88.3		1	01/28/2022 10:26	WG1809539

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	39.7		10.6	20.0	23.1	1.02	01/28/2022 01:24	WG1809416

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.785	0.100	3.62	29	01/28/2022 05:18	WG1809449
(S) a,a,a-Trifluorotoluene(FID)	*90.6*				*77.0-120*		*01/28/2022 05:18*	WG1809449

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000676	0.00100	0.00145	1.16	01/28/2022 06:20	WG1809440
Toluene	U		0.00188	0.00500	0.00723	1.16	01/28/2022 06:20	WG1809440
Ethylbenzene	U		0.00107	0.00250	0.00362	1.16	01/28/2022 06:20	WG1809440
Total Xylenes	U		0.00127	0.00650	0.00940	1.16	01/28/2022 06:20	WG1809440
(S) Toluene-d8	*95.7*				*75.0-131*		*01/28/2022 06:20*	WG1809440
(S) 4-Bromofluorobenzene	*102*				*67.0-138*		*01/28/2022 06:20*	WG1809440
(S) 1,2-Dichloroethane-d4	*115*				*70.0-130*		*01/28/2022 06:20*	WG1809440

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	2.15	J	1.82	4.00	4.53	1	01/31/2022 15:13	WG1810264
C28-C36 Motor Oil Range	12.0		0.310	4.00	4.53	1	01/31/2022 15:13	WG1810264
(S) o-Terphenyl	*67.9*				*18.0-148*		*01/31/2022 15:13*	WG1810264

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	88.8		1	01/28/2022 10:26	WG1809539

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	46.4		10.8	20.0	23.4	1.04	01/28/2022 01:33	WG1809416

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.687	0.100	3.17	25.3	01/28/2022 05:40	WG1809449
(S) a,a,a-Trifluorotoluene(FID)	*89.6*				*77.0-120*		*01/28/2022 05:40*	WG1809449

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000591	0.00100	0.00126	1.01	01/28/2022 06:39	WG1809440
Toluene	U		0.00164	0.00500	0.00632	1.01	01/28/2022 06:39	WG1809440
Ethylbenzene	U		0.000932	0.00250	0.00317	1.01	01/28/2022 06:39	WG1809440
Total Xylenes	U		0.00111	0.00650	0.00821	1.01	01/28/2022 06:39	WG1809440
(S) Toluene-d8	*95.5*				*75.0-131*		*01/28/2022 06:39*	WG1809440
(S) 4-Bromofluorobenzene	*103*				*67.0-138*		*01/28/2022 06:39*	WG1809440
(S) 1,2-Dichloroethane-d4	*111*				*70.0-130*		*01/28/2022 06:39*	WG1809440

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	3.04	J	1.81	4.00	4.51	1	01/31/2022 15:26	WG1810264
C28-C36 Motor Oil Range	19.2		0.309	4.00	4.51	1	01/31/2022 15:26	WG1810264
(S) o-Terphenyl	*74.7*				*18.0-148*		*01/31/2022 15:26*	WG1810264

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	86.3		1	01/28/2022 10:26	WG1809539

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	5980		107	20.0	232	10	01/28/2022 02:40	WG1809423

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	0.899	J	0.752	0.100	3.47	26.5	01/28/2022 02:39	WG1809503
(S) a,a,a-Trifluorotoluene(FID)	*107*				*77.0-120*		*01/28/2022 02:39*	WG1809503

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000648	0.00100	0.00139	1.06	01/28/2022 06:07	WG1809490
Toluene	U		0.00180	0.00500	0.00693	1.06	01/28/2022 06:07	WG1809490
Ethylbenzene	U		0.00102	0.00250	0.00347	1.06	01/28/2022 06:07	WG1809490
Total Xylenes	0.00271	J	0.00122	0.00650	0.00901	1.06	01/28/2022 06:07	WG1809490
(S) Toluene-d8	*100*				*75.0-131*		*01/28/2022 06:07*	WG1809490
(S) 4-Bromofluorobenzene	*92.0*				*67.0-138*		*01/28/2022 06:07*	WG1809490
(S) 1,2-Dichloroethane-d4	*101*				*70.0-130*		*01/28/2022 06:07*	WG1809490

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	2.47	J	1.87	4.00	4.64	1	01/31/2022 16:07	WG1810264
C28-C36 Motor Oil Range	11.6		0.317	4.00	4.64	1	01/31/2022 16:07	WG1810264
(S) o-Terphenyl	*61.9*				*18.0-148*		*01/31/2022 16:07*	WG1810264

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	85.8		1	01/28/2022 10:26	WG1809539

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	4740	V	107	20.0	233	10	01/28/2022 02:50	WG1809423

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.760	0.100	3.50	26.5	01/28/2022 03:02	WG1809503
(S) a,a,a-Trifluorotoluene(FID)	*108*				*77.0-120*		*01/28/2022 03:02*	WG1809503

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000654	0.00100	0.00140	1.06	01/28/2022 04:29	WG1809491
Toluene	U		0.00182	0.00500	0.00700	1.06	01/28/2022 04:29	WG1809491
Ethylbenzene	U		0.00103	0.00250	0.00350	1.06	01/28/2022 04:29	WG1809491
Total Xylenes	0.00157	J	0.00123	0.00650	0.00910	1.06	01/28/2022 04:29	WG1809491
(S) Toluene-d8	*97.6*				*75.0-131*		*01/28/2022 04:29*	WG1809491
(S) 4-Bromofluorobenzene	*101*				*67.0-138*		*01/28/2022 04:29*	WG1809491
(S) 1,2-Dichloroethane-d4	*116*				*70.0-130*		*01/28/2022 04:29*	WG1809491

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	3.38	J	1.88	4.00	4.66	1	01/31/2022 16:20	WG1810264
C28-C36 Motor Oil Range	15.7		0.319	4.00	4.66	1	01/31/2022 16:20	WG1810264
(S) o-Terphenyl	*79.8*				*18.0-148*		*01/31/2022 16:20*	WG1810264

TRIP BLANK
Collected date/time: 01/25/22 00:00
L1455251

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	U		0.0000941	0.00100	0.00100	1	01/27/2022 15:43	WG1809290
Toluene	U		0.000278	0.00100	0.00100	1	01/27/2022 15:43	WG1809290
Ethylbenzene	U		0.000137	0.00100	0.00100	1	01/27/2022 15:43	WG1809290
Total Xylenes	U		0.000174	0.00300	0.00300	1	01/27/2022 15:43	WG1809290
(S) Toluene-d8	*96.7*				*80.0-120*		*01/27/2022 15:43*	WG1809290
(S) 4-Bromofluorobenzene	*99.4*				*77.0-126*		*01/27/2022 15:43*	WG1809290
(S) 1,2-Dichloroethane-d4	*122*				*70.0-130*		*01/27/2022 15:43*	WG1809290

Method Blank (MB)

(MB) R3754706-1 01/28/22 07:11

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00100			

L1455251-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1455251-06 01/28/22 07:11 • (DUP) R3754706-3 01/28/22 07:11

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	94.1	92.8	1	1.34		10

Laboratory Control Sample (LCS)

(LCS) R3754706-2 01/28/22 07:11

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3754835-1 01/28/22 09:57

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00100			

L1455251-25 Original Sample (OS) • Duplicate (DUP)

(OS) L1455251-25 01/28/22 09:57 • (DUP) R3754835-3 01/28/22 09:57

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	83.5	83.4	1	0.0977		10

Laboratory Control Sample (LCS)

(LCS) R3754835-2 01/28/22 09:57

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3754836-1 01/28/22 10:26

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.000			

L1454978-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1454978-01 01/28/22 10:26 • (DUP) R3754836-3 01/28/22 10:26

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	70.7	70.3	1	0.550		10

Laboratory Control Sample (LCS)

(LCS) R3754836-2 01/28/22 10:26

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3754647-1 01/27/22 19:32

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	U		9.20	20.0

L1455251-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1455251-02 01/27/22 21:20 • (DUP) R3754647-3 01/27/22 21:29

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	162	160	1	0.740		20

L1455251-23 Original Sample (OS) • Duplicate (DUP)

(OS) L1455251-23 01/27/22 23:43 • (DUP) R3754647-6 01/27/22 23:59

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	5620	5060	10	10.5		20

Laboratory Control Sample (LCS)

(LCS) R3754647-2 01/27/22 19:41

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	200	196	98.0	90.0-110	

L1455251-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1455251-02 01/27/22 21:20 • (MS) R3754647-4 01/27/22 21:39 • (MSD) R3754647-5 01/27/22 21:48

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	528	162	664	649	95.1	92.3	1	80.0-120			2.29	20

Method Blank (MB)

(MB) R3754648-1 01/28/22 02:02

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	U		9.20	20.0

L1455251-36 Original Sample (OS) • Duplicate (DUP)

(OS) L1455251-36 01/28/22 02:50 • (DUP) R3754648-3 01/28/22 02:59

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	4740	4690	10	1.10		20

L1455262-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1455262-12 01/28/22 05:12 • (DUP) R3754648-6 01/28/22 05:22

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	10.1	11.5	1	13.3	J	20

Laboratory Control Sample (LCS)

(LCS) R3754648-2 01/28/22 02:11

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	200	199	99.7	90.0-110	

L1455251-36 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1455251-36 01/28/22 02:50 • (MS) R3754648-4 01/28/22 03:09 • (MSD) R3754648-5 01/28/22 03:18

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	583	4740	5210	5350	79.9	104	10	80.0-120	V		2.65	20

Method Blank (MB)

(MB) R3754565-2 01/27/22 20:17

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.543	2.50
(S) a,a,a-Trifluorotoluene(FID)	*93.9*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3754565-1 01/27/22 19:17

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.99	90.7	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*116*	*77.0-120*	

L1455251-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1455251-01 01/27/22 22:43 • (MS) R3754565-3 01/28/22 06:02 • (MSD) R3754565-4 01/28/22 06:24

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	155	U	139	139	89.5	89.5	26	10.0-151			0.000	28
(S) a,a,a-Trifluorotoluene(FID)					*110*	*111*		*77.0-120*				

Method Blank (MB)

(MB) R3755223-2 01/28/22 01:56

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.543	2.50
(S) a,a,a-Trifluorotoluene(FID)	*107*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3755223-1 01/28/22 00:30

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.35	97.3	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*101*	*77.0-120*	

Method Blank (MB)

(MB) R3755036-3 01/27/22 12:03

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000941	0.00100
Ethylbenzene	U		0.000137	0.00100
Toluene	U		0.000278	0.00100
Xylenes, Total	U		0.000174	0.00300
(S) Toluene-d8	*96.9*			*80.0-120*
(S) 4-Bromofluorobenzene	*98.4*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*120*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3755036-1 01/27/22 10:29 • (LCSD) R3755036-2 01/27/22 10:48

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.00500	0.00452	0.00452	90.4	90.4	70.0-123			0.000	20
Ethylbenzene	0.00500	0.00453	0.00444	90.6	88.8	79.0-123			2.01	20
Toluene	0.00500	0.00440	0.00430	88.0	86.0	79.0-120			2.30	20
Xylenes, Total	0.0150	0.0133	0.0131	88.7	87.3	79.0-123			1.52	20
(S) Toluene-d8				*94.9*	*96.3*	*80.0-120*				
(S) 4-Bromofluorobenzene				*99.2*	*100*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*117*	*118*	*70.0-130*				

Method Blank (MB)

(MB) R3754678-3 01/28/22 00:19

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*94.7*			*75.0-131*
(S) 4-Bromofluorobenzene	*103*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*119*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3754678-1 01/27/22 23:03 • (LCSD) R3754678-2 01/27/22 23:23

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.135	0.123	108	98.4	70.0-123			9.30	20
Ethylbenzene	0.125	0.118	0.107	94.4	85.6	74.0-126			9.78	20
Toluene	0.125	0.120	0.108	96.0	86.4	75.0-121			10.5	20
Xylenes, Total	0.375	0.347	0.317	92.5	84.5	72.0-127			9.04	20
(S) Toluene-d8				*92.8*	*92.3*	*75.0-131*				
(S) 4-Bromofluorobenzene				*102*	*103*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*128*	*124*	*70.0-130*				

L1455251-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1455251-01 01/28/22 00:38 • (MS) R3754678-4 01/28/22 06:58 • (MSD) R3754678-5 01/28/22 07:17

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.141	U	0.120	0.126	85.4	89.2	1.04	10.0-149			4.41	37
Ethylbenzene	0.141	U	0.116	0.116	82.3	82.3	1.04	10.0-160			0.000	38
Toluene	0.141	U	0.114	0.115	80.8	81.5	1.04	10.0-156			0.948	38
Xylenes, Total	0.423	U	0.335	0.341	79.2	80.5	1.04	10.0-160			1.61	38
(S) Toluene-d8					*93.8*	*93.7*		*75.0-131*				
(S) 4-Bromofluorobenzene					*103*	*102*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*115*	*118*		*70.0-130*				

Method Blank (MB)

(MB) R3754405-3 01/27/22 23:00

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*104*			*75.0-131*
(S) 4-Bromofluorobenzene	*93.3*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*97.0*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3754405-1 01/27/22 21:25 • (LCSD) R3754405-2 01/27/22 21:44

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.128	0.128	102	102	70.0-123			0.000	20
Ethylbenzene	0.125	0.123	0.123	98.4	98.4	74.0-126			0.000	20
Toluene	0.125	0.125	0.125	100	100	75.0-121			0.000	20
Xylenes, Total	0.375	0.361	0.356	96.3	94.9	72.0-127			1.39	20
(S) Toluene-d8				*101*	*102*	*75.0-131*				
(S) 4-Bromofluorobenzene				*96.3*	*93.3*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*113*	*109*	*70.0-130*				

L1455205-41 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1455205-41 01/28/22 01:40 • (MS) R3754405-4 01/28/22 06:26 • (MSD) R3754405-5 01/28/22 06:45

Analyte	Spike Amount (dry) mg/kg	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	U	0.168	0.147	96.8	84.8	1	10.0-149			13.2	37
Ethylbenzene	0.125	U	0.177	0.157	102	90.4	1	10.0-160			11.7	38
Toluene	0.125	U	0.171	0.149	98.4	85.6	1	10.0-156			13.9	38
Xylenes, Total	0.375	U	0.518	0.451	99.2	86.4	1	10.0-160			13.8	38
(S) Toluene-d8					*102*	*101*		*75.0-131*				
(S) 4-Bromofluorobenzene					*94.3*	*92.0*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*98.5*	*97.2*		*70.0-130*				

Method Blank (MB)

(MB) R3755032-3 01/27/22 23:16

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*99.4*			*75.0-131*
(S) 4-Bromofluorobenzene	*97.1*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*118*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3755032-1 01/27/22 22:00 • (LCSD) R3755032-2 01/27/22 22:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.126	0.122	101	97.6	70.0-123			3.23	20
Ethylbenzene	0.125	0.119	0.112	95.2	89.6	74.0-126			6.06	20
Toluene	0.125	0.118	0.115	94.4	92.0	75.0-121			2.58	20
Xylenes, Total	0.375	0.353	0.334	94.1	89.1	72.0-127			5.53	20
(S) Toluene-d8				*97.2*	*96.9*	*75.0-131*				
(S) 4-Bromofluorobenzene				*97.9*	*99.2*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*122*	*122*	*70.0-130*				

Method Blank (MB)

(MB) R3755468-1 01/31/22 13:38

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	*69.4*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3755468-2 01/31/22 13:52

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	38.3	76.6	50.0-150	
(S) o-Terphenyl			*87.5*	*18.0-148*	

L1455251-32 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1455251-32 01/31/22 15:26 • (MS) R3755468-3 01/31/22 15:40 • (MSD) R3755468-4 01/31/22 15:53

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	54.6	3.04	45.0	40.9	76.7	69.7	1	50.0-150			9.45	20
(S) o-Terphenyl					*79.6*	*73.8*		*18.0-148*				

Method Blank (MB)

(MB) R3755475-1 01/31/22 12:13

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	*75.2*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3755475-2 01/31/22 12:26

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	43.4	86.8	50.0-150	
(S) o-Terphenyl			*86.2*	*18.0-148*	

L1455251-18 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1455251-18 01/31/22 14:23 • (MS) R3755475-3 01/31/22 15:41 • (MSD) R3755475-4 01/31/22 15:54

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	50.7	2.66	43.8	45.1	81.0	85.1	1	50.0-150			3.04	20
(S) o-Terphenyl					*86.5*	*88.0*		*18.0-148*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MQL (dry)	Method Quantitation Limit.
MQL	Method Quantitation Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
SDL	Sample Detection Limit.
SDL (dry)	Sample Detection Limit.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Sample Detection Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
V	The sample concentration is too high to evaluate accurate spike recoveries.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
Altamira - Angleton, TX
4001 Technology Drive, Ste 120
Angleton, TX 77515

Billing Information:
Bryan Haney
4001 Technology Drive, Ste 120
Angleton, TX 77515

Pres Chk

Analysis / Container / Preservative

Chain of Custody

Pace PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

Report to: **Bryan Haney**

Email To: bryan.haney@altamira-us.com;Orlando.Gonzalez@Altamira-us.com

Project Description: CULEBRA BLUFF Novo ~~Ovation Pad O Release~~

City/State Collected: LOVING, NM

Please Circle: PT (MT) (CT) ET

Phone: 361-658-3126

Client Project #: NVONM2103 PHASE 001

Lab Project #: ALTAMIRAATX-NOVO

Collected by (print): BH/OG

Site/Facility ID #: CULEBRA BLUFF

P.O. #: —

Collected by (signature): [signature]

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
X Three Day

Quote #: —

Date Results Needed

Immediately Packed on Ice N ___ Y ✓

SDG # 1455251
G075

Acctnum: ALTAMIRAATX
Template: T201884
Prelogin: P900101
PM: 134 - Mark W. Beasley
PB: 1/20/22 [illegible]
Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4ozClr-NoPres	DRONM 4ozClr-NoPres	GRO 40mlAmb/MeOH10ml/Syr	V8260BTEX 40mlAmb/MeOH10ml/Syr						Remarks	Sample # (lab only)
SB-1 (0-1')	G	SS	0-1'	1/25/22	957	2	X	X	X	X							01
SB-1 (2-3')	G	SS	2-3'	1/25/22	1004	2	X	X	X	X							02
SB-1 (3-4')	G	SS	3-4'	1/25/22	1006	2											03
SB-1 (5-6')	G	SS	5-6'	1/25/22	1008	2											04
SB-1 (9-10')	G	SS	9-10'	1/25/22	1015	2											05
		SS															
		SS															
		SS															
		SS															

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other ___

Remarks: DEEPER SAMPLES ON HOLD PENDING

pH ___ Temp ___
Flow ___ Other ___

Samples returned via: ___ UPS X FedEx ___ Courier ___

Tracking # 5489 4019 3820

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: ✓Y __N
RAD Screen <0.5 mR/hr: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: (Yes) / No HCL / MeoH TBR	
[signature]	1/26/2022	1630		2	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: NSA6 2.6+0=2.6 °C Bottles Received: 16	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Veronica Sistrunk	Date: 1/27/22 Time: 0900	Hold: Condition: NCF / (OK)

Company Name/Address:
Altamira - Angleton, TX
4001 Technology Drive, Ste 120
Angleton, TX 77515

Billing Information:
Bryan Haney
4001 Technology Drive, Ste 120
Angleton, TX 77515

Pres Chk

Report to: **Bryan Haney**

Email To: bryan.haney@altamira-us.com;Orlando.Gonzalez@Altamira-us.com

Project Description: Novo ~~Ovation Pad O Release~~ CULEBRA BLUFF

City/State Collected: LOVING, NM

Please Circle: PT (MT) CT ET

Phone: 361-658-3126

Client Project # NVONM2103 PHASE 001

Lab Project # ALTAMIRAATX-NOVO

Collected by (print): BH / OG

Site/Facility ID # CULEBRA BLUFF

P.O. # —

Collected by (signature): [signature]

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
X Three Day

Quote # —

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4ozClr-NoPres	DRONM 4ozClr-NoPres	GRO 40mlAmb/MeOH10ml/Syr	V8260BTEX 40mlAmb/MeOH10ml/Syr	Remarks	Sample # (lab only)
SB-2 (0-1')	G	SS	0-1'	1/25/22	1111	2	X	X	X	X		06
SB-2 (2-3')	G	SS	2-3'	1/25/22	1119	2	X	X	X	X		07
SB-2 (3-4')	G	SS	3-4'	1/25/22	1121	2						08
SB-2 (4-5')	G	SS	4-5'	1/25/22	1123	2						09
SB-2 (6-7')	G	SS	6-7'	1/25/22	1129	2						10
SB-2 (8-9')	G	SS	8-9'	1/25/22	1133	2						11
SB-2 (9-10')	G	SS	9-10'	1/25/22	1135	2						12
SB-2 (14-15')	G	SS	14-15'	1/25/22	1140	2						13
		SS										
		SS										

Analysis / Container / Preservative

Chain of Custody

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # 145525 1

Table #

Acctnum: ALTAMIRAATX

Template: T201884

Prelogin: P900101

PM: 134 - Mark W. Beasley

PB: [illegible]

Shipped Via: FedEX Ground

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: DESPOSAL SAMPLES PENDING ANALYSIS

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS ✓ FedEx __ Courier _____

Tracking # 5489 4019 3820

Sample Receipt Checklist
COC Seal Present/Intact: NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: ✓Y __N
RAD Screen <0.5 mR/hr: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: (Yes) No HCL / MeoH TBR	If preservation required by Login: Date/Time
[signature]	1/26/2022	1630		2	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: NSA 6 2.6+0=2.6 TK	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 1/27/22 Time: 0900	Hold: Condition: NCF / (OK)

Company Name/Address:
Altamira - Angleton, TX
4001 Technology Drive, Ste 120
Angleton, TX 77515

Billing Information:
Bryan Haney
4001 Technology Drive, Ste 120
Angleton, TX 77515

Pres Chk

Report to: **Bryan Haney**

Email To: bryan.haney@altamira-us.com;Orlando.Gonzalez@Altamira-us.com

Project Description: Novo ~~Ovation Pad O Release~~ CULEBRA BLUFF

City/State Collected: LOVING, NM

Please Circle: PT (MT) CT ET

Phone: 361-658-3126

Client Project # NVONM2104 PHASE 001

Lab Project # ALTAMIRAATX-NOVO

Collected by (print): OG/BH

Site/Facility ID # CULEBRA BLUFF

P.O. # —

Collected by (signature): BM MM

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
X Three Day

Quote # —

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

Chain of Custody

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # 145251

Table #

Acctnum: ALTAMIRAATX

Template: T201884

Prelogin: P900101

PM: 134 - Mark W. Beasley

PB: 1/20/22 tod

Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4ozClr-NoPres	DRONM 4ozClr-NoPres	GRO 40mlAmb/MeOH10ml/Syr	V8260BTEX 40mlAmb/MeOH10ml/Syr	Remarks	Sample # (lab only)
SB-3 (0-1')	G	SS	0-1'	1/25/22	1330	2	X	X	X	X		14
SB-3 (1-2')	G	SS	1-2'	1/25/22	1333	2	X	X	X	X		15
SB-3 (2-3')	G	SS	2-3'	1/25/22	1337	2						16
SB-3 (3-4')	G	SS	3-4'	1/25/22	1342	2						17
SB-4 (0-1')	G	SS	0-1'	1/25/22	1410	2	X	X	X	X		18
SB-4 (1-2')	G	SS	1-2'	1/25/22	1415	2	X	X	X	X		19
SB-6 (0-1')	G	SS	0-1'	1/25/22	1426	2	X	X	X	X		20
SB-6 (1-2')	G	SS	1-2'	1/25/22	1432	2	X	X	X	X		~~2221~~
SB-8 (0-1')	G	SS	0-1'	1/25/22	1445	2	X	X	X	X		2322
		SS										

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: DEEPER SAMPLES ON HOLD PENDING

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking # 5489 4019 3820

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: ✓Y __N
RAD Screen <0.5 mR/hr: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: (Yes) No HCL / MeoH TBR	If preservation required by Login: Date/Time
BM MM	1/26/2022	1630		2	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: NSAG 2.6+0=2.6 24	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Veronica Sistrunk	Date: 1/27/22 Time: 0900	Hold: Condition: NCF / (OK)

Company Name/Address:
Altamira - Angleton, TX
4001 Technology Drive, Ste 120
Angleton, TX 77515

Billing Information:
Bryan Haney
4001 Technology Drive, Ste 120
Angleton, TX 77515

Pres Chk

Analysis / Container / Preservative

Chain of Custody

Pace® PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

Report to: Bryan Haney

Email To: bryan.haney@altamira-us.com;Orlando.Gonzalez@Altamira-us.com

Project Description: Novo ~~Ovation Pad O Release~~ CULEBRA BLUFF

City/State Collected: LOVING, NM

Please Circle: PT (MT) CT ET

Phone: 361-658-3126

Client Project #: NVONM2103 PHASE 001

Lab Project #: ALTAMIRAATX-NOVO

Collected by (print): OG/BH

Site/Facility ID #: CULEBRA BLUFF

P.O. #: —

Collected by (signature): [signature]

Quote #

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
X Three Day

Date Results Needed

Immediately Packed on Ice N ___ Y ✓

SDG # 1455251
Table #
Acctnum: ALTAMIRAATX
Template: T201884
Prelogin: P900101
PM: 134 - Mark W. Beasley
PB: 1/20/22 TDD
Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4ozClr-NoPres	DRONM 4ozClr-NoPres	GRO 40mlAmb/MeOH10ml/Syr	V8260BTEX 40mlAmb/MeOH10ml/Syr	Remarks	Sample # (lab only)
SB-5 (0-1')	G	SS	0-1'	1/25/22	1457	2	X	X	X	X		~~24~~ 23
SB-5 (1-1.5')	G	SS	1-1.5'	1/25/22	1505	2	X	X	X	X		~~25~~ 24
SB-9 (0-1')	G	SS	0-1'	1/25/22	1523	2	X	X	X	X		~~26~~ 25
SB-9 (1-2')	G	SS	1-2'	1/25/22	1526	2	X	X	X	X		~~27~~ 26
SB-9 (2-2.5')	G	SS	2-2.5'	1/25/22	1529	2						~~28~~ 27
SB-7 (0-1')	G	SS	0-1'	1/25/22	1558	2	X	X	X	X		~~29~~ 28
SB-7 (1-2')	G	SS	1-2'	1/25/22	1601	2	X	X	X	X		~~30~~ 29
SB-7 (2-2.5')	G	SS	2-2.5'	1/25/22	1603	2						~~31~~ 30
		SS										
		SS										

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other ________

Remarks: DEEPER SAMPLES ON HOLD PENDING

pH ______ Temp ______
Flow ______ Other ______

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Samples returned via: __ UPS __ FedEx ✓ Courier ________

Tracking # 5489 4019 3820

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: (Yes) / No HCL / MeoH TBR	
[signature]	1/26/2022	1630		2	
Relinquished by : (Signature)	**Date:**	**Time:**	**Received by: (Signature)**	**Temp: °C** NSA626 + 0 = 2.6 **Bottles Received:** 76	**If preservation required by Login: Date/Time**
Relinquished by : (Signature)	**Date:**	**Time:**	**Received for lab by: (Signature)**	**Date:** 1/27/22 **Time:** 0900	**Hold:** **Condition:** NCF / (OK)
			[signature]		

Company Name/Address:
Altamira - Angleton, TX
4001 Technology Drive, Ste 120
Angleton, TX 77515

Billing Information:
Bryan Haney
4001 Technology Drive, Ste 120
Angleton, TX 77515

Pres Chk

Report to: **Bryan Haney**

Email To: **bryan.haney@altamira-us.com;Orlando.Gonzalez@Altamira-us.com**

Project Description: Novo ~~Ovation Pad O Release~~ CULEBRA BLUFF

City/State Collected: LOVING, NM

Please Circle: PT (MT) CT ET

Phone: **361-658-3126**

Client Project # **NVONM2103 PHASE 001**

Lab Project # **ALTAMIRAATX-NOVO**

Collected by (print): OG/BH

Site/Facility ID # CULEBRA BLUFF

P.O. # —

Collected by (signature): BM

Immediately Packed on Ice N ___ Y ___

Rush? (Lab MUST be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
X Three Day

Quote # —

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4ozClr-NoPres	DRONM 4ozClr-NoPres	GRO 40mlAmb/MeOH10ml/Syr	V8260BTEX 40mlAmb/MeOH10ml/Syr	Remarks	Sample # (lab only)
SB-10 (0-1')	G	SS	0-1'	1/25/22	1612	2	X	X	X	X		31
SB-10 (1-2')	G	SS	1-2'	1/25/22	1615	2	X	X	X	X		32
SB-10 (2-3')	G	SS	2-3'	1/25/22	1619	2						33
SB-10 (3-4')	G	SS	3-4'	1/25/22	1623	2						34
SB-11 (0-1')	G	SS	0-1'	1/25/22	1631	2	X	X	X	X		35
SB-11 (1-2')	G	SS	1-2'	1/25/22	1633	2	X	X	X	X		36
SB-11 (2-3')	G	SS	2-3'	1/25/22	1636	2						37
SB-11 (3-4')	G	SS	3-4'	1/25/22	1640	2						38
		SS										
		SS										

Chain of Custody

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # 145525 1

Table #

Acctnum: **ALTAMIRAATX**

Template: **T201884**

Prelogin: **P900101**

PM: **134 - Mark W. Beasley**

PB: 1/20/22 tdd

Shipped Via: **FedEX Ground**

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: DEEPER SAMPLES ON HOLD PENDING

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS X FedEx __ Courier _____

Tracking # 5489 4019 3820

Sample Receipt Checklist
COC Seal Present/Intact: __NP X Y __N
COC Signed/Accurate: X Y __N
Bottles arrive intact: X Y __N
Correct bottles used: X Y __N
Sufficient volume sent: X Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: X Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: (Yes) No HCL / MeoH TBR	If preservation required by Login: Date/Time
BM	1/26/2022	1630		2	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	
				NSA 6.2 6+0=2.6 76	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / (OK)
			Veronica Jestrabek	1/27/22 0900	

Pace Analytical®

ANALYTICAL REPORT

February 01, 2022

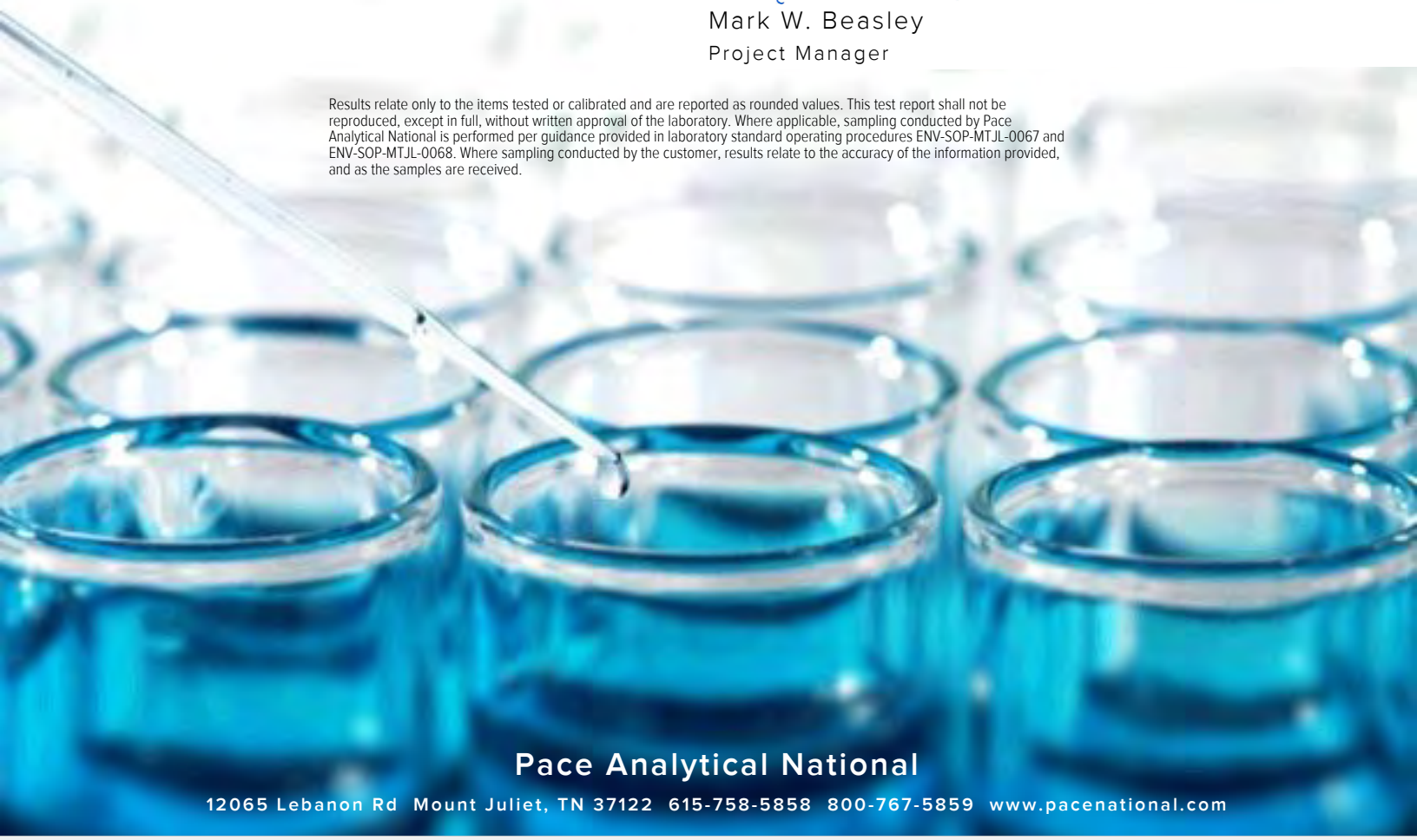
Altamira - Angleton, TX

Sample Delivery Group:	L1455262
Samples Received:	01/27/2022
Project Number:	NVONM2103 PHASE 001
Description:	Novo Culebra Bluff
Site:	CULEBRA BLUFF
Report To:	Bryan Haney 4001 Technology Drive, Ste 120 Angleton, TX 77515

Entire Report Reviewed By:

Mark W. Beasley
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

SB-13(0-1') L1455262-01 Solid

Collected by: BH/OG | Collected date/time: 01/26/22 08:41 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809215	1	01/28/22 11:14	01/28/22 11:29	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809423	1.01	01/27/22 22:30	01/28/22 03:28	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809503	33.5	01/26/22 08:41	01/28/22 03:25	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809491	1.34	01/26/22 08:41	01/28/22 04:48	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810264	1	01/31/22 08:11	01/31/22 16:34	TJD	Mt. Juliet, TN

SB-13(1-2') L1455262-02 Solid

Collected by: BH/OG | Collected date/time: 01/26/22 08:44 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809215	1	01/28/22 11:14	01/28/22 11:29	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809423	1	01/27/22 22:30	01/28/22 03:56	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809503	26.8	01/26/22 08:44	01/28/22 03:48	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809491	1.07	01/26/22 08:44	01/28/22 05:07	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810264	1	01/31/22 08:11	01/31/22 17:28	TJD	Mt. Juliet, TN

SB-12(0-1') L1455262-05 Solid

Collected by: BH/OG | Collected date/time: 01/26/22 08:59 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809215	1	01/28/22 11:14	01/28/22 11:29	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809423	10	01/27/22 22:30	01/28/22 04:06	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809503	25.8	01/26/22 08:59	01/28/22 04:12	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809491	1.03	01/26/22 08:59	01/28/22 05:26	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810264	1	01/31/22 08:11	01/31/22 17:41	TJD	Mt. Juliet, TN

SB-15(0-1') L1455262-06 Solid

Collected by: BH/OG | Collected date/time: 01/26/22 09:14 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809215	1	01/28/22 11:14	01/28/22 11:29	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809423	1	01/27/22 22:30	01/28/22 04:15	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809503	25	01/26/22 09:14	01/28/22 04:35	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809491	1	01/26/22 09:14	01/28/22 05:45	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810264	1	01/31/22 08:11	01/31/22 16:47	TJD	Mt. Juliet, TN

SB-15(1-2') L1455262-07 Solid

Collected by: BH/OG | Collected date/time: 01/26/22 09:17 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809215	1	01/28/22 11:14	01/28/22 11:29	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809423	1	01/27/22 22:30	01/28/22 04:25	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809503	25	01/26/22 09:17	01/28/22 04:58	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809491	1	01/26/22 09:17	01/28/22 06:04	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810264	1	01/31/22 08:11	01/31/22 17:01	TJD	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Tr
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

SB-16(0-1') L1455262-08 Solid

Collected by: BH/OG | Collected date/time: 01/26/22 09:27 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809215	1	01/28/22 11:14	01/28/22 11:29	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809423	1.03	01/27/22 22:30	01/28/22 04:34	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809503	25	01/26/22 09:27	01/28/22 05:21	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809492	1	01/26/22 09:27	01/27/22 23:53	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810264	1	01/31/22 08:11	01/31/22 18:22	TJD	Mt. Juliet, TN

SB-14(0-1') L1455262-09 Solid

Collected by: BH/OG | Collected date/time: 01/26/22 09:35 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809215	1	01/28/22 11:14	01/28/22 11:29	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809423	1.05	01/27/22 22:30	01/28/22 04:44	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809503	25	01/26/22 09:35	01/28/22 05:44	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809492	1	01/26/22 09:35	01/28/22 00:13	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810264	1	01/31/22 08:11	01/31/22 17:14	TJD	Mt. Juliet, TN

SB-19(0-1') L1455262-10 Solid

Collected by: BH/OG | Collected date/time: 01/26/22 09:56 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809215	1	01/28/22 11:14	01/28/22 11:29	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809423	1	01/27/22 22:30	01/28/22 04:53	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809503	25	01/26/22 09:56	01/28/22 06:07	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809492	1	01/26/22 09:56	01/28/22 00:33	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810265	1	01/31/22 08:13	01/31/22 15:02	TJD	Mt. Juliet, TN

SB-20(0-1') L1455262-11 Solid

Collected by: BH/OG | Collected date/time: 01/26/22 10:05 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809215	1	01/28/22 11:14	01/28/22 11:29	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809423	1	01/27/22 22:30	01/28/22 05:03	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809503	25	01/26/22 10:05	01/28/22 06:31	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809492	1	01/26/22 10:05	01/28/22 00:52	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810265	1	01/31/22 08:13	01/31/22 12:39	TJD	Mt. Juliet, TN

SB-20(1-2') L1455262-12 Solid

Collected by: BH/OG | Collected date/time: 01/26/22 10:08 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809215	1	01/28/22 11:14	01/28/22 11:29	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809423	1.04	01/27/22 22:30	01/28/22 05:12	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809503	25	01/26/22 10:08	01/28/22 06:54	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809492	1	01/26/22 10:08	01/28/22 01:12	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810265	1	01/31/22 08:13	01/31/22 12:52	TJD	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Tr
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

SB-17(0-1') L1455262-14 Solid

Collected by: BH/OG | Collected date/time: 01/26/22 10:22 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809216	1	01/28/22 11:36	01/28/22 11:55	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809423	1.03	01/27/22 22:30	01/28/22 05:50	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809503	26.3	01/26/22 10:22	01/28/22 07:18	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809492	1.05	01/26/22 10:22	01/28/22 01:31	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810265	1	01/31/22 08:13	01/31/22 13:05	TJD	Mt. Juliet, TN

SB-17(1-2') L1455262-15 Solid

Collected by: BH/OG | Collected date/time: 01/26/22 10:25 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809216	1	01/28/22 11:36	01/28/22 11:55	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809423	1.02	01/27/22 22:30	01/28/22 06:00	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809503	25.3	01/26/22 10:25	01/28/22 07:41	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809492	1.01	01/26/22 10:25	01/28/22 01:51	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810265	1	01/31/22 08:13	01/31/22 13:18	TJD	Mt. Juliet, TN

SB-21(0-1') L1455262-17 Solid

Collected by: BH/OG | Collected date/time: 01/26/22 10:44 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809216	1	01/28/22 11:36	01/28/22 11:55	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809423	1	01/27/22 22:30	01/28/22 06:09	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809503	25.5	01/26/22 10:44	01/28/22 08:04	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809492	1.02	01/26/22 10:44	01/28/22 02:10	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810265	1	01/31/22 08:13	01/31/22 13:31	TJD	Mt. Juliet, TN

SB-21(1-2') L1455262-18 Solid

Collected by: BH/OG | Collected date/time: 01/26/22 10:48 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809216	1	01/28/22 11:36	01/28/22 11:55	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809423	1.03	01/27/22 22:30	01/28/22 06:19	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809503	25	01/26/22 10:48	01/28/22 08:27	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809492	1	01/26/22 10:48	01/28/22 02:30	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810265	1	01/31/22 08:13	01/31/22 15:28	TJD	Mt. Juliet, TN

SB-18(0-1') L1455262-19 Solid

Collected by: BH/OG | Collected date/time: 01/26/22 11:04 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809216	1	01/28/22 11:36	01/28/22 11:55	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809423	1	01/27/22 22:30	01/28/22 06:28	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809503	25	01/26/22 11:04	01/28/22 08:51	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809492	1	01/26/22 11:04	01/28/22 02:49	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810265	1	01/31/22 08:13	01/31/22 16:46	TJD	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Tr
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

SAMPLE SUMMARY

SB-18(1-2') L1455262-20 Solid

			Collected by	Collected date/time	Received date/time	
			BH/OG	01/26/22 11:07	01/27/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1809216	1	01/28/22 11:36	01/28/22 11:55	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1809423	1	01/27/22 22:30	01/28/22 06:38	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1809503	26.8	01/26/22 11:07	01/28/22 09:14	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1809492	1.07	01/26/22 11:07	01/28/22 03:09	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1810265	1	01/31/22 08:13	01/31/22 16:59	TJD	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Mark W. Beasley
Project Manager

Revised May 2010

Laboratory Data Package Cover Page

This data package consists of this signature page, the laboratory review checklist, and the following reportable data as applicable:

R1 - Field chain-of-custody documentation;

R2 - Sample identification cross-reference;

R3 - Test reports (analytical data sheets) for each environmental sample that includes:

a. Items consistent with NELAC Chapter 5,

b. dilution factors,

c. preparation methods,

d. cleanup methods, and

e. if required for the project, tentatively identified compounds (TICs).

R4 - Surrogate recovery data including:

a. Calculated recovery (%R), and

b. The laboratory's surrogate QC limits.

R5 - Test reports/summary forms for blank samples;

R6 - Test reports/summary forms for laboratory control samples (LCSs) including:

a. LCS spiking amounts,

b. Calculated %R for each analyte, and

c. The laboratory's LCS QC limits.

R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

a. Samples associated with the MS/MSD clearly identified,

b. MS/MSD spiking amounts,

c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,

d. Calculated %Rs and relative percent differences (RPDs), and

e. The laboratory's MS/MSD QC limits

R8 - Laboratory analytical duplicate (if applicable) recovery and precision:

a. The amount of analyte measured in the duplicate,

b. The calculated RPD, and

c. The laboratory's QC limits for analytical duplicates.

R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.

R10 - Other problems or anomalies.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Mark W. Beasley
Project Manager

Laboratory Review Checklist: Reportable Data

Laboratory Name: Pace Analytical National	LRC Date: 02/01/2022 13:18
Project Name: Novo Culebra Bluff	Laboratory Job Number: L1455262-01, 02, 05, 06, 07, 08, 09, 10, 11, 12, 14, 15, 17, 18, 19 and 20
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1809423, WG1809215, WG1809216, WG1809491, WG1809492, WG1809503, WG1810264 and WG1810265

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?	X				
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?	X				
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Revised May 2010

Laboratory Review Checklist: Supporting Data

Laboratory Name: Pace Analytical National	LRC Date: 02/01/2022 13:18
Project Name: Novo Culebra Bluff	Laboratory Job Number: L1455262-01, 02, 05, 06, 07, 08, 09, 10, 11, 12, 14, 15, 17, 18, 19 and 20
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1809423, WG1809215, WG1809216, WG1809491, WG1809492, WG1809503, WG1810264 and WG1810265

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?			X		
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Revised May 2010

Laboratory Review Checklist: Exceptions Reports

Laboratory Name: Pace Analytical National	LRC Date: 02/01/2022 13:18
Project Name: Novo Culebra Bluff	Laboratory Job Number: L1455262-01, 02, 05, 06, 07, 08, 09, 10, 11, 12, 14, 15, 17, 18, 19 and 20
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1809423, WG1809215, WG1809216, WG1809491, WG1809492, WG1809503, WG1810264 and WG1810265

ER #[1]	Description
1	300.0 WG1809423 Chloride: Percent Recovery is outside of established control limits.

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.4		1	01/28/2022 11:29	WG1809215

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	18.7	J	9.64	20.0	21.0	1.01	01/28/2022 03:28	WG1809423

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.774	0.100	3.57	33.5	01/28/2022 03:25	WG1809503
(S) a,a,a-Trifluorotoluene(FID)	*108*				*77.0-120*		*01/28/2022 03:25*	WG1809503

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000667	0.00100	0.00143	1.34	01/28/2022 04:48	WG1809491
Toluene	U		0.00186	0.00500	0.00714	1.34	01/28/2022 04:48	WG1809491
Ethylbenzene	U		0.00105	0.00250	0.00357	1.34	01/28/2022 04:48	WG1809491
Total Xylenes	U		0.00126	0.00650	0.00928	1.34	01/28/2022 04:48	WG1809491
(S) Toluene-d8	*98.5*				*75.0-131*		*01/28/2022 04:48*	WG1809491
(S) 4-Bromofluorobenzene	*98.7*				*67.0-138*		*01/28/2022 04:48*	WG1809491
(S) 1,2-Dichloroethane-d4	*114*				*70.0-130*		*01/28/2022 04:48*	WG1809491

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U		1.67	4.00	4.15	1	01/31/2022 16:34	WG1810264
C28-C36 Motor Oil Range	7.97		0.284	4.00	4.15	1	01/31/2022 16:34	WG1810264
(S) o-Terphenyl	*70.8*				*18.0-148*		*01/31/2022 16:34*	WG1810264

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.5		1	01/28/2022 11:29	WG1809215

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	24.5		9.63	20.0	20.9	1	01/28/2022 03:56	WG1809423

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.635	0.100	2.93	26.8	01/28/2022 03:48	WG1809503
(S) a,a,a-Trifluorotoluene(FID)	*107*				*77.0-120*		*01/28/2022 03:48*	WG1809503

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000545	0.00100	0.00117	1.07	01/28/2022 05:07	WG1809491
Toluene	U		0.00152	0.00500	0.00584	1.07	01/28/2022 05:07	WG1809491
Ethylbenzene	U		0.000861	0.00250	0.00293	1.07	01/28/2022 05:07	WG1809491
Total Xylenes	U		0.00103	0.00650	0.00760	1.07	01/28/2022 05:07	WG1809491
(S) Toluene-d8	*97.9*				*75.0-131*		*01/28/2022 05:07*	WG1809491
(S) 4-Bromofluorobenzene	*101*				*67.0-138*		*01/28/2022 05:07*	WG1809491
(S) 1,2-Dichloroethane-d4	*114*				*70.0-130*		*01/28/2022 05:07*	WG1809491

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	3.20	J	1.69	4.00	4.19	1	01/31/2022 17:28	WG1810264
C28-C36 Motor Oil Range	17.1		0.287	4.00	4.19	1	01/31/2022 17:28	WG1810264
(S) o-Terphenyl	*71.6*				*18.0-148*		*01/31/2022 17:28*	WG1810264

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.7		1	01/28/2022 11:29	WG1809215

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	3840		96.2	20.0	209	10	01/28/2022 04:06	WG1809423

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.610	0.100	2.81	25.8	01/28/2022 04:12	WG1809503
(S) a,a,a-Trifluorotoluene(FID)	*107*				*77.0-120*		*01/28/2022 04:12*	WG1809503

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000524	0.00100	0.00112	1.03	01/28/2022 05:26	WG1809491
Toluene	U		0.00146	0.00500	0.00561	1.03	01/28/2022 05:26	WG1809491
Ethylbenzene	U		0.000827	0.00250	0.00281	1.03	01/28/2022 05:26	WG1809491
Total Xylenes	0.00135	J	0.000988	0.00650	0.00730	1.03	01/28/2022 05:26	WG1809491
(S) Toluene-d8	*97.9*				*75.0-131*		*01/28/2022 05:26*	WG1809491
(S) 4-Bromofluorobenzene	*98.3*				*67.0-138*		*01/28/2022 05:26*	WG1809491
(S) 1,2-Dichloroethane-d4	*113*				*70.0-130*		*01/28/2022 05:26*	WG1809491

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	16.4		1.68	4.00	4.18	1	01/31/2022 17:41	WG1810264
C28-C36 Motor Oil Range	32.6		0.286	4.00	4.18	1	01/31/2022 17:41	WG1810264
(S) o-Terphenyl	*64.8*				*18.0-148*		*01/31/2022 17:41*	WG1810264

SB-15(0-1')
Collected date/time: 01/26/22 09:14
L1455262

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.6		1	01/28/2022 11:29	WG1809215

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	13.7	J	9.63	20.0	20.9	1	01/28/2022 04:15	WG1809423

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.593	0.100	2.73	25	01/28/2022 04:35	WG1809503
(S) a,a,a-Trifluorotoluene(FID)	*107*				*77.0-120*		*01/28/2022 04:35*	WG1809503

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000510	0.00100	0.00109	1	01/28/2022 05:45	WG1809491
Toluene	U		0.00142	0.00500	0.00546	1	01/28/2022 05:45	WG1809491
Ethylbenzene	U		0.000805	0.00250	0.00273	1	01/28/2022 05:45	WG1809491
Total Xylenes	U		0.000962	0.00650	0.00710	1	01/28/2022 05:45	WG1809491
(S) Toluene-d8	*96.3*				*75.0-131*		*01/28/2022 05:45*	WG1809491
(S) 4-Bromofluorobenzene	*102*				*67.0-138*		*01/28/2022 05:45*	WG1809491
(S) 1,2-Dichloroethane-d4	*117*				*70.0-130*		*01/28/2022 05:45*	WG1809491

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	2.07	J	1.68	4.00	4.19	1	01/31/2022 16:47	WG1810264
C28-C36 Motor Oil Range	13.4		0.287	4.00	4.19	1	01/31/2022 16:47	WG1810264
(S) o-Terphenyl	*76.7*				*18.0-148*		*01/31/2022 16:47*	WG1810264

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.8		1	01/28/2022 11:29	WG1809215

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	12.9	J	9.60	20.0	20.9	1	01/28/2022 04:25	WG1809423

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.593	0.100	2.73	25	01/28/2022 04:58	WG1809503
(S) a,a,a-Trifluorotoluene(FID)	*108*				*77.0-120*		*01/28/2022 04:58*	WG1809503

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000510	0.00100	0.00109	1	01/28/2022 06:04	WG1809491
Toluene	U		0.00142	0.00500	0.00546	1	01/28/2022 06:04	WG1809491
Ethylbenzene	U		0.000805	0.00250	0.00273	1	01/28/2022 06:04	WG1809491
Total Xylenes	U		0.000962	0.00650	0.00710	1	01/28/2022 06:04	WG1809491
(S) Toluene-d8	*98.1*				*75.0-131*		*01/28/2022 06:04*	WG1809491
(S) 4-Bromofluorobenzene	*99.2*				*67.0-138*		*01/28/2022 06:04*	WG1809491
(S) 1,2-Dichloroethane-d4	*115*				*70.0-130*		*01/28/2022 06:04*	WG1809491

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	2.04	J	1.68	4.00	4.17	1	01/31/2022 17:01	WG1810264
C28-C36 Motor Oil Range	14.2		0.286	4.00	4.17	1	01/31/2022 17:01	WG1810264
(S) o-Terphenyl	*70.2*				*18.0-148*		*01/31/2022 17:01*	WG1810264

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	98.0		1	01/28/2022 11:29	WG1809215

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	28.0		9.67	20.0	21.0	1.03	01/28/2022 04:34	WG1809423

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.565	0.100	2.60	25	01/28/2022 05:21	WG1809503
(S) a,a,a-Trifluorotoluene(FID)	*108*				*77.0-120*		*01/28/2022 05:21*	WG1809503

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000486	0.00100	0.00104	1	01/27/2022 23:53	WG1809492
Toluene	0.00137	J	0.00135	0.00500	0.00521	1	01/27/2022 23:53	WG1809492
Ethylbenzene	U		0.000767	0.00250	0.00260	1	01/27/2022 23:53	WG1809492
Total Xylenes	U		0.000916	0.00650	0.00677	1	01/27/2022 23:53	WG1809492
(S) Toluene-d8	*111*				*75.0-131*		*01/27/2022 23:53*	WG1809492
(S) 4-Bromofluorobenzene	*93.6*				*67.0-138*		*01/27/2022 23:53*	WG1809492
(S) 1,2-Dichloroethane-d4	*89.4*				*70.0-130*		*01/27/2022 23:53*	WG1809492

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	2.91	J	1.64	4.00	4.08	1	01/31/2022 18:22	WG1810264
C28-C36 Motor Oil Range	18.2		0.280	4.00	4.08	1	01/31/2022 18:22	WG1810264
(S) o-Terphenyl	*76.3*				*18.0-148*		*01/31/2022 18:22*	WG1810264

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.8		1	01/28/2022 11:29	WG1809215

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	11.6	J	9.98	20.0	21.7	1.05	01/28/2022 04:44	WG1809423

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.579	0.100	2.67	25	01/28/2022 05:44	WG1809503
(S) a,a,a-Trifluorotoluene(FID)	*108*				*77.0-120*		*01/28/2022 05:44*	WG1809503

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000499	0.00100	0.00107	1	01/28/2022 00:13	WG1809492
Toluene	U		0.00139	0.00500	0.00534	1	01/28/2022 00:13	WG1809492
Ethylbenzene	U		0.000787	0.00250	0.00267	1	01/28/2022 00:13	WG1809492
Total Xylenes	U		0.000940	0.00650	0.00694	1	01/28/2022 00:13	WG1809492
(S) Toluene-d8	*114*				*75.0-131*		*01/28/2022 00:13*	WG1809492
(S) 4-Bromofluorobenzene	*93.9*				*67.0-138*		*01/28/2022 00:13*	WG1809492
(S) 1,2-Dichloroethane-d4	*85.2*				*70.0-130*		*01/28/2022 00:13*	WG1809492

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	1.68	J	1.66	4.00	4.13	1	01/31/2022 17:14	WG1810264
C28-C36 Motor Oil Range	11.1		0.283	4.00	4.13	1	01/31/2022 17:14	WG1810264
(S) o-Terphenyl	*73.7*				*18.0-148*		*01/31/2022 17:14*	WG1810264

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.7		1	01/28/2022 11:29	WG1809215

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	15.5	J	9.62	20.0	20.9	1	01/28/2022 04:53	WG1809423

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.593	0.100	2.73	25	01/28/2022 06:07	WG1809503
(S) a,a,a-Trifluorotoluene(FID)	*107*				*77.0-120*		*01/28/2022 06:07*	WG1809503

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000511	0.00100	0.00109	1	01/28/2022 00:33	WG1809492
Toluene	U		0.00142	0.00500	0.00547	1	01/28/2022 00:33	WG1809492
Ethylbenzene	U		0.000806	0.00250	0.00273	1	01/28/2022 00:33	WG1809492
Total Xylenes	U		0.000962	0.00650	0.00711	1	01/28/2022 00:33	WG1809492
(S) Toluene-d8	*115*				*75.0-131*		*01/28/2022 00:33*	WG1809492
(S) 4-Bromofluorobenzene	*95.3*				*67.0-138*		*01/28/2022 00:33*	WG1809492
(S) 1,2-Dichloroethane-d4	*90.8*				*70.0-130*		*01/28/2022 00:33*	WG1809492

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	2.87	J	1.68	4.00	4.18	1	01/31/2022 15:02	WG1810265
C28-C36 Motor Oil Range	19.7		0.286	4.00	4.18	1	01/31/2022 15:02	WG1810265
(S) o-Terphenyl	*70.1*				*18.0-148*		*01/31/2022 15:02*	WG1810265

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.6		1	01/28/2022 11:29	WG1809215

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	U		9.62	20.0	20.9	1	01/28/2022 05:03	WG1809423

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.592	0.100	2.73	25	01/28/2022 06:31	WG1809503
(S) a,a,a-Trifluorotoluene(FID)	*108*				*77.0-120*		*01/28/2022 06:31*	WG1809503

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000510	0.00100	0.00109	1	01/28/2022 00:52	WG1809492
Toluene	U		0.00142	0.00500	0.00546	1	01/28/2022 00:52	WG1809492
Ethylbenzene	U		0.000804	0.00250	0.00273	1	01/28/2022 00:52	WG1809492
Total Xylenes	U		0.000960	0.00650	0.00709	1	01/28/2022 00:52	WG1809492
(S) Toluene-d8	*113*				*75.0-131*		*01/28/2022 00:52*	WG1809492
(S) 4-Bromofluorobenzene	*92.2*				*67.0-138*		*01/28/2022 00:52*	WG1809492
(S) 1,2-Dichloroethane-d4	*86.7*				*70.0-130*		*01/28/2022 00:52*	WG1809492

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U		1.68	4.00	4.18	1	01/31/2022 12:39	WG1810265
C28-C36 Motor Oil Range	32.4		0.286	4.00	4.18	1	01/31/2022 12:39	WG1810265
(S) o-Terphenyl	*70.3*				*18.0-148*		*01/31/2022 12:39*	WG1810265

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.0		1	01/28/2022 11:29	WG1809215

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	10.1	J	9.97	20.0	21.7	1.04	01/28/2022 05:12	WG1809423

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.591	0.100	2.72	25	01/28/2022 06:54	WG1809503
(S) a,a,a-Trifluorotoluene(FID)	*108*				*77.0-120*		*01/28/2022 06:54*	WG1809503

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000509	0.00100	0.00109	1	01/28/2022 01:12	WG1809492
Toluene	U		0.00142	0.00500	0.00544	1	01/28/2022 01:12	WG1809492
Ethylbenzene	U		0.000803	0.00250	0.00272	1	01/28/2022 01:12	WG1809492
Total Xylenes	U		0.000958	0.00650	0.00708	1	01/28/2022 01:12	WG1809492
(S) Toluene-d8	*110*				*75.0-131*		*01/28/2022 01:12*	WG1809492
(S) 4-Bromofluorobenzene	*90.6*				*67.0-138*		*01/28/2022 01:12*	WG1809492
(S) 1,2-Dichloroethane-d4	*87.6*				*70.0-130*		*01/28/2022 01:12*	WG1809492

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U		1.68	4.00	4.17	1	01/31/2022 12:52	WG1810265
C28-C36 Motor Oil Range	8.04		0.286	4.00	4.17	1	01/31/2022 12:52	WG1810265
(S) o-Terphenyl	*65.8*				*18.0-148*		*01/31/2022 12:52*	WG1810265

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.0		1	01/28/2022 11:55	WG1809216

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	15.8	J	9.97	20.0	21.7	1.03	01/28/2022 05:50	WG1809423

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.629	0.100	2.90	26.3	01/28/2022 07:18	WG1809503
(S) a,a,a-Trifluorotoluene(FID)	*108*				*77.0-120*		*01/28/2022 07:18*	WG1809503

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000540	0.00100	0.00116	1.05	01/28/2022 01:31	WG1809492
Toluene	U		0.00150	0.00500	0.00578	1.05	01/28/2022 01:31	WG1809492
Ethylbenzene	U		0.000852	0.00250	0.00290	1.05	01/28/2022 01:31	WG1809492
Total Xylenes	U		0.00102	0.00650	0.00752	1.05	01/28/2022 01:31	WG1809492
(S) Toluene-d8	*114*				*75.0-131*		*01/28/2022 01:31*	WG1809492
(S) 4-Bromofluorobenzene	*97.5*				*67.0-138*		*01/28/2022 01:31*	WG1809492
(S) 1,2-Dichloroethane-d4	*85.8*				*70.0-130*		*01/28/2022 01:31*	WG1809492

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U		1.69	4.00	4.21	1	01/31/2022 13:05	WG1810265
C28-C36 Motor Oil Range	10.9		0.288	4.00	4.21	1	01/31/2022 13:05	WG1810265
(S) o-Terphenyl	*72.4*				*18.0-148*		*01/31/2022 13:05*	WG1810265

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.0		1	01/28/2022 11:55	WG1809216

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	12.3	J	9.99	20.0	21.7	1.02	01/28/2022 06:00	WG1809423

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.619	0.100	2.85	25.3	01/28/2022 07:41	WG1809503
(S) a,a,a-Trifluorotoluene(FID)	*107*				*77.0-120*		*01/28/2022 07:41*	WG1809503

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000532	0.00100	0.00114	1.01	01/28/2022 01:51	WG1809492
Toluene	U		0.00148	0.00500	0.00570	1.01	01/28/2022 01:51	WG1809492
Ethylbenzene	U		0.000840	0.00250	0.00285	1.01	01/28/2022 01:51	WG1809492
Total Xylenes	U		0.00100	0.00650	0.00740	1.01	01/28/2022 01:51	WG1809492
(S) Toluene-d8	*118*				*75.0-131*		*01/28/2022 01:51*	WG1809492
(S) 4-Bromofluorobenzene	*91.3*				*67.0-138*		*01/28/2022 01:51*	WG1809492
(S) 1,2-Dichloroethane-d4	*91.3*				*70.0-130*		*01/28/2022 01:51*	WG1809492

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U		1.71	4.00	4.26	1	01/31/2022 13:18	WG1810265
C28-C36 Motor Oil Range	11.0		0.292	4.00	4.26	1	01/31/2022 13:18	WG1810265
(S) o-Terphenyl	*65.3*				*18.0-148*		*01/31/2022 13:18*	WG1810265

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.6		1	01/28/2022 11:55	WG1809216

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	14.9	J	9.73	20.0	21.1	1	01/28/2022 06:09	WG1809423

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.616	0.100	2.84	25.5	01/28/2022 08:04	WG1809503
(S) a,a,a-Trifluorotoluene(FID)	*107*				*77.0-120*		*01/28/2022 08:04*	WG1809503

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000530	0.00100	0.00114	1.02	01/28/2022 02:10	WG1809492
Toluene	U		0.00148	0.00500	0.00568	1.02	01/28/2022 02:10	WG1809492
Ethylbenzene	U		0.000837	0.00250	0.00284	1.02	01/28/2022 02:10	WG1809492
Total Xylenes	U		0.000999	0.00650	0.00738	1.02	01/28/2022 02:10	WG1809492
(S) Toluene-d8	*113*				*75.0-131*		*01/28/2022 02:10*	WG1809492
(S) 4-Bromofluorobenzene	*92.8*				*67.0-138*		*01/28/2022 02:10*	WG1809492
(S) 1,2-Dichloroethane-d4	*86.6*				*70.0-130*		*01/28/2022 02:10*	WG1809492

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	2.15	J	1.70	4.00	4.23	1	01/31/2022 13:31	WG1810265
C28-C36 Motor Oil Range	16.8		0.290	4.00	4.23	1	01/31/2022 13:31	WG1810265
(S) o-Terphenyl	*70.9*				*18.0-148*		*01/31/2022 13:31*	WG1810265

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.1		1	01/28/2022 11:55	WG1809216

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	16.4	J	9.96	20.0	21.7	1.03	01/28/2022 06:19	WG1809423

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.599	0.100	2.76	25	01/28/2022 08:27	WG1809503
(S) a,a,a-Trifluorotoluene(FID)	*107*				*77.0-120*		*01/28/2022 08:27*	WG1809503

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000515	0.00100	0.00110	1	01/28/2022 02:30	WG1809492
Toluene	U		0.00143	0.00500	0.00552	1	01/28/2022 02:30	WG1809492
Ethylbenzene	U		0.000813	0.00250	0.00276	1	01/28/2022 02:30	WG1809492
Total Xylenes	U		0.000971	0.00650	0.00717	1	01/28/2022 02:30	WG1809492
(S) Toluene-d8	*114*				*75.0-131*		*01/28/2022 02:30*	WG1809492
(S) 4-Bromofluorobenzene	*89.2*				*67.0-138*		*01/28/2022 02:30*	WG1809492
(S) 1,2-Dichloroethane-d4	*89.1*				*70.0-130*		*01/28/2022 02:30*	WG1809492

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U		1.69	4.00	4.21	1	01/31/2022 15:28	WG1810265
C28-C36 Motor Oil Range	13.2		0.288	4.00	4.21	1	01/31/2022 15:28	WG1810265
(S) o-Terphenyl	*62.0*				*18.0-148*		*01/31/2022 15:28*	WG1810265

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.2		1	01/28/2022 11:55	WG1809216

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	25.5		10.1	20.0	21.9	1	01/28/2022 06:28	WG1809423

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.647	0.100	2.98	25	01/28/2022 08:51	WG1809503
(S) a,a,a-Trifluorotoluene(FID)	*107*				*77.0-120*		*01/28/2022 08:51*	WG1809503

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000557	0.00100	0.00119	1	01/28/2022 02:49	WG1809492
Toluene	U		0.00155	0.00500	0.00596	1	01/28/2022 02:49	WG1809492
Ethylbenzene	U		0.000879	0.00250	0.00298	1	01/28/2022 02:49	WG1809492
Total Xylenes	U		0.00105	0.00650	0.00775	1	01/28/2022 02:49	WG1809492
(S) Toluene-d8	*110*				*75.0-131*		*01/28/2022 02:49*	WG1809492
(S) 4-Bromofluorobenzene	*91.7*				*67.0-138*		*01/28/2022 02:49*	WG1809492
(S) 1,2-Dichloroethane-d4	*87.1*				*70.0-130*		*01/28/2022 02:49*	WG1809492

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	3.03	J	1.77	4.00	4.39	1	01/31/2022 16:46	WG1810265
C28-C36 Motor Oil Range	15.1		0.300	4.00	4.39	1	01/31/2022 16:46	WG1810265
(S) o-Terphenyl	*71.4*				*18.0-148*		*01/31/2022 16:46*	WG1810265

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.9		1	01/28/2022 11:55	WG1809216

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	12.8	J	10.0	20.0	21.8	1	01/28/2022 06:38	WG1809423

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.680	0.100	3.13	26.8	01/28/2022 09:14	WG1809503
(S) a,a,a-Trifluorotoluene(FID)	*107*				*77.0-120*		*01/28/2022 09:14*	WG1809503

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000584	0.00100	0.00125	1.07	01/28/2022 03:09	WG1809492
Toluene	U		0.00163	0.00500	0.00626	1.07	01/28/2022 03:09	WG1809492
Ethylbenzene	U		0.000922	0.00250	0.00313	1.07	01/28/2022 03:09	WG1809492
Total Xylenes	U		0.00110	0.00650	0.00814	1.07	01/28/2022 03:09	WG1809492
(S) Toluene-d8	*113*				*75.0-131*		*01/28/2022 03:09*	WG1809492
(S) 4-Bromofluorobenzene	*89.7*				*67.0-138*		*01/28/2022 03:09*	WG1809492
(S) 1,2-Dichloroethane-d4	*90.8*				*70.0-130*		*01/28/2022 03:09*	WG1809492

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	2.21	J	1.75	4.00	4.35	1	01/31/2022 16:59	WG1810265
C28-C36 Motor Oil Range	9.26		0.298	4.00	4.35	1	01/31/2022 16:59	WG1810265
(S) o-Terphenyl	*65.5*				*18.0-148*		*01/31/2022 16:59*	WG1810265

Method Blank (MB)

(MB) R3754839-1 01/28/22 11:29

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00100			

L1455262-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1455262-02 01/28/22 11:29 • (DUP) R3754839-3 01/28/22 11:29

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	95.5	96.1	1	0.656		10

Laboratory Control Sample (LCS)

(LCS) R3754839-2 01/28/22 11:29

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3754840-1 01/28/22 11:55

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.000			

L1455262-17 Original Sample (OS) • Duplicate (DUP)

(OS) L1455262-17 01/28/22 11:55 • (DUP) R3754840-3 01/28/22 11:55

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	94.6	95.1	1	0.532		10

Laboratory Control Sample (LCS)

(LCS) R3754840-2 01/28/22 11:55

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3754648-1 01/28/22 02:02

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	U		9.20	20.0

L1455251-36 Original Sample (OS) • Duplicate (DUP)

(OS) L1455251-36 01/28/22 02:50 • (DUP) R3754648-3 01/28/22 02:59

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	4740	4690	10	1.10		20

L1455262-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1455262-12 01/28/22 05:12 • (DUP) R3754648-6 01/28/22 05:22

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	10.1	11.5	1	13.3	J	20

Laboratory Control Sample (LCS)

(LCS) R3754648-2 01/28/22 02:11

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	200	199	99.7	90.0-110	

L1455251-36 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1455251-36 01/28/22 02:50 • (MS) R3754648-4 01/28/22 03:09 • (MSD) R3754648-5 01/28/22 03:18

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	583	4740	5210	5350	79.9	104	10	80.0-120	V		2.65	20

Method Blank (MB)

(MB) R3755223-2 01/28/22 01:56

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.543	2.50
(S) a,a,a-Trifluorotoluene(FID)	*107*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3755223-1 01/28/22 00:30

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.35	97.3	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*101*	*77.0-120*	

Method Blank (MB)

(MB) R3755032-3 01/27/22 23:16

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*99.4*			*75.0-131*
(S) 4-Bromofluorobenzene	*97.1*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*118*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3755032-1 01/27/22 22:00 • (LCSD) R3755032-2 01/27/22 22:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.126	0.122	101	97.6	70.0-123			3.23	20
Ethylbenzene	0.125	0.119	0.112	95.2	89.6	74.0-126			6.06	20
Toluene	0.125	0.118	0.115	94.4	92.0	75.0-121			2.58	20
Xylenes, Total	0.375	0.353	0.334	94.1	89.1	72.0-127			5.53	20
(S) Toluene-d8				*97.2*	*96.9*	*75.0-131*				
(S) 4-Bromofluorobenzene				*97.9*	*99.2*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*122*	*122*	*70.0-130*				

Method Blank (MB)

(MB) R3755039-2 01/27/22 23:25

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*115*			*75.0-131*
(S) 4-Bromofluorobenzene	*92.1*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*78.3*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3755039-1 01/27/22 22:27

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.118	94.4	70.0-123	
Ethylbenzene	0.125	0.126	101	74.0-126	
Toluene	0.125	0.130	104	75.0-121	
Xylenes, Total	0.375	0.352	93.9	72.0-127	
(S) Toluene-d8			*114*	*75.0-131*	
(S) 4-Bromofluorobenzene			*90.9*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*90.7*	*70.0-130*	

L1455050-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1455050-03 01/28/22 04:08 • (MS) R3755039-3 01/28/22 06:25 • (MSD) R3755039-4 01/28/22 06:45

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.113	0.000968	0.0759	0.0966	66.6	84.9	1	10.0-149			23.9	37
Ethylbenzene	0.113	0.00366	0.0849	0.109	72.2	93.4	1	10.0-160			24.7	38
Toluene	0.113	0.00493	0.0774	0.109	64.4	92.2	1	10.0-156			33.6	38
Xylenes, Total	0.338	0.00819	0.248	0.304	70.9	87.6	1	10.0-160			20.4	38
(S) Toluene-d8					*102*	*109*		*75.0-131*				
(S) 4-Bromofluorobenzene					*106*	*95.3*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*96.5*	*88.9*		*70.0-130*				

Method Blank (MB)

(MB) R3755468-1 01/31/22 13:38

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	*69.4*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3755468-2 01/31/22 13:52

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	38.3	76.6	50.0-150	
(S) o-Terphenyl			*87.5*	*18.0-148*	

L1455251-32 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1455251-32 01/31/22 15:26 • (MS) R3755468-3 01/31/22 15:40 • (MSD) R3755468-4 01/31/22 15:53

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	54.6	3.04	45.0	40.9	76.7	69.7	1	50.0-150			9.45	20
(S) o-Terphenyl					*79.6*	*73.8*		*18.0-148*				

Method Blank (MB)

(MB) R3755475-1 01/31/22 12:13

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	*75.2*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3755475-2 01/31/22 12:26

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	43.4	86.8	50.0-150	
(S) o-Terphenyl			*86.2*	*18.0-148*	

L1455251-18 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1455251-18 01/31/22 14:23 • (MS) R3755475-3 01/31/22 15:41 • (MSD) R3755475-4 01/31/22 15:54

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	50.7	2.66	43.8	45.1	81.0	85.1	1	50.0-150			3.04	20
(S) o-Terphenyl					*86.5*	*88.0*		*18.0-148*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MQL (dry)	Method Quantitation Limit.
MQL	Method Quantitation Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
SDL	Sample Detection Limit.
SDL (dry)	Sample Detection Limit.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Sample Detection Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
V	The sample concentration is too high to evaluate accurate spike recoveries.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
Altamira - Angleton, TX
4001 Technology Drive, Ste 120
Angleton, TX 77515

Billing Information:
Bryan Haney
4001 Technology Drive, Ste 120
Angleton, TX 77515

Pres Chk

Report to: **Bryan Haney**

Email To: bryan.haney@altamira-us.com;Orlando.Gonzalez@Altamira-us.com

Project Description: Novo ~~Ovation Pad O Release~~ CULEBRA BLUFF

City/State Collected: LOVING NM

Please Circle: PT (MT) CT ET

Phone: 361-658-3126

Client Project # NVONM2103 PHASE 001

Lab Project # ALTAMIRAATX-NOVO

Collected by (print): BH/DG

Site/Facility ID # CULEBRA BLUFF

P.O. # —

Collected by (signature): Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
✓ Three Day

Quote # ~

Date Results Needed

Analysis / Container / Preservative

Chain of Custody

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # 1455262

G076

Template: T201884
Prelogin: P900101
PM: 134 - Mark W. Beasley
PB: 1/20/22 1100
Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4ozClr-NoPres	DRONM 4ozClr-NoPres	GRO 40mlAmb/MeOH10ml/Syr	V8260BTEX 40mlAmb/MeOH10ml/Syr	Remarks	Sample # (lab only)
SB-13 (0-1')	G	SS	0-1'	1/26/22	841	2	X	X	X	X		01
SB-13 (1-2')	G	SS	1-2'	1/26/22	844	2	X	X	X	X		02
SB-13 (2-3')	G	SS	2-3'	1/26/22	848	2						03
SB-13 (3-4')	G	SS	3-4'	1/26/22	851	2						04
SB-12 (0-1')	G	SS	0-1'	1/26/22	859	2	X	X	X	X		05
SB-15 (0-1')	G	SS	0-1'	1/26/22	914	2	X	X	X	X		06
SB-15 (1-2')	G	SS	1-2'	1/26/22	917	2	X	X	X	X		07
SB-16 (0-1')	G	SS	0-1'	1/26/22	927	2	X	X	X	X		08
SB-14 (0-1')	G	SS	0-1'	1/26/22	935	2	X	X	X	X		09
SB-19 (0-1')	G	SS	0-1'	1/26/22	956	2	X	X	X	X		10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: DISPOSAL SAMPLES ON HOLD PENDING

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS ✓ FedEx __ Courier _____

Tracking # 5489 4019 3810

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: ✓Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
BH/MM	1/26/2022	1630	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes (No) HCL / MeoH TBR

Temp: °C Bottles Received: BAA 3.8+0=3.8

Date: 1/27/22 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

Company Name/Address:
Altamira - Angleton, TX
4001 Technology Drive, Ste 120
Angleton, TX 77515

Billing Information:
Bryan Haney
4001 Technology Drive, Ste 120
Angleton, TX 77515

Pres Chk

Report to: **Bryan Haney**

Email To: bryan.haney@altamira-us.com;Orlando.Gonzalez@Altamira-us.com

Project Description: Novo ~~Ovation Pad O Release~~ CULEBRA BLUFF

City/State Collected: LOVING, NM

Please Circle: PT (MT) CT ET

Phone: 361-658-3126

Client Project # NVONM210[illegible] PHASE 001

Lab Project # ALTAMIRAATX-NOVO

Collected by (print): OG/BH

Site/Facility ID # CULEBRA BLUFF

P.O. # —

Collected by (signature): [signature]

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
X Three Day

Quote # —

Date Results Needed

Analysis / Container / Preservative

Chain of Custody

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # 1455262

Table #

Acctnum: ALTAMIRAATX
Template: T201884
Prelogin: P900101
PM: 134 - Mark W. Beasley
PB: 1/20/22 tec
Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4ozClr-NoPres	DRONM 4ozClr-NoPres	GRO 40mlAmb/MeOH10ml/Syr	V8260BTEX 40mlAmb/MeOH10ml/Syr	Remarks	Sample # (lab only)
SB-20 (0-1')	G	SS	0-1'	1/26/22	1005	2	X	X	X	X		11
SB-20 (1-2')	G	SS	1-2'	1/26/22	1008	2	X	X	X	X		12
SB-20 (2-3')	G	SS	2-3'	1/26/22	1011	2						13
SB-17 (0-1')	G	SS	0-1'	1/26/22	1022	2	X	X	X	X		14
SB-17 (1-2')	G	SS	1-2'	1/26/22	1025	2	X	X	X	X		15
SB-17 (2-3')	G	SS	2-3'	1/26/22	1027	2						16
SB-21 (0-1')	G	SS	0-1'	1/26/22	1044	2	X	X	X	X		17
SB-21 (1-2')	G	SS	1-2'	1/26/22	1048	2	X	X	X	X		18
~~SB-18~~		SS										
~~SB~~		SS										

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: DEEPER SAMPLES ON HOLD PENDING

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS X FedEx __ Courier _____

Tracking # 5489 4019 3810

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: ✓Y __N
RAD Screen <0.5 mR/hr: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes (No) HCL / MeoH TBR
[signature]	1/26/2022	1630		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: BAA2 3.8+0=3.8
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 1/27/22 Time: 0900

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Company Name/Address:
Altamira - Angleton, TX
4001 Technology Drive, Ste 120
Angleton, TX 77515

Billing Information:
Bryan Haney
4001 Technology Drive, Ste 120
Angleton, TX 77515

Pres Chk

Report to: **Bryan Haney**

Email To: bryan.haney@altamira-us.com;Orlando.Gonzalez@Altamira-us.com

Project Description: ~~Novo Ovation Pad O Release~~ CULEBRA BLUFF

City/State Collected: LUING, NM

Please Circle: PT (MT) CT ET

Phone: 361-658-3126

Client Project # NVONM2103 PHASE 001

Lab Project # ALTAMIRAATX-NOVO

Collected by (print): CG | BH

Site/Facility ID # CULEBRA BLUFF

P.O. # —

Collected by (signature): BM BM

Immediately Packed on Ice N ___ Y ___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
X Two Day ___ 10 Day (Rad Only)
X Three Day

Quote # —

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4ozClr-NoPres	DRONM 4ozClr-NoPres	GRO 40mlAmb/MeOH10ml/Syr	V8260BTEX 40mlAmb/MeOH10ml/Syr	Remarks	Sample # (lab only)
SB-18 (0-1')	G	SS	0-1'	1/26/22	1104	2	X	X	X	X		19
SB-18 (1-2')	G	SS	1-2'	1/26/22	1107	2	X	X	X	X		20
SB-18 (2-3')	G	SS	2-3'	1/26/22	1111	2						21
		SS										
		SS										
		SS										
		SS										
		SS										
		SS										
		SS										

Analysis / Container / Preservative

Chain of Custody

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # 1455262

Table #

Acctnum: ALTAMIRAATX

Template: T201884

Prelogin: P900101

PM: 134 - Mark W. Beasley

PB: 1/20/22 1100

Shipped Via: FedEX Ground

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: DEEPER SAMPLES ON HOLD PENDING

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS __ FedEx ✓ Courier _____

Tracking # 5489 4019 3810

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: ✓Y __N
RAD Screen <0.5 mR/hr: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
BM BM	1/26/2022	1630		~~Yes~~ / No
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: BAA2 3.8+0=3.8
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 1/27/22 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

L1455262

Tracking Numbers		Temperature
5489 4019 3831		NSAC 2.6+.0=2.6
" " 3820		NSAC 0.2+.0=0.2
" " 3842		BAA2 2.0+.0=2.0
" " 3810		BAA2 3.8+.0=3.8

ANALYTICAL REPORT

February 07, 2022

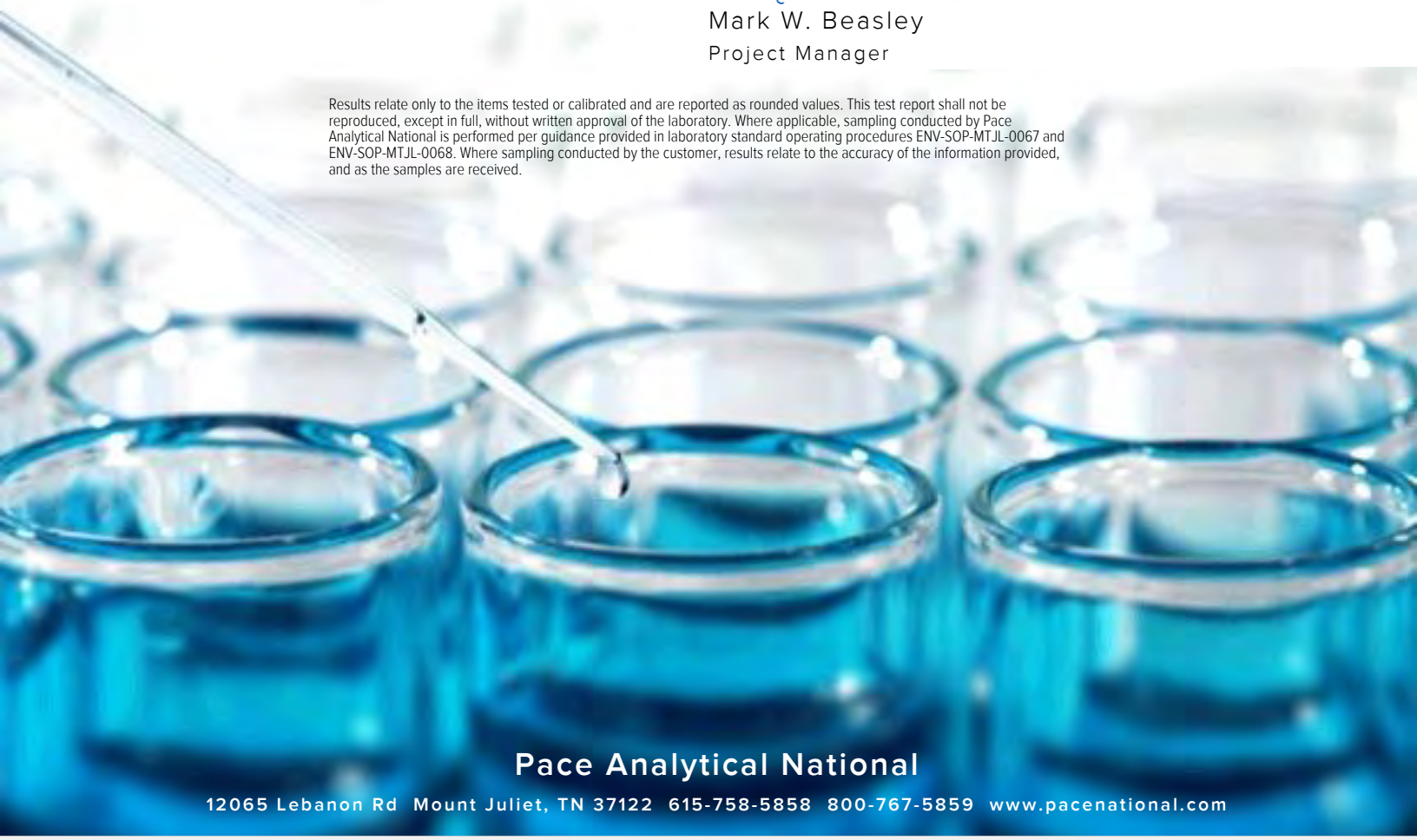
Altamira - Angleton, TX

Sample Delivery Group:	L1456920
Samples Received:	01/27/2022
Project Number:	NVONM2103 PHASE 001
Description:	Novo Culebra Bluff
Site:	CULEBRA BLUFF
Report To:	Bryan Haney 4001 Technology Drive, Ste 120 Angleton, TX 77515

Entire Report Reviewed By:

Mark W. Beasley
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

SB-2(3-4') L1456920-01 Solid

Collected by: BH/OG | Collected date/time: 01/25/22 11:21 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1812658	1	02/04/22 09:28	02/04/22 09:45	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1813032	5	02/04/22 09:00	02/04/22 17:16	LBR	Mt. Juliet, TN

SB-2(4-5') L1456920-02 Solid

Collected by: BH/OG | Collected date/time: 01/25/22 11:23 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1812658	1	02/04/22 09:28	02/04/22 09:45	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1813032	5	02/04/22 09:00	02/04/22 17:33	LBR	Mt. Juliet, TN

SB-3(2-3') L1456920-03 Solid

Collected by: BH/OG | Collected date/time: 01/25/22 13:37 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1812658	1	02/04/22 09:28	02/04/22 09:45	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1813032	1	02/04/22 09:00	02/04/22 18:41	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1812250	27.5	01/25/22 13:37	02/03/22 05:44	CAM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1812694	1	02/04/22 04:43	02/04/22 21:26	JDG	Mt. Juliet, TN

SB-9(2-2.5') L1456920-04 Solid

Collected by: BH/OG | Collected date/time: 01/25/22 15:29 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1812658	1	02/04/22 09:28	02/04/22 09:45	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1813032	5	02/04/22 09:00	02/04/22 18:58	LBR	Mt. Juliet, TN

SB-11(2-3') L1456920-05 Solid

Collected by: BH/OG | Collected date/time: 01/25/22 16:36 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1812658	1	02/04/22 09:28	02/04/22 09:45	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1813032	5	02/04/22 09:00	02/04/22 19:48	LBR	Mt. Juliet, TN

SB-11(3-4') L1456920-06 Solid

Collected by: BH/OG | Collected date/time: 01/25/22 16:40 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1812658	1	02/04/22 09:28	02/04/22 09:45	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1813032	5	02/04/22 09:00	02/04/22 20:05	LBR	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Mark W. Beasley
Project Manager

Revised May 2010

Laboratory Data Package Cover Page

This data package consists of this signature page, the laboratory review checklist, and the following reportable data as applicable:

R1 - Field chain-of-custody documentation;

R2 - Sample identification cross-reference;

R3 - Test reports (analytical data sheets) for each environmental sample that includes:

a. Items consistent with NELAC Chapter 5,

b. dilution factors,

c. preparation methods,

d. cleanup methods, and

e. if required for the project, tentatively identified compounds (TICs).

R4 - Surrogate recovery data including:

a. Calculated recovery (%R), and

b. The laboratory's surrogate QC limits.

R5 - Test reports/summary forms for blank samples;

R6 - Test reports/summary forms for laboratory control samples (LCSs) including:

a. LCS spiking amounts,

b. Calculated %R for each analyte, and

c. The laboratory's LCS QC limits.

R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

a. Samples associated with the MS/MSD clearly identified,

b. MS/MSD spiking amounts,

c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,

d. Calculated %Rs and relative percent differences (RPDs), and

e. The laboratory's MS/MSD QC limits

R8 - Laboratory analytical duplicate (if applicable) recovery and precision:

a. The amount of analyte measured in the duplicate,

b. The calculated RPD, and

c. The laboratory's QC limits for analytical duplicates.

R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.

R10 - Other problems or anomalies.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Mark W. Beasley

Project Manager

Laboratory Review Checklist: Reportable Data

Laboratory Name: Pace Analytical National	LRC Date: 02/07/2022 17:05
Project Name: Novo Culebra Bluff	Laboratory Job Number: L1456920-01, 02, 03, 04, 05 and 06
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1812250, WG1812658, WG1812694 and WG1813032

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?	X				
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?	X				
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Revised May 2010

Laboratory Review Checklist: Supporting Data

Laboratory Name: Pace Analytical National	LRC Date: 02/07/2022 17:05
Project Name: Novo Culebra Bluff	Laboratory Job Number: L1456920-01, 02, 03, 04, 05 and 06
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1812250, WG1812658, WG1812694 and WG1813032

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?			X		
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?			X		
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Revised May 2010

Laboratory Review Checklist: Exception Reports

Laboratory Name: Pace Analytical National	LRC Date: 02/07/2022 17:05
Project Name: Novo Culebra Bluff	Laboratory Job Number: L1456920-01, 02, 03, 04, 05 and 06
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1812250, WG1812658, WG1812694 and WG1813032

ER #[1]	Description
1	300.0 WG1813032 Chloride: Percent Recovery is outside of established control limits.

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

SB-2(3-4')
Collected date/time: 01/25/22 11:21
L1456920

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	90.7		1	02/04/2022 09:45	WG1812658

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	2040		50.7	20.0	110	5	02/04/2022 17:16	WG1813032

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	90.8		1	02/04/2022 09:45	WG1812658

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	2290	V	50.7	20.0	110	5	02/04/2022 17:33	WG1813032

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	93.9		1	02/04/2022 09:45	WG1812658

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	205		9.79	20.0	21.3	1	02/04/2022 18:41	WG1813032

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	0.755	B J	0.670	0.100	3.09	27.5	02/03/2022 05:44	WG1812250
(S) a,a,a-Trifluorotoluene(FID)	*96.9*				*77.0-120*		*02/03/2022 05:44*	WG1812250

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	14.5		1.71	4.00	4.26	1	02/04/2022 21:26	WG1812694
C28-C36 Motor Oil Range	7.76		0.292	4.00	4.26	1	02/04/2022 21:26	WG1812694
(S) o-Terphenyl	*61.6*				*18.0-148*		*02/04/2022 21:26*	WG1812694

SB-5(2-2.5')
Collected date/time: 01/25/22 15:29
L1456920

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	88.1		1	02/04/2022 09:45	WG1812658

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	3350		52.2	20.0	114	5	02/04/2022 18:58	WG1813032

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	85.5		1	02/04/2022 09:45	WG1812658

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	3520		53.8	20.0	117	5	02/04/2022 19:48	WG1813032

SB-11(3-4')
Collected date/time: 01/25/22 16:40
L1456920

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	85.7		1	02/04/2022 09:45	WG1812658

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	2740		53.7	20.0	117	5	02/04/2022 20:05	WG1813032

Method Blank (MB)

(MB) R3757191-1 02/04/22 09:45

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.000			

L1456920-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1456920-03 02/04/22 09:45 • (DUP) R3757191-3 02/04/22 09:45

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	93.9	94.1	1	0.157		10

Laboratory Control Sample (LCS)

(LCS) R3757191-2 02/04/22 09:45

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.1	100	85.0-115	

Method Blank (MB)

(MB) R3757303-1 02/04/22 15:51

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	U		9.20	20.0

L1456920-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1456920-02 02/04/22 17:33 • (DUP) R3757303-3 02/04/22 17:50

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	2290	2300	5	0.610		20

L1457674-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1457674-09 02/05/22 00:02 • (DUP) R3757303-6 02/05/22 00:19

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	11.2	10.9	1	3.09	J	20

Laboratory Control Sample (LCS)

(LCS) R3757303-2 02/04/22 16:08

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	200	207	104	90.0-110	

L1456920-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1456920-02 02/04/22 17:33 • (MS) R3757303-4 02/04/22 18:07 • (MSD) R3757303-5 02/04/22 18:24

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	551	2290	2970	2790	123	90.4	5	80.0-120	V		6.26	20

Method Blank (MB)

(MB) R3756908-2 02/02/22 22:01

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.938	J	0.543	2.50
(S) a,a,a-Trifluorotoluene(FID)	*95.9*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3756908-1 02/02/22 19:14

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.61	83.8	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*98.2*	*77.0-120*	

L1456856-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1456856-01 02/02/22 23:20 • (MS) R3756908-3 02/03/22 07:19 • (MSD) R3756908-4 02/03/22 07:42

Analyte	Spike Amount (dry) mg/kg	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	106	0.851	79.6	86.0	57.6	62.2	25	10.0-151			7.64	28
(S) a,a,a-Trifluorotoluene(FID)					*99.6*	*99.4*		*77.0-120*				

Method Blank (MB)

(MB) R3757199-1 02/04/22 20:34

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	*64.7*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3757199-2 02/04/22 20:47

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	40.5	81.0	50.0-150	
(S) o-Terphenyl			*91.4*	*18.0-148*	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MQL (dry)	Method Quantitation Limit.
MQL	Method Quantitation Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
SDL	Sample Detection Limit.
SDL (dry)	Sample Detection Limit.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Sample Detection Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
V	The sample concentration is too high to evaluate accurate spike recoveries.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:	Altamira - Angleton, TX 4001 Technology Drive, Ste 120 Angleton, TX 77515
Billing Information:	Bryan Haney 4001 Technology Drive, Ste 120 Angleton, TX 77515
Pres Chk	
Report to:	Bryan Haney
Email To:	bryan.haney@altamira-us.com;Orlando.Gonzalez@Altamira-us.com
Project Description:	Novo ~~[illegible]~~ CULEBRA BLUFF
City/State Collected:	LOVING, NM
Please Circle:	PT (MT) CT ET
Phone:	361-658-3126
Client Project #	NVONM2103 PHASE 001
Lab Project #	ALTAMIRAATX-NOVO
Collected by (print):	BH / OG
Site/Facility ID #	CULEBRA BLUFF
P.O. #	—
Collected by (signature):	[signature]
Rush? (Lab MUST Be Notified)	___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) X Three Day
Quote #	—
Date Results Needed	
Immediately Packed on Ice	N ___ Y ✓

Chain of Custody Page 2 of 5

Pace PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1455251

Table # L1456920

Acctnum: ALTAMIRAATX
Template: T201884
Prelogin: P900101
PM: 134 - Mark W. Beasley
PB: [signature]
Shipped Via: FedEX Ground

AV 2/2/22

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4ozClr-NoPres	DRONM 4ozClr-NoPres	GRO 40mlAmb/MeOH10ml/Syr	V8260BTEX 40mlAmb/MeOH10ml/Syr	Remarks	Sample # (lab only)
SB-2 (0-1')	G	SS	0-1'	1/25/22	1111	2	X	X	X	X		~~-06~~
SB-2 (2-3')	G	SS	2-3'	1/25/22	1119	2	X	X	X	X		~~-07~~
SB-2 (3-4')	G	SS	3-4'	1/25/22	1121	2						~~-08~~ -01
SB-2 (4-5')	G	SS	4-5'	1/25/22	1123	2						~~-09~~ -02
SB-2 (6-7')	G	SS	6-7'	1/25/22	1129	2						~~-10~~
SB-2 (8-9')	G	SS	8-9'	1/25/22	1133	2						~~-11~~
SB-2 (9-10')	G	SS	9-10'	1/25/22	1135	2						~~-12~~
SB-2 (14-15')	G	SS	14-15'	1/25/22	1140	2						~~-13~~
		SS										
		SS										

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other ________

Remarks: DESIGNATED SAMPLES PENDING ANALYSIS

pH ______ Temp ______
Flow ______ Other ______

Samples returned via: __ UPS ✓ FedEx __ Courier ________

Tracking # 5489 4019 3820

Sample Receipt Checklist
COC Seal Present/Intact: _NP ✓Y _N
COC Signed/Accurate: ✓Y _N
Bottles arrive intact: ✓Y _N
Correct bottles used: ✓Y _N
Sufficient volume sent: ✓Y _N
If Applicable
VOA Zero Headspace: ✓Y _N
Preservation Correct/Checked: ✓Y _N
RAD Screen <0.5 mR/hr: ✓Y _N

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	
[signature]	1/26/2022	1630		Trip Blank Received: (Yes) No HCL / MeOH TBR 2
				Temp: NSA6 2.6+0=2.6 °C Bottles Received:
			Received for lab by: (Signature) [signature]	Date: 1/27/22 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

Company Name/Address:	Billing Information:	Pres Chk
Altamira - Angleton, TX 4001 Technology Drive, Ste 120 Angleton, TX 77515	Bryan Haney 4001 Technology Drive, Ste 120 Angleton, TX 77515	
Report to: Bryan Haney	Email To: bryan.haney@altamira-us.com;Orlando.Gonzalez@Altamira-us.com	
Project Description: Novo ~~Oration Pad C~~ CULEBRA BLUFF	City/State Collected: LOVING, NM	Please Circle: PT MT CT ET
Phone: 361-658-3126	Client Project # NVONM2103 PHASE 001	Lab Project # ALTAMIRAATX-NOVO
Collected by (print): OG/BH	Site/Facility ID # CULEBRA BLUFF	P.O. # —
Collected by (signature): BMM	Rush? (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) X Three Day	Quote # —
Immediately Packed on Ice N___ Y✓	Date Results Needed	No. of Cntrs

Analysis / Container / Preservative

Chain of Custody Page 3 of 5

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # 145525

Table # L1456920

Acctnum: ALTAMIRAATX

Template: T201884

Prelogin: P900101

PM: 134 - Mark W. Beasley

PB: 1/26/22 tdd

Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4ozClr-NoPres	DRONM 4ozClr-NoPres	GRO 40mlAmb/MeOH10ml/Syr	V8260BTEX 40mlAmb/MeOH10ml/Syr	Remarks	Sample # (lab only)
SB-3 (0-1')	G	SS	0-1'	1/25/22	1330	2	X	X	X	X		~~14~~
SB-3 (1-2')	G	SS	1-2'	1/25/22	1333	2	X	X	X	X		~~15~~
SB-3 (2-3')	G	SS	2-3'	1/25/22	1337	2						~~16~~ -03
SB-3 (3-4')	G	SS	3-4'	1/25/22	1342	2						~~17~~
SB-4 (0-1')	G	SS	0-1'	1/25/22	1410	2	X	X	X	X		~~18~~
SB-4 (1-2')	G	SS	1-2'	1/25/22	1415	2	X	X	X	X		~~19~~
SB-6 (0-1')	G	SS	0-1'	1/25/22	1426	2	X	X	X	X		~~20~~
SB-6 (1-2')	G	SS	1-2'	1/25/22	1432	2	X	X	X	X		~~2221~~
SB-8 (0-1')	G	SS	0-1'	1/25/22	1445	2	X	X	X	X		~~2322~~
		SS										

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: DEEPER SAMPLES ON HOLD PENDING

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __UPS __FedEx __Courier _____

Tracking # 5489 4019 3820

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: (Yes) No HCl / MeoH TBR	If preservation required by Login: Date/Time
BMM	1/26/2022	1630		2	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: NSAF 2.6+0=2.6 24	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Veronica Sistrunk	Date: 1/27/22 Time: 0900	Hold: Condition: NCF / OK

Company Name/Address:
Altamira - Angleton, TX
4001 Technology Drive, Ste 120
Angleton, TX 77515

Billing Information:
Bryan Haney
4001 Technology Drive, Ste 120
Angleton, TX 77515

Pres Chk

Report to: Bryan Haney

Email To: bryan.haney@altamira-us.com;Orlando.Gonzalez@Altamira-us.com

Project Description: Novo ~~Operation Pad O Release~~ CULEBRA BLUFF

City/State Collected: LOVING, NM

Please Circle: PT MT CT ET

Phone: 361-658-3126

Client Project # NVONM2103 PHASE 001

Lab Project # ALTAMIRAATX-NOVO

Collected by (print): OG/BH

Site/Facility ID # CULEBRA BLUFF

P.O. # —

Collected by (signature): BM MM

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
X Three Day

Quote #

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

Chain of Custody Page 4 of 5

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # 145525

Table # L1456920

Acctnum: ALTAMIRAATX

Template: T201884

Prelogin: P900101

PM: 134 - Mark W. Beasley

PB: 1/20 22 t00

Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4ozClr-NoPres	DRONM 4ozClr-NoPres	GRO 40mlAmb/MeOH10ml/Syr	V8260BTEX 40mlAmb/MeOH10ml/Syr	Remarks	Sample # (lab only)
SB-5 (0-1')	G	SS	0-1'	1/25/22	1457	2	X	X	X	X		~~24~~ ~~23~~
SB-5 (1-1.5')	G	SS	1-1.5'	1/25/22	1505	2	X	X	X	X		~~25~~ 24
SB-9 (0-1')	G	SS	0-1'	1/25/22	1523	2	X	X	X	X		~~26~~ ~~25~~
SB-9 (1-2')	G	SS	1-2'	1/25/22	1526	2	X	X	X	X		~~27~~ ~~26~~
SB-9 (2-2.5')	G	SS	2-2.5	1/25/22	1529	2						~~28~~ ~~27~~ -04
SB-7 (0-1')	G	SS	0-1'	1/25/22	1558	2	X	X	X	X		~~29~~ ~~28~~
SB-7 (1-2')	G	SS	1-2'	1/25/22	1601	2	X	X	X	X		~~30~~ 29
SB-7 (2-2.5')	G	SS	2-2.5'	1/25/22	1603	2						~~31~~ 30
		SS										
		SS										

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: DEEPER SAMPLES ON HOLD PENDING

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __UPS __FedEx ✓ Courier _____

Tracking # 5489 4019 3820

Sample Receipt Checklist
COC Seal Present/Intact: __NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct Bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
BM MM	1/26/2022	1630		2	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: NSA626 +.02.6 76	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 1/27/22 Time: 0900	Hold: Condition: NCF (OK)

Company Name/Address:	Billing Information:	Pres Chk
Altamira - Angleton, TX 4001 Technology Drive, Ste 120 Angleton, TX 77515	Bryan Haney 4001 Technology Drive, Ste 120 Angleton, TX 77515	
Report to: Bryan Haney	Email To: bryan.haney@altamira-us.com;Orlando.Gonzalez@Altamira-us.com	
Project Description: Novo ~~Ovation Pad C Release~~ CULEBRA BLUFF	City/State Collected: LOVING, NM	Please Circle: PT (MT) CT ET
Phone: 361-658-3126	Client Project # NVONM2103 PHASE 001	Lab Project # ALTAMIRAATX-NOVO
Collected by (print): OG/BH	Site/Facility ID # CULEBRA BLUFF	P.O. # —
Collected by (signature): BM	Rush? (Lab MUST be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) X Three Day	Quote # —
Immediately Packed on Ice N___ Y___	Date Results Needed	

Analysis / Container / Preservative

Chain of Custody Page 5 of 5

Pace — PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # H455251

Table # L1456920

Acctnum: ALTAMIRAATX

Template: T201884

Prelogin: P900101

PM: 134 - Mark W. Beasley

PB: 1/20/22 tdd

Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4ozClr-NoPres	DRONM 4ozClr-NoPres	GRO 40mlAmb/MeOH10ml/Syr	V8260BTEX 40mlAmb/MeOH10ml/Syr	Remarks	Sample # (lab only)
SB-10 (0-1')	G	SS	0-1'	1/25/22	1612	2	X	X	X	X		31
SB-10 (1-2')	G	SS	1-2'	1/25/22	1615	2	X	X	X	X		32
SB-10 (2-3')	G	SS	2-3'	1/25/22	1619	2						33
SB-10 (3-4')	G	SS	3-4'	1/25/22	1623	2						34
SB-11 (0-1')	G	SS	0-1'	1/25/22	1631	2	X	X	X	X		35
SB-11 (1-2')	G	SS	1-2'	1/25/22	1633	2	X	X	X	X		36
SB-11 (2-3')	G	SS	2-3'	1/25/22	1636	2						37 -05
SB-11 (3-4')	G	SS	3-4'	1/25/22	1640	2						38 -06
		SS										
		SS										

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: DEEPER SAMPLES ON HOLD PENDING

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS X FedEx __ Courier _____

Tracking # 5489 4019 3820

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes (No) HCL / MeoH TBR	If preservation required by Login: Date/Time
BM	1/26/2022	1630		2	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: NSA 6.2 6.4 -0.2 6 76	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Veronica Jestuk	Date: 1/27/22 Time: 0900	Hold: Condition: NCF / (OK)

L1455251 *ALTAMIRAATX* relog

R3/R4/RX/EX

Relog the following as R4 due 2/7:

L1455251-08 CHLORIDE-300, transfer TS

L1455251-09 CHLORIDE-300, transfer TS

L1455251-16 CHLORIDE-300, GRO, DRONM, transfer TS

L1455251-27 CHLORIDE-300, transfer TS

L1455251-37 CHLORIDE-300, transfer TS

L1455251-38 CHLORIDE-300, transfer TS

From: Bryan Haney <Bryan.Haney@Altamira-us.com>

Sent: Wednesday, February 02, 2022 10:22 AM

To: Mark Beasley <Mark.Beasley@pacelabs.com>

Subject: RE: Pace Analytical National Level II Report for NVONM2103 PHASE 001 Novo Culebra Bluff L1455251

CAUTION: This email originated from outside Pace Analytical. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Mark,

I need to add the following analysis for this report:

SB-2 (3-4') – chlorides

SB-2 (4-5') – chlorides

Sb-3 (2-3') – chlorides and TPH

SB-9 (2-2.5') – chlorides

SB-11 (2-3') – chlorides

SB-11 (3-4') – chlorides

Once complete can you generate a revised invoice that includes all analysis for this one?

Bryan Haney, TX P.G

Senior Project Manager | 361.658.3126 |
altamira-us.com
**

![A picture containing text

--- Email body truncated due to large size. Full email body added as attachment. ---

Time estimate: oh **Time spent:** oh

Members

MB Mark Beasley (responsible)

ANALYTICAL REPORT

February 07, 2022

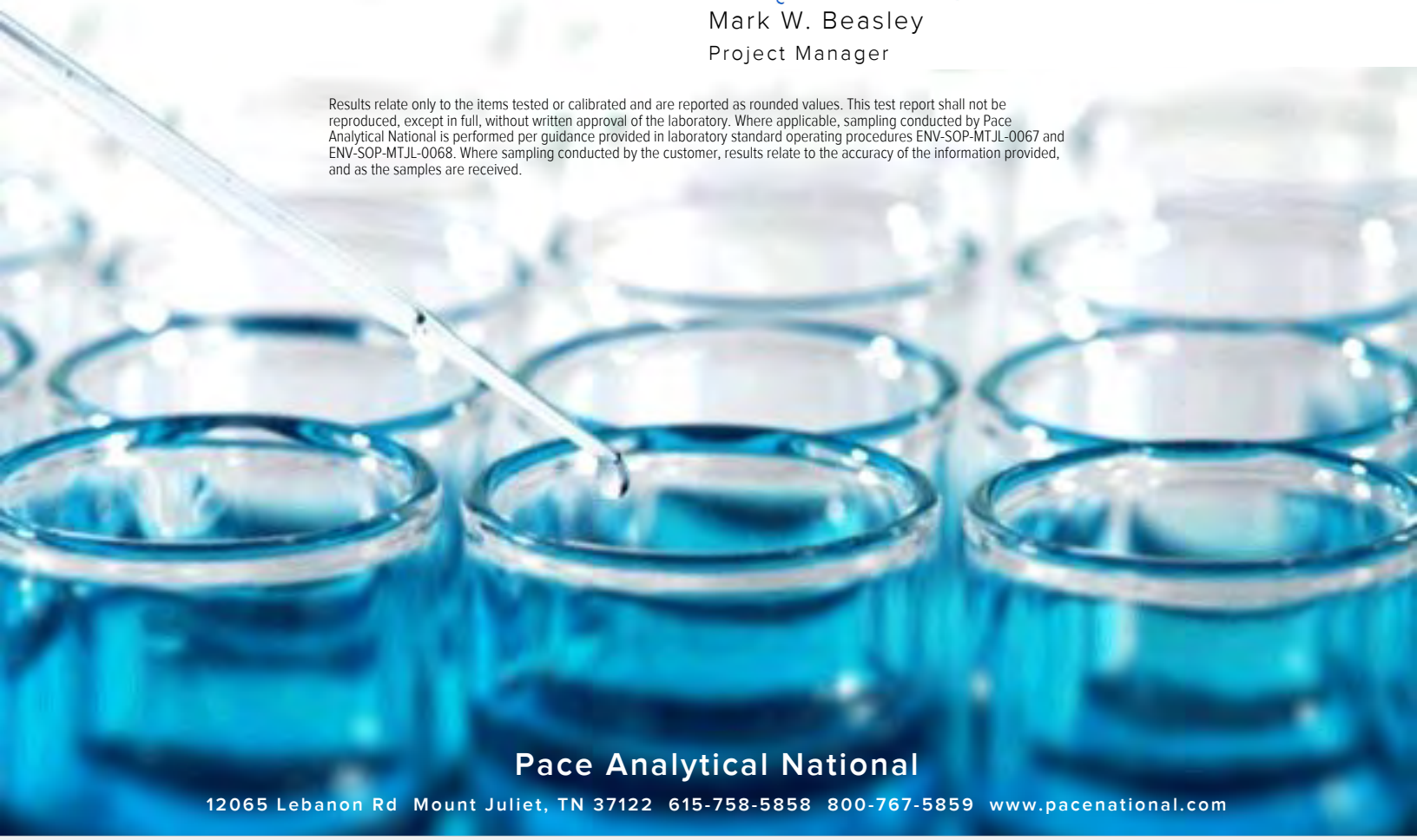
Altamira - Angleton, TX

Sample Delivery Group:	L1457010
Samples Received:	01/27/2022
Project Number:	NVONM2103 PHASE 001
Description:	Novo Culebra Bluff
Site:	CULEBRA BLUFF
Report To:	Bryan Haney 4001 Technology Drive, Ste 120 Angleton, TX 77515

Entire Report Reviewed By:

Mark W. Beasley
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

SB-13(3-4') L1457010-01 Solid

Collected by: BH/OG | Collected date/time: 01/26/22 08:51 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1812410	1	02/03/22 07:42	02/03/22 07:53	CMK	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1812273	1	02/02/22 23:25	02/03/22 02:56	LBR	Mt. Juliet, TN

SB-17(2-3') L1457010-02 Solid

Collected by: BH/OG | Collected date/time: 01/26/22 10:27 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1812658	1	02/04/22 09:28	02/04/22 09:45	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1812747	1	02/03/22 21:05	02/04/22 00:45	LBR	Mt. Juliet, TN

SB-18(2-3') L1457010-03 Solid

Collected by: BH/OG | Collected date/time: 01/26/22 11:11 | Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1812410	1	02/03/22 07:42	02/03/22 07:53	CMK	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1812273	1	02/02/22 23:25	02/03/22 04:00	LBR	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Mark W. Beasley
Project Manager

Laboratory Data Package Cover Page

This data package consists of this signature page, the laboratory review checklist, and the following reportable data as applicable:

R1 - Field chain-of-custody documentation;

R2 - Sample identification cross-reference;

R3 - Test reports (analytical data sheets) for each environmental sample that includes:

a. Items consistent with NELAC Chapter 5,

b. dilution factors,

c. preparation methods,

d. cleanup methods, and

e. if required for the project, tentatively identified compounds (TICs).

R4 - Surrogate recovery data including:

a. Calculated recovery (%R), and

b. The laboratory's surrogate QC limits.

R5 - Test reports/summary forms for blank samples;

R6 - Test reports/summary forms for laboratory control samples (LCSs) including:

a. LCS spiking amounts,

b. Calculated %R for each analyte, and

c. The laboratory's LCS QC limits.

R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

a. Samples associated with the MS/MSD clearly identified,

b. MS/MSD spiking amounts,

c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,

d. Calculated %Rs and relative percent differences (RPDs), and

e. The laboratory's MS/MSD QC limits

R8 - Laboratory analytical duplicate (if applicable) recovery and precision:

a. The amount of analyte measured in the duplicate,

b. The calculated RPD, and

c. The laboratory's QC limits for analytical duplicates.

R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.

R10 - Other problems or anomalies.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Mark W. Beasley
Project Manager

Laboratory Review Checklist: Reportable Data

Laboratory Name: Pace Analytical National	LRC Date: 02/07/2022 11:10
Project Name: Novo Culebra Bluff	Laboratory Job Number: L1457010-01, 02 and 03
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1812410, WG1812273, WG1812747 and WG1812658

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			1
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?	X				
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?	X				
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			2
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Revised May 2010

Laboratory Review Checklist: Supporting Data

Laboratory Name: Pace Analytical National	LRC Date: 02/07/2022 11:10
Project Name: Novo Culebra Bluff	Laboratory Job Number: L1457010-01, 02 and 03
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1812410, WG1812273, WG1812747 and WG1812658

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?			X		
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?			X		
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?			X		
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Revised May 2010

Laboratory Review Checklist: Exception Reports

Laboratory Name: Pace Analytical National	LRC Date: 02/07/2022 11:10
Project Name: Novo Culebra Bluff	Laboratory Job Number: L1457010-01, 02 and 03
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1812410, WG1812273, WG1812747 and WG1812658

ER #[1]	Description
1	300.0 WG1812273 R3756686-3, 5 and 4: The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL). 300.0 WG1812747 R3757047-5 and 6: The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
2	300.0 WG1812747 Chloride: Percent Recovery is outside of established control limits.

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.7		1	02/03/2022 07:53	WG1812410

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	234		9.51	20.0	20.7	1	02/03/2022 02:56	WG1812273

SB-17(2-3')
Collected date/time: 01/26/22 10:27
L1457010

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.1		1	02/04/2022 09:45	WG1812658

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	U		9.77	20.0	21.2	1	02/04/2022 00:45	WG1812747

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	92.8		1	02/03/2022 07:53	WG1812410

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	12.5	J	9.91	20.0	21.5	1	02/03/2022 04:00	WG1812273

Method Blank (MB)

(MB) R3756645-1 02/03/22 07:53

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.000			

L1457254-15 Original Sample (OS) • Duplicate (DUP)

(OS) L1457254-15 02/03/22 07:53 • (DUP) R3756645-3 02/03/22 07:53

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	84.7	80.7	1	4.89		10

Laboratory Control Sample (LCS)

(LCS) R3756645-2 02/03/22 07:53

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3757191-1 02/04/22 09:45

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.000			

L1456920-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1456920-03 02/04/22 09:45 • (DUP) R3757191-3 02/04/22 09:45

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	93.9	94.1	1	0.157		10

Laboratory Control Sample (LCS)

(LCS) R3757191-2 02/04/22 09:45

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.1	100	85.0-115	

Method Blank (MB)

(MB) R3756686-1 02/03/22 00:33

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	U		9.20	20.0

L1456953-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1456953-01 02/03/22 01:21 • (DUP) R3756686-3 02/03/22 01:36

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	2070	1990	1	3.85	E	20

L1457066-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1457066-06 02/03/22 05:35 • (DUP) R3756686-7 02/03/22 05:51

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	60.4	58.0	1	4.15		20

Laboratory Control Sample (LCS)

(LCS) R3756686-2 02/03/22 00:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	200	211	106	90.0-110	

L1456953-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1456953-01 02/03/22 01:21 • (MS) R3756686-4 02/03/22 01:52 • (MSD) R3756686-5 02/03/22 02:08

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	877	2070	2970	2940	104	99.8	1	80.0-120	E	E	1.10	20

Method Blank (MB)

(MB) R3757047-1 02/03/22 22:10

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	U		9.20	20.0

L1457505-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1457505-04 02/04/22 01:23 • (DUP) R3757047-3 02/04/22 01:32

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	281	262	1	6.69		20

L1457505-14 Original Sample (OS) • Duplicate (DUP)

(OS) L1457505-14 02/04/22 03:27 • (DUP) R3757047-4 02/04/22 03:36

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	629	609	1	3.25		20

Laboratory Control Sample (LCS)

(LCS) R3757047-2 02/03/22 22:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	200	195	97.4	90.0-110	

L1457505-14 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1457505-14 02/04/22 03:27 • (MS) R3757047-5 02/04/22 03:46 • (MSD) R3757047-6 02/04/22 04:14

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	500	629	1200	1240	114	123	1	80.0-120	E	E J5	3.61	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MQL (dry)	Method Quantitation Limit.
MQL	Method Quantitation Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
SDL	Sample Detection Limit.
SDL (dry)	Sample Detection Limit.
U	Not detected at the Sample Detection Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:	Altamira - Angleton, TX 4001 Technology Drive, Ste 120 Angleton, TX 77515
Billing Information:	Bryan Haney 4001 Technology Drive, Ste 120 Angleton, TX 77515
Pres Chk	
Report to:	Bryan Haney
Email To:	bryan.haney@altamira-us.com;Orlando.Gonzalez@Altamira-us.com
Project Description:	Novo ~~Gusting Pad D Release~~ CULEBRA BLUFF
City/State Collected:	LOVING NM
Please Circle:	PT (MT) CT ET
Phone:	361-658-3126
Client Project #	NVONM2103 PHASE 001
Lab Project #	ALTAMIRAATX-NOVO
Collected by (print):	BH/OG
Site/Facility ID #	CULEBRA BLUFF
P.O. #	—
Collected by (signature):	[signature]
Quote #	—
Immediately Packed on Ice	N ___ Y ✓
Rush? (Lab MUST Be Notified)	___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ✓ Three Day
Date Results Needed	

Analysis / Container / Preservative

Chain of Custody Page 1 of 3

Pace® PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # 1455262 AV 2/2/22
G076
Acctnum: L1457010
Template: T201884
Prelogin: P900101
PM: 134 - Mark W. Beasley
PB: 1/20/22 [illegible]
Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4ozClr-NoPres	DRONM 4ozClr-NoPres	GRO 40mlAmb/MeOH10ml/Syr	V8260BTEX 40mlAmb/MeOH10ml/Syr							Remarks	Sample # (lab only)
SB-13 (0-1')	G	SS	0-1'	1/26/22	841	2	X	X	X	X								~~01~~
SB-13 (1-2')	G	SS	1-2'	1/26/22	844	2	X	X	X	X								~~02~~
SB-13 (2-3')	G	SS	2-3'	1/26/22	848	2												~~03~~
SB-13 (3-4')	G	SS	3-4'	1/26/22	851	2												~~04~~ -01
SB-12 (0-1')	G	SS	0-1'	1/26/22	859	2	X	X	X	X								~~05~~
SB-15 (0-1')	G	SS	0-1'	1/26/22	914	2	X	X	X	X								~~06~~
SB-15 (1-2')	G	SS	1-2'	1/26/22	917	2	X	X	X	X								~~07~~
SB-16 (0-1')	G	SS	0-1'	1/26/22	927	2	X	X	X	X								~~08~~
SB-14 (0-1')	G	SS	0-1'	1/26/22	935	2	X	X	X	X								~~09~~
SB-19 (0-1')	G	SS	0-1'	1/26/22	956	2	X	X	X	X								~~10~~

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other ________

Remarks: DEEPER SAMPLES ON HOLD PENDING

pH ______ Temp ______
Flow ______ Other ______

Samples returned via: __ UPS _✓_ FedEx __ Courier ________

Tracking # 5489 4019 3810

Sample Receipt Checklist
COC Seal Present/Intact: _NP _Y _N
COC Signed/Accurate: ✓Y _N
Bottles arrive intact: ✓Y _N
Correct bottles used: ✓Y _N
Sufficient volume sent: ✓Y _N
If Applicable
VOA Zero Headspace: ✓Y _N
Preservation Correct/Checked: ✓Y _N
RAD Screen <0.5 mR/hr: ✓Y _N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)		
[signature]	1/26/2022	1630		Trip Blank Received: Yes (No) HCL / MeOH TBR	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C BAA2 3.8+.0=3.8 Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 1/27/22 Time: 0900	Hold: Condition: NCF / (OK)

Chain of Custody Page 2 of 3

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

Company Name/Address:	Altamira - Angleton, TX 4001 Technology Drive, Ste 120 Angleton, TX 77515
Billing Information:	Bryan Haney 4001 Technology Drive, Ste 120 Angleton, TX 77515
Report to:	Bryan Haney
Email To:	bryan.haney@altamira-us.com;Orlando.Gonzalez@Altamira-us.com
Project Description:	Novo ~~Ovation P&A Release~~ CULEBRA BLUFF
City/State Collected:	LOVING, NM
Please Circle:	PT (MT) CT ET
Phone:	361-658-3126
Client Project #	NVONM2103 PHASE 001
Lab Project #	ALTAMIRAATX-NOVO
Collected by (print):	OB/BH
Site/Facility ID #	CULEBRA BLUFF
P.O. #	—
Collected by (signature):	
Immediately Packed on Ice N ___ Y ✓	
Rush? (Lab MUST Be Notified)	___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) X Three Day
Quote #	—
Date Results Needed	
Pres Chk	

Acctnum: ALTAMIRAATX
Template: T201884
Prelogin: P900101
PM: 134 - Mark W. Beasley
PB: 1/20/22 tdd
Shipped Via: FedEX Ground

SDG # L1455267
Table # L1457010

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4ozClr-NoPres	DRONM 4ozClr-NoPres	GRO 40mlAmb/MeOH10ml/Syr	V8260BTEX 40mlAmb/MeOH10ml/Syr	Remarks	Sample # (lab only)
SB-20 (0-1')	G	SS	0-1'	1/26/22	1005	2	X	X	X	X		11
SB-20 (1-2')	G	SS	1-2'	1/26/22	1008	2	X	X	X	X		12
SB-20 (2-3')	G	SS	2-3'	1/26/22	1011	2						13
SB-17 (0-1')	G	SS	0-1'	1/26/22	1022	2	X	X	X	X		14
SB-17 (1-2')	G	SS	1-2'	1/26/22	1025	2	X	X	X	X		15
SB-17 (2-3')	G	SS	2-3'	1/26/22	1027	2						16 -02
SB-21 (0-1')	G	SS	0-1'	1/26/22	1044	2	X	X	X	X		17
SB-21 (1-2')	G	SS	1-2'	1/26/22	1048	2	X	X	X	X		18
~~SB18~~		SS										
~~SB~~		SS										

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: DISPOSAL SAMPLES ON HOLD PENDING

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS X FedEx __ Courier _____

Tracking # 5489 4019 3810

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Relinquished by: (Signature)	Date: 1/26/2022	Time: 1630	Received by: (Signature)	Trip Blank Received: Yes (No) HCL / MeoH TBR
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: BAA2 3.8+0=3.8 — If preservation required by Login: Date/Time
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 1/27/22 Time: 0900 — Hold: — Condition: NCF / OK

Company Name/Address:
Altamira - Angleton, TX
4001 Technology Drive, Ste 120
Angleton, TX 77515

Billing Information:
Bryan Haney
4001 Technology Drive, Ste 120
Angleton, TX 77515

Pres Chk

Report to: Bryan Haney

Email To: bryan.haney@altamira-us.com;Orlando.Gonzalez@Altamira-us.com

Project Description: Novo ~~Ovation Pad C Release~~ CULEBRA BLUFF

City/State Collected: LUING, NM

Please Circle: PT (MT) CT ET

Phone: 361-658-3126

Client Project # NVONM2107 PHASE 001

Lab Project # ALTAMIRAATX-NOVO

Collected by (print): CG | BH

Site/Facility ID # CULEBRA BLUFF

P.O. # —

Collected by (signature): BM BM

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
X Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote # —

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE:300 4ozClr-NoPres	DRONM 4ozClr-NoPres	GRO 40mlAmb/MeOH10ml/Syr	V8260BTEX 40mlAmb/MeOH10ml/Syr	Remarks	Sample # (lab only)
SB-18 (0-1')	G	SS	0-1'	1/26/22	1104	2	X	X	X	X		~~19~~
SB-18 (1-2')	G	SS	1-2'	1/26/22	1107	2	X	X	X	X		~~20~~
SB-18 (2-3')	G	SS	2-3'	1/26/22	1111	2						~~21~~ -03
		SS										
		SS										
		SS										
		SS										
		SS										
		SS										
		SS										

Analysis / Container / Preservative

Chain of Custody Page 2 of 2

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG# ~~1455262~~
Table # L1457010
Acctnum: ALTAMIRAATX
Template: T201884
Prelogin: P900101
PM: 134 - Mark W. Beasley
PB:
Shipped Via: FedEX Ground

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: DO NOT SAMPLE ON HOLD PENDING

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS __ FedEx ✓ Courier _____

Tracking # 5489 4019 3810

Sample Receipt Checklist
COC Seal Present/Intact: NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: ✓Y __N
RAD Screen <0.5 mR/hr: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes (No) HCL / MeoH TBR	
BM BM	1/26/2022	1630			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: BAAZ 3.8+0=3.8	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 1/27/22 Time: 0900	Hold: Condition: NCF / (OK)

L1455262 *ALTAMIRAATX* relog

R3/R4/RX/EX

Relog the following as R4 due 2/7:

L1455262-04 CHLORIDE-300, transfer TS

L1455262-16 CHLORIDE-300, transfer TS

L1455262-21 CHLORIDE-300, transfer TS

From: Bryan Haney <Bryan.Haney@Altamira-us.com>

Sent: Wednesday, February 02, 2022 10:32 AM

To: Mark Beasley <Mark.Beasley@pacelabs.com>

Subject: RE: Pace Analytical National Level II Report for NVONM2103 PHASE 001 Novo Culebra Bluff L1455262

CAUTION: This email originated from outside Pace Analytical. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Mark,

Need to add the following to this report and please send an updated/revised invoice (I am deleting the prior invoice). Thank you

SB-13 (3-4') – chlorides

SB-17 (2-3') – chlorides

SB-18 (2-3') – chlorides

Bryan Haney, TX P.G

Senior Project Manager | 361.658.3126 |
altamira-us.com
**

--- Email body truncated due to large size. Full email body added as attachment. ---

Time estimate: oh **Time spent:** oh

Members

MB Mark Beasley (responsible)

ANALYTICAL REPORT

February 28, 2022

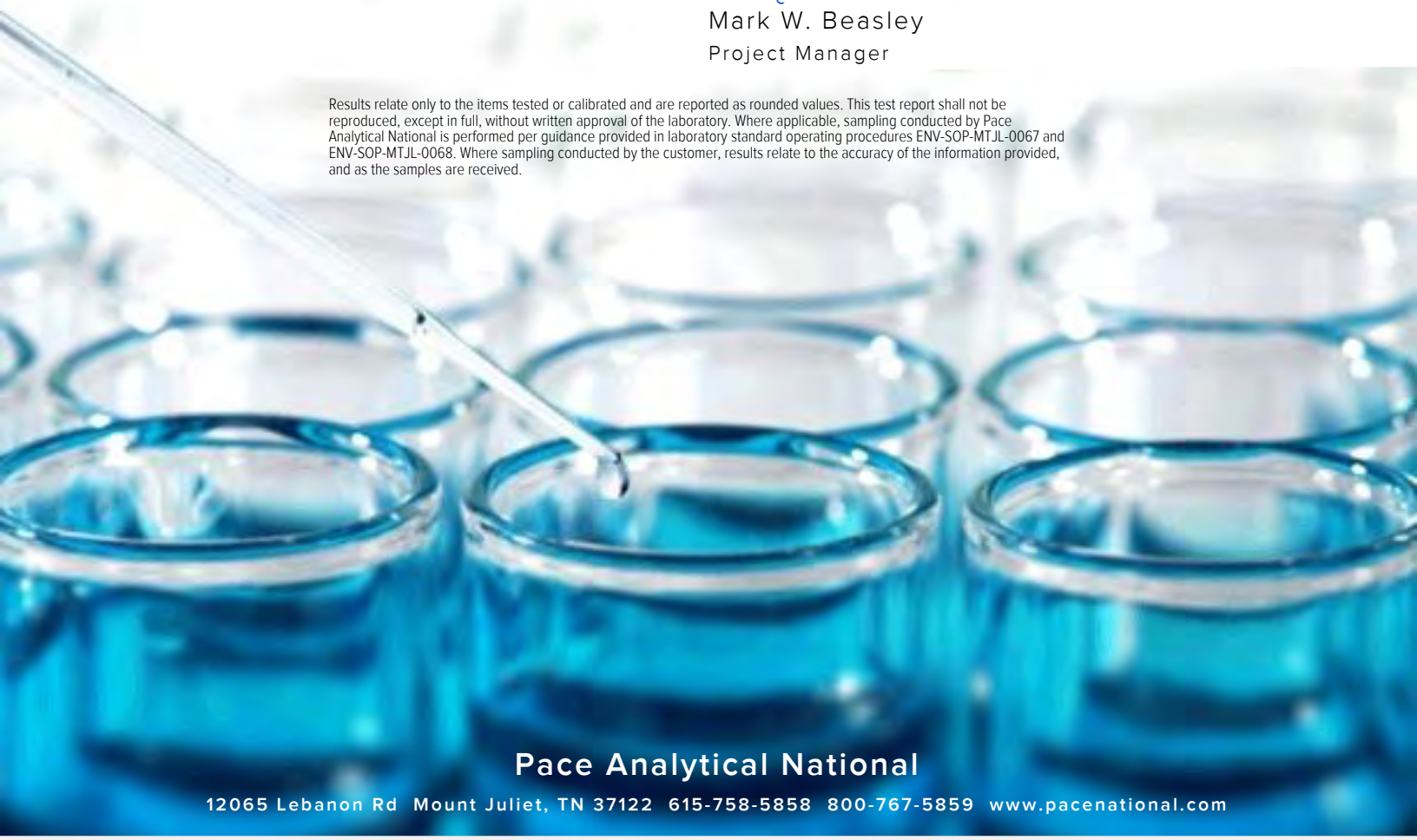
Altamira - Angleton, TX

Sample Delivery Group:	L1463701
Samples Received:	01/27/2022
Project Number:	NVONM2103 PHASE 001
Description:	Novo Culebra Bluff
Site:	CULEBRA BLUFF
Report To:	Bryan Haney 4001 Technology Drive, Ste 120 Angleton, TX 77515

Entire Report Reviewed By:

Mark W. Beasley
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

SB-2(6-7') L1463701-01 Solid

Collected by: BH/OG
Collected date/time: 01/25/22 11:29
Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1823149	1	02/25/22 14:28	02/25/22 14:35	CMK	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1821941	5	02/22/22 13:02	02/22/22 16:19	KEG	Mt. Juliet, TN

SB-2(8-9') L1463701-02 Solid

Collected by: BH/OG
Collected date/time: 01/25/22 11:33
Received date/time: 01/27/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1823149	1	02/25/22 14:28	02/25/22 14:35	CMK	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1821941	5	02/22/22 13:02	02/22/22 17:19	KEG	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Mark W. Beasley
Project Manager

This data package consists of this signature page, the laboratory review checklist, and the following reportable data as applicable:

R1 - Field chain-of-custody documentation;

R2 - Sample identification cross-reference;

R3 - Test reports (analytical data sheets) for each environmental sample that includes:

a. Items consistent with NELAC Chapter 5,

b. dilution factors,

c. preparation methods,

d. cleanup methods, and

e. if required for the project, tentatively identified compounds (TICs).

R4 - Surrogate recovery data including:

a. Calculated recovery (%R), and

b. The laboratory's surrogate QC limits.

R5 - Test reports/summary forms for blank samples;

R6 - Test reports/summary forms for laboratory control samples (LCSs) including:

a. LCS spiking amounts,

b. Calculated %R for each analyte, and

c. The laboratory's LCS QC limits.

R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

a. Samples associated with the MS/MSD clearly identified,

b. MS/MSD spiking amounts,

c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,

d. Calculated %Rs and relative percent differences (RPDs), and

e. The laboratory's MS/MSD QC limits

R8 - Laboratory analytical duplicate (if applicable) recovery and precision:

a. The amount of analyte measured in the duplicate,

b. The calculated RPD, and

c. The laboratory's QC limits for analytical duplicates.

R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.

R10 - Other problems or anomalies.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Mark W. Beasley
Project Manager

Laboratory Review Checklist: Reportable Data

Laboratory Name: Pace Analytical National	LRC Date: 02/28/2022 13:34
Project Name: Novo Culebra Bluff	Laboratory Job Number: L1463701-01 and 02
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1821941 and WG1823149

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?	X				
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?	X				
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Supporting Data

Laboratory Name: Pace Analytical National	LRC Date: 02/28/2022 13:34
Project Name: Novo Culebra Bluff	Laboratory Job Number: L1463701-01 and 02
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1821941 and WG1823149

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?			X		
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?			X		
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?			X		
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Revised May 2010

Laboratory Review Checklist: Exception Reports

Laboratory Name: Pace Analytical National	LRC Date: 02/28/2022 13:34
Project Name: Novo Culebra Bluff	Laboratory Job Number: L1463701-01 and 02
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1821941 and WG1823149

ER #[1]	Description
1	9056A WG1821941 Chloride: Percent Recovery is outside of established control limits.

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.1		1	02/25/2022 14:35	WG1823149

Wet Chemistry by Method 9056A

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	1570	J6	48.9	20.0	106	5	02/22/2022 16:19	WG1821941

SB-2(8-9')
Collected date/time: 01/25/22 11:33
L1463701

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	88.4		1	02/25/2022 14:35	WG1823149

Wet Chemistry by Method 9056A

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	2380		52.0	20.0	113	5	02/22/2022 17:19	WG1821941

1 Cp
2 Tc
3 Ss
4 Cn
5 Tr
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

Method Blank (MB)

(MB) R3764500-1 02/25/22 14:35

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00200			

L1463701-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1463701-02 02/25/22 14:35 • (DUP) R3764500-3 02/25/22 14:35

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	88.4	88.5	1	0.149		10

Laboratory Control Sample (LCS)

(LCS) R3764500-2 02/25/22 14:35

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3762847-1 02/22/22 15:41

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	U		9.20	20.0

L1463701-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1463701-01 02/22/22 16:19 • (DUP) R3762847-3 02/22/22 16:34

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	1570	1380	5	12.8		15

Laboratory Control Sample (LCS)

(LCS) R3762847-2 02/22/22 15:56

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	200	198	99.2	80.0-120	

L1463701-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1463701-01 02/22/22 16:19 • (MS) R3762847-4 02/22/22 16:49 • (MSD) R3762847-5 02/22/22 17:04

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	531	1570	1990	1950	77.4	71.4	5	80.0-120	J6	J6	1.62	15

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MQL (dry)	Method Quantitation Limit.
MQL	Method Quantitation Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
SDL	Sample Detection Limit.
SDL (dry)	Sample Detection Limit.
U	Not detected at the Sample Detection Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:	Billing Information:	Pres Chk
Altamira - Angleton, TX 4001 Technology Drive, Ste 120 Angleton, TX 77515	Bryan Haney 4001 Technology Drive, Ste 120 Angleton, TX 77515	
Report to: Bryan Haney	Email To: bryan.haney@altamira-us.com;Orlando.Gonzalez@Altamira-us.com	
Project Description: Novo ~~Orphan Well Closure~~ CULEBRA BLUFF	City/State Collected: LOVING, NM	Please Circle: PT (MT) CT ET
Phone: 361-658-3126	Client Project # NVONM2103 PHASE 001	Lab Project # ALTAMIRAATX-NOVO
Collected by (print): BK / OG	Site/Facility ID # CULEBRA BLUFF	P.O. # —
Collected by (signature): BM MM Immediately Packed on Ice N ___ Y ✓	Rush? (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) X Three Day Date Results Needed	Quote # —

Analysis / Container / Preservative

Chain of Custody Page 2 of 5

Pace
PEOPLE ADVANCING SCIENCE
L1463701
MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1455251 NV 2/21/22
Table #
Acctnum: ALTAMIRAATX
Template: T201884
Prelogin: P900101
PM: 134 - Mark W. Beasley
PB: Undesignated
Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4oz Clr-NoPres	DRONM 4oz Clr-NoPres	GRO 40mlAmb/MeOH10ml/Syr	V8260BTEX 40mlAmb/MeOH10ml/Syr	Remarks	Sample # (lab only)
SB-2 (0-1')	G	SS	0-1'	1/25/22	1111	2	X	X	X	X		~~06~~
SB-2 (2-3')	G	SS	2-3'	1/25/22	1119	2	X	X	X	X		~~07~~
SB2 (3-4')	G	SS	3-4'	1/25/22	1121	2						~~08~~
SB-2 (4-5')	G	SS	4-5'	1/25/22	1123	2						~~09~~
SB-2 (6-7')	G	SS	6-7'	1/25/22	1129	2						~~10~~ -01
SB-2 (8-9')	G	SS	8-9'	1/25/22	1133	2						~~11~~ -02
SB2 (9-10')	G	SS	9-10'	1/25/22	1135	2						~~12~~
SB-2 (14-15')	G	SS	14-15'	1/25/22	1140	2						~~13~~
		SS										
		SS										

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: DISPOSAL SAMPLES PENDING ANALYSIS

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____
Tracking # 5489 4019 3820

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: (Yes) No HCL / MeOH TBR	Sample Receipt Checklist
BM MM	1/26/2022	1630		2	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: NSH6 2.6+0=2.6 TR	If preservation required by Login: Date/Time
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 1/27/22 Time: 0900	Hold: Condition: NCF / OK

L1455251 *ALTAMIRAATX* relog

R5

Relog L1455251-10 & -11 for CHLORIDE & TS. Log as R5 due 2/28.

-----Original Message-----
From: Bryan Haney <Bryan.Haney@Altamira-us.com>
Sent: Saturday, February 19, 2022 11:24 AM
To: Mark Beasley <Mark.Beasley@pacelabs.com>
Subject: RE: Pace Analytical National Login for NVONM2103 PHASE 001 Novo Culebra Bluff L1455251

CAUTION: This email originated from outside Pace Analytical. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good point, sorry

SB-2 - (6-7) and (8-9')

Thank you

Bryan Haney, TX P.G
Senior Project Manager | 361.658.3126 | altamira-us.com

NOTICE-- The contents of this email and any attachments may contain confidential, privileged, and/or legally protected information and are for the sole use of the addressee(s). Any review or distribution by others is strictly prohibited. If you are not the intended recipient, please contact the sender immediately and delete any copies.

P Please consider the environment before printing this email

Time estimate: oh **Time spent:** oh

Members

MB Mark Beasley (responsible)

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

May 12, 2022

BRYAN HANEY

ALTAMIRA - US

14229 PUNTA BONAIRE DR.

CORPUS CHRISTI, TX 78418

RE: NOVO CULEBRA BLUFF

Enclosed are the results of analyses for samples received by the laboratory on 04/29/22 10:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-21-14. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB - 2 (1-2)	H221766-01	Soil	28-Apr-22 10:28	29-Apr-22 10:35
SB - 2 (3-4)	H221766-03	Soil	28-Apr-22 10:30	29-Apr-22 10:35
SB - 2 (6-7)	H221766-05	Soil	28-Apr-22 10:34	29-Apr-22 10:35
SB - 2 (9-10)	H221766-07	Soil	28-Apr-22 10:36	29-Apr-22 10:35
SB - 2 (11-12)	H221766-09	Soil	28-Apr-22 10:41	29-Apr-22 10:35
SB - 2 (13-14)	H221766-11	Soil	28-Apr-22 10:43	29-Apr-22 10:35
SB - 5 (3-4)	H221766-13	Soil	28-Apr-22 09:07	29-Apr-22 10:35
SB - 5 (4-5)	H221766-14	Soil	28-Apr-22 09:09	29-Apr-22 10:35
SB - 5 (6-7)	H221766-15	Soil	28-Apr-22 09:14	29-Apr-22 10:35
SB - 5 (8-9)	H221766-16	Soil	28-Apr-22 09:19	29-Apr-22 10:35
SB - 6 (3-4)	H221766-20	Soil	28-Apr-22 14:20	29-Apr-22 10:35
SB - 6 (4-5)	H221766-21	Soil	28-Apr-22 14:21	29-Apr-22 10:35
SB - 6 (6-7)	H221766-22	Soil	28-Apr-22 14:24	29-Apr-22 10:35
SB - 6 (8-9)	H221766-23	Soil	28-Apr-22 14:26	29-Apr-22 10:35
SB - 7 (3-4)	H221766-25	Soil	28-Apr-22 15:16	29-Apr-22 10:35
SB - 8 (2-3)	H221766-30	Soil	28-Apr-22 13:46	29-Apr-22 10:35
SB - 8 (3-4)	H221766-31	Soil	28-Apr-22 13:50	29-Apr-22 10:35
SB - 8 (4-5)	H221766-32	Soil	28-Apr-22 13:53	29-Apr-22 10:35
SB - 8 (8-9)	H221766-34	Soil	28-Apr-22 13:56	29-Apr-22 10:35
SB - 8 (10-11)	H221766-35	Soil	28-Apr-22 13:58	29-Apr-22 10:35
SB - 8 (12-13)	H221766-36	Soil	28-Apr-22 14:00	29-Apr-22 10:35
SB - 9 (3-4)	H221766-38	Soil	27-Apr-22 16:44	29-Apr-22 10:35
SB - 9 (4-5)	H221766-39	Soil	27-Apr-22 16:56	29-Apr-22 10:35
SB - 11 (4-5)	H221766-45	Soil	28-Apr-22 15:45	29-Apr-22 10:35
SB - 11 (6-7)	H221766-46	Soil	28-Apr-22 15:48	29-Apr-22 10:35
SB - 11 (8-9)	H221766-47	Soil	28-Apr-22 15:49	29-Apr-22 10:35
SB - 11 (10-11)	H221766-48	Soil	28-Apr-22 15:52	29-Apr-22 10:35

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 12 (1-2)	H221766-51	Soil	28-Apr-22 11:18	29-Apr-22 10:35
SB - 12 (2-3)	H221766-52	Soil	28-Apr-22 11:19	29-Apr-22 10:35
SB - 12 (3-4)	H221766-53	Soil	28-Apr-22 11:20	29-Apr-22 10:35
SB - 18 (4-5)	H221766-60	Soil	28-Apr-22 16:31	29-Apr-22 10:35
SB - 18 (6-7)	H221766-62	Soil	28-Apr-22 16:38	29-Apr-22 10:35
SB - 22 (0-1)	H221766-64	Soil	28-Apr-22 09:49	29-Apr-22 10:35
SB - 22 (2-3)	H221766-66	Soil	28-Apr-22 09:51	29-Apr-22 10:35
SB - 22 (3-4)	H221766-67	Soil	28-Apr-22 09:52	29-Apr-22 10:35
SB - 22 (6-7)	H221766-69	Soil	28-Apr-22 09:54	29-Apr-22 10:35
SB - 22 (8-9)	H221766-70	Soil	28-Apr-22 09:55	29-Apr-22 10:35
SB - 23 (0-1)	H221766-74	Soil	28-Apr-22 13:03	29-Apr-22 10:35
SB - 23 (2-3)	H221766-76	Soil	28-Apr-22 13:05	29-Apr-22 10:35
SB - 23 (3-4)	H221766-77	Soil	28-Apr-22 13:14	29-Apr-22 10:35

05/05/22 - Client added Chlorides on 05/03/22 (See COC). This is the revised report and will replace the one sent on 05/02/22.

05/10/22 - Client added Chlorides on 05/05/22 (See COC). This is the 2nd revision of the report and will replace the one sent on 05/05/22.

05/12/22 - Client added Chlorides on 05/10/22 (See COC). This is the 3rd revision of the report and will replace the one sent on 05/10/22.

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 2 (1-2)

H221766-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**5360**		16.0	mg/kg	4	2050210	GM	02-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 2 (3-4)

H221766-03 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**2640**		16.0	mg/kg	4	2050334	AC	03-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 2 (6-7)

H221766-05 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**2920**		16.0	mg/kg	4	2050334	AC	03-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 2 (9-10)

H221766-07 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**3200**		16.0	mg/kg	4	2050637	AC	06-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 2 (11-12)

H221766-09 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**3520**		16.0	mg/kg	4	2050637	AC	06-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 2 (13-14)

H221766-11 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**480**		16.0	mg/kg	4	2051123	GM	11-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 5 (3-4)

H221766-13 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**1800**		16.0	mg/kg	4	2050210	GM	02-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 5 (4-5)

H221766-14 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**1060**		16.0	mg/kg	4	2050334	AC	03-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 5 (6-7)

H221766-15 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**768**		16.0	mg/kg	4	2050637	AC	06-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 5 (8-9)

H221766-16 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**320**		16.0	mg/kg	4	2050637	AC	06-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 6 (3-4)

H221766-20 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**1060**		16.0	mg/kg	4	2050210	GM	02-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 6 (4-5)

H221766-21 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**1170**		16.0	mg/kg	4	2050334	AC	03-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 6 (6-7)

H221766-22 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**416**		16.0	mg/kg	4	2050637	AC	06-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 6 (8-9)

H221766-23 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**128**		16.0	mg/kg	4	2050637	AC	06-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 7 (3-4)

H221766-25 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**480**		16.0	mg/kg	4	2050210	GM	02-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 8 (2-3)

H221766-30 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**3280**		16.0	mg/kg	4	2050210	GM	02-May-22	4500-Cl-B	

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 8 (3-4)

H221766-31 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**2320**		16.0	mg/kg	4	2050334	AC	03-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 8 (4-5)

H221766-32 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**3000**		16.0	mg/kg	4	2050334	AC	03-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 8 (8-9)

H221766-34 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**864**		16.0	mg/kg	4	2050637	AC	06-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 8 (10-11)

H221766-35 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**768**		16.0	mg/kg	4	2051123	GM	11-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 8 (12-13)

H221766-36 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**208**		16.0	mg/kg	4	2051123	GM	11-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 9 (3-4)

H221766-38 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**1400**		16.0	mg/kg	4	2050210	GM	02-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 9 (4-5)

H221766-39 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**64.0**		16.0	mg/kg	4	2050334	AC	04-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 11 (4-5)

H221766-45 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**800**		16.0	mg/kg	4	2050210	GM	02-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 11 (6-7)

H221766-46 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**1140**		16.0	mg/kg	4	2050334	AC	04-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 11 (8-9)

H221766-47 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**528**		16.0	mg/kg	4	2050637	AC	06-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 11 (10-11)

H221766-48 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**592**		16.0	mg/kg	4	2050637	AC	06-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 12 (1-2)

H221766-51 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**6960**		16.0	mg/kg	4	2050210	GM	02-May-22	4500-Cl-B	

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 12 (2-3)

H221766-52 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**3800**		16.0	mg/kg	4	2050334	AC	04-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 12 (3-4)

H221766-53 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**544**		16.0	mg/kg	4	2050334	AC	04-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 18 (4-5)

H221766-60 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**128**		16.0	mg/kg	4	2050210	GM	02-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 18 (6-7)

H221766-62 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**496**		16.0	mg/kg	4	2050334	AC	04-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 22 (0-1)

H221766-64 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**4160**		16.0	mg/kg	4	2050210	GM	02-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 22 (2-3)

H221766-66 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**3080**		16.0	mg/kg	4	2050334	AC	04-May-22	4500-Cl-B	

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 22 (3-4)

H221766-67 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**2720**		16.0	mg/kg	4	2050334	AC	04-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 22 (6-7)

H221766-69 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**64.0**		16.0	mg/kg	4	2050637	AC	06-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 22 (8-9)

H221766-70 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**240**		16.0	mg/kg	4	2050637	AC	06-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 23 (0-1)

H221766-74 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**6880**		16.0	mg/kg	4	2050210	GM	02-May-22	4500-Cl-B	

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 23 (2-3)

H221766-76 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**4320**		16.0	mg/kg	4	2050334	AC	04-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

SB - 23 (3-4)

H221766-77 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**400**		16.0	mg/kg	4	2050334	AC	04-May-22	4500-Cl-B	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2050210 - 1:4 DI Water										
Blank (2050210-BLK1)				Prepared & Analyzed: 02-May-22						
Chloride	ND	16.0	mg/kg							
LCS (2050210-BS1)				Prepared & Analyzed: 02-May-22						
Chloride	400	16.0	mg/kg	400		100	80-120			
LCS Dup (2050210-BSD1)				Prepared & Analyzed: 02-May-22						
Chloride	416	16.0	mg/kg	400		104	80-120	3.92	20	
Batch 2050334 - 1:4 DI Water										
Blank (2050334-BLK1)				Prepared & Analyzed: 03-May-22						
Chloride	ND	16.0	mg/kg							
LCS (2050334-BS1)				Prepared & Analyzed: 03-May-22						
Chloride	416	16.0	mg/kg	400		104	80-120			
LCS Dup (2050334-BSD1)				Prepared & Analyzed: 03-May-22						
Chloride	432	16.0	mg/kg	400		108	80-120	3.77	20	
Batch 2050637 - 1:4 DI Water										
Blank (2050637-BLK1)				Prepared & Analyzed: 06-May-22						
Chloride	ND	16.0	mg/kg							
LCS (2050637-BS1)				Prepared & Analyzed: 06-May-22						
Chloride	432	16.0	mg/kg	400		108	80-120			

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALTAMIRA - US 14229 PUNTA BONAIRE DR. CORPUS CHRISTI TX, 78418	Project: NOVO CULEBRA BLUFF Project Number: NVONM 2103 Project Manager: BRYAN HANEY Fax To:	Reported: 12-May-22 15:16

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2050637 - 1:4 DI Water										
LCS Dup (2050637-BSD1)				Prepared & Analyzed: 06-May-22						
Chloride	432	16.0	mg/kg	400		108	80-120	0.00	20	
Batch 2051123 - 1:4 DI Water										
Blank (2051123-BLK1)				Prepared & Analyzed: 11-May-22						
Chloride	ND	16.0	mg/kg							
LCS (2051123-BS1)				Prepared & Analyzed: 11-May-22						
Chloride	432	16.0	mg/kg	400		108	80-120			
LCS Dup (2051123-BSD1)				Prepared & Analyzed: 11-May-22						
Chloride	432	16.0	mg/kg	400		108	80-120	0.00	20	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories
101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Altamira - ALT		**BILL TO**	
Project Manager: Bryon Huney		P.O. #:	
Address: 14225 Punta Bonaire		Company: Novo Oil + Gas	
City: Corpus Christi	State: TX Zip: 78418	Attn:	
Phone #: 361 658 3126	Fax #: —	Address:	
Project #: NOVO NM 2103	Project Owner: Bryan Huney	City:	
Project Name: Novo Culebra Bluff		State:	Zip:
Project Location: Loving New Mexico		Phone #:	
Sampler Name: Alberto Gonzalez		Fax #:	

ANALYSIS REQUEST

Lab I.D. (FOR LAB USE ONLY) H221766	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	Chlorides (300.0 or equivalent)	Chlorides added 5/3/22	Chlorides added 5/5/22
1	SB-2 (1-2)	G	1			X					X		4/28/22	1028	X		
2	SB-2 (2-3)	G	1			X					X		4/28/22	1029	X		
3	SB-2 (3-4)	G	1			X					X		4/28/22	1030	X	X	
4	SB-2 (4-5)	G	1			X					X		4/28/22	1031	X		
5	SB-2 (6-7)	G	1			X					X		4/28/22	1034	X	X	
6	SB-2 (8-9)	G	1			X					X		4/28/22	1035	X		
7	SB-2 (9-10)	G	1			X					X		4/28/22	1036	X		
8	SB-2 (10-11)	G	1			X					X		4/28/22	1040	X		✓
9	SB-2 (11-12)	G	1			X					X		4/28/22	1041	X		
10	SB-2 (12-13)	G	1			X					X		4/28/22	1042	X		✓

Relinquished By: [signature] Date: 4-29-22 Time: 1035 Received By: Tamara Oldaker

Relinquished By: Date: Time: Received By:

Verbal Result: ☐ Yes ☐ No Add'l Phone #:
All Results are emailed. Please provide Email address:

REMARKS: 3day - Run #1 sample on each group and hold rest.

Delivered By: (Circle One) Observed Temp. °C 1.2
Sampler - UPS - Bus - Other: Corrected Temp. °C 0.7

Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No

CHECKED BY: (Initials) TO

Turnaround Time: Standard ☐ Rush ☑

Thermometer ID #113
Correction Factor -0.5°C

Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No; Intact ☐ Yes ☐ No; Observed Temp. °C; Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Altamira - US
Project Manager: Bryon Huney
Address: 14229 Punta Bonaire
City: Corpus Christi State: TX Zip: 78418
Phone #: 361 658 3126 Fax #: —
Project #: NOVO NM 2103 Project Owner: Bryan Huney
Project Name: Novo Culebra Bluff
Project Location: Loving New Mexico
Sampler Name: [signature] Gonzalez

BILL TO
P.O. #:
Company: Novo oil & Gas
Attn:
Address:
City:
State: Zip:
Phone #:
Fax #:

ANALYSIS REQUEST: Chlorides (300.0 or equivalent); Cl added 5/10/22 TO:

FOR LAB USE ONLY

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME	Chlorides (300.0 or equivalent)	Cl added 5/10/22 TO:
H221766 11	SB-2 (13-14)	G	1			X					X		4/28/22	1043	X	✓
12	SB-2 (14-15)	G	1			X					X		4/28/22	1044	X	
	~~SB- ( )~~	G	1			X					X				X	
	~~SB- ( )~~	G	1			X					X				X	
	~~SB- ( )~~	G	1			X					X				X	
	~~SB- ( )~~	G	1			X					X				X	
	~~SB- ( )~~	G	1			X					X				X	
	~~SB- ( )~~	G	1			X					X				X	
	~~SB- ( )~~	G	1			X					X				X	
	~~SB- ( )~~	G	1			X					X				X	

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: [signature] Date: 4-29-22 Time: 1035 Received By: Tamara Oldaker

Relinquished By: Date: Time: Received By:

Verbal Result: ☐ Yes ☐ No Add'l Phone #:
All Results are emailed. Please provide Email address:

REMARKS: 3day

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Observed Temp. °C 1.2
Corrected Temp. °C 0.7

Sample Condition
Cool ☑ Yes ☐ No
Intact ☑ Yes ☐ No

CHECKED BY: (Initials) TO

Turnaround Time: Standard ☐ Rush ☑

Thermometer ID #113
Correction Factor -0.5°C

Bacteria (only) Sample Condition
Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No
Observed Temp. °C
Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Altamira - US	**BILL TO**	
Project Manager:	Bryon Huney	P.O. #:	
Address:	14225 Punta Bonaire	Company:	Novo oil & GAS
City: Corpus Christi	State: TX Zip: 78418	Attn:	
Phone #: 361 658 3126	Fax #: —	Address:	
Project #: NOVO NM 2103	Project Owner: Bryan Huney	City:	
Project Name:	Novo Culebra Bluff	State:	Zip:
Project Location:	Loving New Mexico	Phone #:	
Sampler Name:	Arturo Gonzalez	Fax #:	

FOR LAB USE ONLY

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	Chlorides (300.0 or equivalent)	Chloride added 5/3/22	Chlorides added 5/5/22
H221766 13	SB-5 (2-4)	G	1			X					X		4/28/22	0707	X		
14	SB-5 (4-5)	G	1			X					X		4/28/22	0909	X	X	
15	SB-5 (6-7)	G	1			X					X		4/28/22	0914	X		✓
16	SB-5 (8-9)	G	1			X					X		4/28/22	0919	X		
17	SB-5 (10-11)	G	1			X					X		4/28/22	0929	X		
18	SB-5 (12-13)	G	1			X					X		4/28/22	0931	X		
19	SB-5 (14-15)	G	1			X					X		4/28/22	0933	X		
~~20~~ SR 4-29-22	~~SB- ( )~~	G	1			X					X				X		
	~~SB- ( )~~	G	1			X					X				X		
	~~SB- ( )~~	G	1			X					X				X		

Relinquished By: [signature]	Date: 4-29-22 Time: 1035	Received By: Tamara Oldaker	Verbal Result: ☐ Yes ☐ No Add'l Phone #: All Results are emailed. Please provide Email address:
Relinquished By:	Date: Time:	Received By:	REMARKS: 3day
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C 1.2 Corrected Temp. °C 0.7	Sample Condition Cool ☑ Yes ☐ No Intact ☑ Yes ☐ No	CHECKED BY: (Initials) TO.

Turnaround Time: Standard ☐ Rush ☑
Thermometer ID #113 Correction Factor -0.5°C

Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No Observed Temp. °C Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Altamira - US
Project Manager: Bryon Huey
Address: 14225 Punta Bonaire
City: Corpus Christi State: TX Zip: 78418
Phone #: 361 658 3126 Fax #: ——
Project #: NOVO NM 2103 Project Owner: Bryan Huey
Project Name: Novo Culebra Bluff
Project Location: Loving New Mexico
Sampler Name: [illegible] Gonzalez

BILL TO
P.O. #:
Company: Novo oil & GAS
Attn:
Address:
City:
State: Zip:
Phone #:
Fax #:

ANALYSIS REQUEST

FOR LAB USE ONLY

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	MATRIX: WASTEWATER	MATRIX: SOIL	MATRIX: OIL	MATRIX: SLUDGE	MATRIX: OTHER :	PRESERV.: ACID/BASE:	PRESERV.: ICE / COOL	PRESERV.: OTHER :	SAMPLING: DATE	SAMPLING: TIME	Chlorides (300.0 or equivalent)	Cl added 5/3/22	CL added 5/5/22 TO.
H221766																	
20	SB-6 (3-4)	G	1			X					X		4/28/22	1420	X		
21	SB-6 (4-5)	G	1			X					X		4/28/22	1421	X	X	
22	SB-6 (6-7)	G	1			X					X		4/28/22	1424	X		✓
23	SB-6 (8-9)	G	1			X					X		4/28/22	1426	X		✓
24	SB-6 (9-10)	G	1			X					X		4/28/22	1429	X		
	~~SB- ( )~~	G	1			X					X				X		
	~~SB- ( )~~	G	1			X					X				X		
	~~SB- ( )~~	G	1			X					X				X		
	~~SB- ( )~~	G	1			X					X				X		
	~~SB- ( )~~	G	1			X					X				X		

Relinquished By: [signature] Date: 4-29-22 Time: 1035 Received By: Tamara Oldaker

Relinquished By: Date: Time: Received By:

Verbal Result: ☐ Yes ☐ No Add'l Phone #:
All Results are emailed. Please provide Email address:

REMARKS: 3day

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Observed Temp. °C 1.2
Corrected Temp. °C 0.7

Sample Condition
Cool: ☑ Yes ☐ No
Intact: ☑ Yes ☐ No

CHECKED BY: (Initials) TO.

Turnaround Time: Standard ☐ Rush ☑
Thermometer ID #113
Correction Factor -0.5°C

Bacteria (only) Sample Condition
Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No
Observed Temp. °C
Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Alfamira - (L)
Project Manager: Bryan Hunay
Address: 14229 Punta Banana
City: Corpus Christi State: Tx Zip: 78418
Phone #: 3616583126 Fax #:
Project #: NOVO NM2103 Project Owner: Bryan Hunay
Project Name: NOVO Culebra Bluff
Project Location: Loving New Mexico
Sampler Name: Mark Gonzales

BILL TO
P.O. #:
Company: Novo oil & Gas
Attn:
Address:
City:
State: Zip:
Phone #:
Fax #:

ANALYSIS REQUEST
Chlorides (300 or equivalent)

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	Chlorides (300 or equivalent)
H221766															
25	SB-7 (3-4)	G	1			X					X		4/28/22	15:16	X
26	SB-7 (4-5)	G	1			X					X		4/28/22	15:18	X
27	SB-7 (6-7)	G	1			X					X		4/28/22	15:20	X
28	SB-7 (8-9)	G	1			X					X		4/28/22	15:23	X
29	SB-7 (9-10)	G	1			X					X		4/28/22	15:24	X
	SB- ( )	G	1			X					X				X
	SB- ( )	G	1			X					X				X
	SB- ( )	G	1			X					X				X
	SB- ( )	G	1			X					X				X
	SB- ( )	G	1			X					X				X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: Date: 4-29-22 Time: 1035 Received By: Tamara Oldaker
Relinquished By: Date: Time: Received By:

Verbal Result: ☐ Yes ☐ No Add'l Phone #:
All Results are emailed. Please provide Email address:
REMARKS: 3day

Delivered By: (Circle One) Sampler - UPS - Bus - Other:
Observed Temp. °C 1.2 Corrected Temp. °C 0.7
Sample Condition: Cool ☑ Yes ☐ No Intact ☑ Yes ☐ No
CHECKED BY: (Initials) TO.

Turnaround Time: Standard ☐ Rush ☑
Thermometer ID #113 Correction Factor -0.5°C
Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No Observed Temp. °C Corrected Temp. °C

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

FORM-006 R 3.2 10/07/21

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Altamira - US
Project Manager: Bryon Huey
Address: 14225 Punta Bonaire
City: Corpus Christi State: TX Zip: 78418
Phone #: 361 658 3126 Fax #: ——
Project #: Nonwo NM 2103 Project Owner: Bryan Huey
Project Name: Novo Culebra Bluff
Project Location: Loving New Mexico
Sampler Name: [illegible signature]

BILL TO
P.O. #:
Company: Novo oil & GAS
Attn:
Address:
City:
State: Zip:
Phone #:
Fax #:

ANALYSIS REQUEST

FOR LAB USE ONLY

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME	Chlorides (300.0 or equivalent)	Cl added 5/3/22	Cl added 5/5/22 T.O.	Cl added 5/10/22 T.O.
H221766 30	SB-8 (2-3)	G	1			X					X		4/28/22	1346	X			
31	SB-8 (3-4)	G	1			X					X		4/28/22	1350	X	X		
32	SB-8 (4-5)	G	1			X					X		4/28/22	1353	X	X		
33	SB-8 (6-7)	G	1			X					X		4/28/22	1355	X			
34	SB-8 (8-9)	G	1			X					X		4/28/22	1356	X		✓	
35	SB-8 (10-11)	G	1			X					X		4/28/22	1358	X			✓
36	SB-8 (12-13)	G	1			X					X		4/28/22	1400	X			✓
37	SB-8 (14-15)	G	1			X					X		4/28/22	1403	X			
	~~SB-~~	G	1			X					X				X			
	~~SB-~~	G	1			X					X				X			

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: [signature] Date: 4-29-22 Time: 1035 Received By: Tamara Oldaker

Relinquished By: Date: Time: Received By:

Verbal Result: ☐ Yes ☐ No Add'l Phone #:
All Results are emailed. Please provide Email address:

REMARKS: 3day

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Observed Temp. °C 1.2
Corrected Temp. °C 0.7

Sample Condition
Cool Intact
☑ Yes ☑ Yes
☐ No ☐ No

CHECKED BY: (Initials) T.O.

Turnaround Time: Standard ☐ Rush ☑

Thermometer ID #113
Correction Factor -0.5°C

Bacteria (only) Sample Condition
Cool Intact
☐ Yes ☐ Yes
☐ No ☐ No
Observed Temp. °C
Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Altamira - W
Project Manager: Bryon Huney
Address: 14225 Punta Bonaire
City: Corpus Christi State: TX Zip: 78418
Phone #: 361 658 3126 Fax #: —
Project #: NONUO NM 2103 Project Owner: Bryan Huney
Project Name: Novo Culebra Bluff
Project Location: Loving New Mexico
Sampler Name: [signature] Gonzalez

BILL TO
P.O. #:
Company: Novo oil & Gas
Attn:
Address:
City:
State: Zip:
Phone #:
Fax #:

ANALYSIS REQUEST: Chlorides (300.0 or equivalent); Cl added 5/3/22

Lab I.D. (FOR LAB USE ONLY) H221766	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME	Chlorides (300.0 or equivalent)	Cl added 5/3/22
38	SB-9 (3-4)	G	1			X					X		4/27/22	1644	X	
39	SB-7 (4-5)	G	1			X					X		4/27/22	1656	X	X
40	SB-7 (6-7)	G	1			X					X		4/27/22	1700	X	
41	SB-7 (8-9)	G	1			X					X		4/27/22	1707	X	
42	SB-9 (10-11)	G	1			X					X		4/27/22	1711	X	
43	SB-7 (12-13)	G	1			X					X		4/27/22	1714	X	
44	SB-7 (14-15)	G	1			X					X		4/27/22	1719	X	
	~~SB- (~~	G	1			X					X				X	
	~~SB- (~~	G	1			X					X				X	
	~~SB- (~~	G	1			X					X				X	

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: [signature] Date: 4-29-22 Time: 1035 Received By: Tamara Oldaker

Relinquished By: Date: Time: Received By:

Verbal Result: ☐ Yes ☐ No Add'l Phone #:
All Results are emailed. Please provide Email address:

REMARKS: 3day - Run #1 Sample on each group and Shold Rest.

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Observed Temp. °C 1.2
Corrected Temp. °C 0.7

Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No

CHECKED BY: (Initials) [initials]

Turnaround Time: Standard ☐ Rush ☑

Thermometer ID #113
Correction Factor -0.5°C

Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No; Intact ☐ Yes ☐ No; Observed Temp. °C; Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

Page 53 of 58

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Altamira -W
Project Manager: Bryan Huney
Address: 14225 Punta Bonaire
City: Corpus Christi State: TX Zip: 78418
Phone #: 361 658 3126 Fax #: —
Project #: NOVO NM 2103 Project Owner: Bryan Huney
Project Name: Novo Culebra Bluff
Project Location: Loving New Mexico
Sampler Name: [signature] Gonzalez

BILL TO
P.O. #:
Company: Novo oil & GAS
Attn:
Address:
City:
State: Zip:
Phone #:
Fax #:

FOR LAB USE ONLY

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	Chlorides (300.0 or equivalent)	Cl added 5/3/22	CL added 5/5/22 TO.
H221764																	
45	SB-11 (4-5)	G	1			X					X		4/28/22	1545	X		
46	SB-11 (6-7)	G	1			X					X		4/28/22	1548	X	X	
47	SB-11 (8-9)	G	1			X					X		4/28/22	1549	X		✓
48	SB-11 (10-11)	G	1			X					X		4/28/22	1552	X		
49	SB-11 (12-13)	G	1			X					X		4/28/22	1554	X		
50	SB-11 (14-15)	G	1			X					X		4/28/22	1556	X		
	~~SB- ( )~~	G	1			X					X				X		
	~~SB- ( )~~	G	1			X					X				X		
	~~SB- ( )~~	G	1			X					X				X		
	~~SB- ( )~~	G	1			X					X				X		

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: [signature] Date: 4-29-22 Time: 1035 Received By: Tamara Oldaker

Relinquished By: Date: Time: Received By:

Delivered By: (Circle One) Sampler - UPS - Bus - Other:

Observed Temp. °C 1.2
Corrected Temp. °C 0.7

Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No

CHECKED BY: (Initials) TO.

Verbal Result: ☐ Yes ☐ No Add'l Phone #:
All Results are emailed. Please provide Email address:

REMARKS: 3days

Turnaround Time: Standard ☐ Rush ☑

Thermometer ID #113
Correction Factor -0.5°C

Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No; Intact ☐ Yes ☐ No; Observed Temp. °C; Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name:	Alfamira-US
Project Manager:	Bryan Hung
Address:	14225 Huntington Ave
City:	Corpus Christi State: TX Zip: 78418
Phone #:	3616583126 Fax #:
Project #:	NOVO NM 2103 Project Owner: Bryan Hung
Project Name:	NOVO Culebra Bluff
Project Location:	Loving New Mexico
Sampler Name:	

BILL TO

P.O. #:	
Company:	NOVO oil & GAS
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

Chlorides (300.0 or equivalent)

Cl added 5/3/22

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE	ICE / COOL	OTHER:	SAMPLING: DATE	TIME		
H221706																
51	SB-12 (1-2)	G	1			X					X		4/28/22	1118	X	
52	SB-12 (2-3)	G	1			X					X		4/28/22	1119	X	
53	SB-12 (3-4)	G	1			X					X		4/28/22	1120	X	X
54	SB-12 (4-5)	G	1			X					X		4/28/22	1121	X	
55	SB-12 (6-7)	G	1			X					X		4/28/22	1125	X	
56	SB-12 (8-9)	G	1			X					X		4/28/22	1136	X	
57	SB-12 (10-11)	G	1			X					X		4/28/22	1142	X	
58	SB-12 (12-13)	G	1			X					X		4/28/22	1147	X	
59	SB-12 (14-15)	G	1			X					X		4/28/22	1204	X	
	SB-12 ( )	G	1			X					X				X	

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 4-29-22	Received By:	
	Time: 1035		
Relinquished By:	Date:	Received By:	
	Time:		

Verbal Result: ☐ Yes ☐ No Add'l Phone #:

All Results are emailed. Please provide Email address:

REMARKS: 3 days

Delivered By: (Circle One)	Observed Temp. °C	1.2	Sample Condition: Cool ☑ Yes ☐ No; Intact ☐ Yes ☐ No	CHECKED BY: (Initials)	T.O.
Sampler - UPS - Bus - Other:	Corrected Temp. °C	0.7			

Turnaround Time: Standard ☐ Rush ☑ Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No; Intact ☐ Yes ☐ No; Observed Temp. °C; Corrected Temp. °C

Thermometer ID #113
Correction Factor -0.5°C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Alfamira - (L)
Project Manager:	Bryan Hunay
Address:	14229 Punta Bonami
City:	Corpus Christi State: TX Zip: 78418
Phone #:	361 658 3126 Fax #:
Project #:	NOVO NM 2103 Project Owner: Bryan Hunay
Project Name:	NOVO Culebra Bluff
Project Location:	Loving New Mexico
Sampler Name:	Mark Gonzalez

BILL TO

P.O. #:	
Company:	NOVO oil & GAS
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

Chlorides (300.0 or equivalent)
Cl added 5-13-22

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	Chlorides (300.0 or equivalent)	Cl added 5-13-22
H221766																
60	SB-18 (4-5)	G	1			X					X		4/28/22	1631	X	
61	SB-18 (5-6)	G	1			X					X		4/28/22	1636	X	
62	SB-18 (6-7)	G	1			X					X		4/28/22	1638	X	X
63	SB-18 (9-10)	G	1			X					X		4/28/22	1643	X	
	SB- ( )	G	1			X					X				X	
	SB- ( )	G	1			X					X				X	
	SB- ( )	G	1			X					X				X	
	SB- ( )	G	1			X					X				X	
	SB- ( )	G	1			X					X				X	
	SB- ( )	G	1			X					X				X	

Relinquished By:	Date: 4-29-22	Received By:	
Relinquished By:	Time: 1035	Received By: Tamara Oldaker	
	Date:		
	Time:		

Verbal Result: ☐ Yes ☐ No Add'l Phone #:
All Results are emailed. Please provide Email address:

REMARKS: 3days

Delivered By: (Circle One)	Observed Temp. °C 1.2	Sample Condition Cool Intact	CHECKED BY: (Initials)	Turnaround Time: Standard Rush	Bacteria (only) Sample Condition Cool Intact Observed Temp. °C
Sampler - UPS - Bus - Other:	Corrected Temp. °C 0.7	☑ Yes ☑ Yes ☐ No ☐ No	TO	Thermometer ID #113 Correction Factor -0.5°C	☐ Yes ☐ Yes ☐ No ☐ No Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name:	Alfamira - (L)
Project Manager:	Bryan Hunay
Address:	14225 Huntington Ave
City:	Corpus Christi State: TX Zip: 78418
Phone #:	3616583126 Fax #:
Project #:	NOVO NM 2103 Project Owner: Bryan Hunay
Project Name:	NOVO Willebra Bluff
Project Location:	Loving New Mexico
Sampler Name:	

BILL TO

P.O. #:	
Company:	NOVO oil & GAS
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

Chlorides (300.0 or equivalent)
Cl added 5/3/22
Cl added 5/5/22

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME
H227660														
64	SB-22 (0-1)	G	1			X					X		4/28/22	0749
65	SB-22 (1-2)	G	1			X					X		4/28/22	0750
66	SB-22 (2-3)	G	1			X					X		4/28/22	0951
67	SB-22 (3-4)	G	1			X					X		4/28/22	0952
68	SB-22 (4-5)	G	1			X					X		4/28/22	0953
69	SB-22 (6-7)	G	1			X					X		4/28/22	0754
70	SB-22 (8-9)	G	1			X					X		4/28/22	0955
71	SB-22 (10-11)	G	1			X					X		4/28/22	0958
72	SB-22 (12-13)	G	1			X					X		4/28/22	0959
73	SB-22 (14-15)	G	1			X					X		4/28/22	1000

Relinquished By:	Date: 4-29-22 Time: 1035	Received By:	Verbal Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Date: Time:	Received By:	All Results are emailed. Please provide Email address:
Delivered By: (Circle One)	Observed Temp. °C 1.2	Sample Condition Cool Intact	CHECKED BY: (Initials)
Sampler - UPS - Bus - Other:	Corrected Temp. °C 0.7	☑ Yes ☑ Yes ☐ No ☐ No	T.O.

REMARKS: 3day

Turnaround Time: Standard ☐ Rush ☑

Bacteria (only) Sample Condition Cool Intact Observed Temp. °C ☐ Yes ☐ Yes ☐ No ☐ No Corrected Temp. °C

Thermometer ID #113
Correction Factor -0.5°C

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

FORM-006 R 3.2 10/07/21

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Alamo Permian
Project Manager: Bryan Hunt
Address: 14225 Huntington
City: Corpus Christi State: TX Zip: 78418
Phone #: 3616583126 Fax #:
Project #: NOVO NM 203 Project Owner: Bryan Hunt
Project Name: NOVO Cuebra Bluff
Project Location: Lovington New Mexico
Sampler Name: Mark Gonzalez

BILL TO
P.O. #:
Company: NOVO Oil & Gas
Attn:
Address:
City:
State: Zip:
Phone #:
Fax #:

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	Chlorides (300 or equivalent)	Chloride 5/3/22											
H221766																											
74	SB-23 (0-1)	G	1			X					X		4/28/22	1303	X												
75	SB-23 (1-2)	G	1			X					X		4/28/22	1304	X												
76	SB-23 (2-3)	G	1			X					X		4/28/22	1305	X	X											
77	SB-23 (3-4)	G	1			X					X		4/28/22	1314	X	X											
78	SB-23 (4-5)	G	1			X					X		4/28/22	1315	X												
79	SB-23 (6-7)	G	1			X					X		4/28/22	1317	X												
80	SB-23 (8-9)	G	1			X					X		4/28/22	1320	X												
81	SB-23 (9-10)	G	1			X					X		4/28/22	1323	X												
	SB- ( )	G	1			X					X				X												
	SB- ( )	G	1			X					X				X												

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: Date: 4-29-22 Time: 1035 Received By: Tamara Oldaker
Relinquished By: Date: Time: Received By:

Delivered By: (Circle One) Sampler - UPS - Bus - Other:
Observed Temp. °C 1.2 Corrected Temp. °C 0.7
Sample Condition: Cool Yes Intact Yes / No No
CHECKED BY: (Initials) TO

Verbal Result: ☐ Yes ☐ No Add'l Phone #:
All Results are emailed. Please provide Email address:
REMARKS: 3 days
Turnaround Time: Standard ☐ Rush ☑
Thermometer ID #113
Correction Factor -0.5°C
Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No
Observed Temp. °C
Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

Legend

- SOIL BORING LOCATION
- POINT OF RELEASE
- BURIED PIPELINE
- ROW
- CONSTR ROW
- STAKED ACCESS ROAD
- EXISTING ACCESS ROAD
- CHLORIDE CONTOURS

Notes:

Iso Contour - Chlorides
> 600 mg/kg
- Refer to Table 1 for Chloride Data

Chloride Iso-Concentration Map

Culebra Bluff CTB3 – Produced Water Release
nAPP2132562482
Eddy County, New Mexico
Novo Oil & Gas

0 225 450 Feet

Date: 5/18/2022

Figure 4

ALTAMIRA

Table 1
Analytical Data Results Summary - Soil Assessment Samples (mg/kg)
Novo Oil Gas - Culebra Bluff CTB3 Produced Water Release
(Discovered November 20, 2021)
Near Loving, New Mexico

Analyte			Chloride	BTEX	Benzene	TPH (low)	TPH (C10-28)	TPH (C28-36)	TPH
Method			300/4500-Cl-B	8260B	8260B	8015D	8015M	8015M	8015M
Table I - Closure Criteria (0-4')			600	50	10	-	-	-	100
Sample ID	Sample Date								
Source Area Soil Borings									
SB-2 (0-1')	1/25/2022		8,080	<0.00148	<0.00053	<0.616	33	54.5	87.5
SB-2 (2-3')	1/25/2022		3,570	<0.00155	<0.000556	<0.648	6.36	11.2	17.56
SB-2 (3-4')	1/25/2022		2,040	---	---	---	---	---	---
SB-2 (4-5')	1/25/2022		2,290	---	---	---	---	---	---
SB-2 (6-7')	1/25/2022		1,570	---	---	---	---	---	---
SB-2 (8-9')	1/25/2022		2,380	---	---	---	---	---	---
(SB-2 Resample Event)									
SB-2 (1-2')	4/28/2022		5,360	---	---	---	---	---	---
SB-2 (3-4')	4/28/2022		2,640	---	---	---	---	---	---
SB-2 (6-7')	4/28/2022		2,920	---	---	---	---	---	---
SB-2 (9-10')	4/28/2022		3,200	---	---	---	---	---	---
SB-2 (11-12')	4/28/2022		3,520	---	---	---	---	---	---
SB-2 (13-14')	4/28/2022		480	---	---	---	---	---	---
SB-3 (0-1')	1/25/2022		3,510	<0.00162	<0.000581	<0.674	62.9	57.5	120.4
SB-3 (1-2')	1/25/2022		1,860	<0.00159	<0.000571	<0.663	94.6	77.1	171.7
SB-3 (2-3')	1/25/2022		205	---	---	0.755 (J)	14.5	7.76	23.015
SB-4 (0-1')	1/25/2022		11.2 (J)	<0.00141	<0.000506	<0.587	2.66 (J)	18.1	20.76
SB-4 (1-2')	1/25/2022		19 (J)	<0.00143	<0.000514	<0.598	3.5 (J)	9.92	13.42
SB-5 (0-1')	1/25/2022		5,620	<0.00154	<0.000552	<0.641	3.58 (J)	13.8	17.38
SB-5 (1-1.5')	1/25/2022		6,120	<0.00164	<0.00059	<0.685	5.87	19.5	25.37
SB-5 (3-4')	4/28/2022		1,800	---	---	---	---	---	---
SB-5 (4-5')	4/28/2022		1,060	---	---	---	---	---	---
SB-5 (6-7')	4/28/2022		768	---	---	---	---	---	---
SB-5 (8-9')	4/28/2022		320	---	---	---	---	---	---
SB-6 (0-1')	1/25/2022		1,270	<0.00156	<0.00056	<0.651	4.1 (J)	24.8	28.9
SB-6 (1-2')	1/25/2022		1,440	<0.00154	<0.000554	<0.644	3.47 (J)	18.4	21.87
SB-6 (3-4')	4/28/2022		1,060	---	---	---	---	---	---
SB-6 (4-5')	4/28/2022		1,170	---	---	---	---	---	---
SB-6 (6-7')	4/28/2022		416	---	---	---	---	---	---
SB-6 (8-9')	4/28/2022		128	---	---	---	---	---	---
SB-7 (0-1')	1/25/2022		3,300	0.000706 (J)	0.000706 (J)	<0.717	2.94	11.9	14.84
SB-7 (1-2')	1/25/2022		1,160	<0.00172	<0.000617	<0.717	<1.87	6.14	6.14
SB-7 (2-2.5')	1/25/2022		751	<0.0018	<0.000648	<0.753	2.97 (J)	7.78	10.75

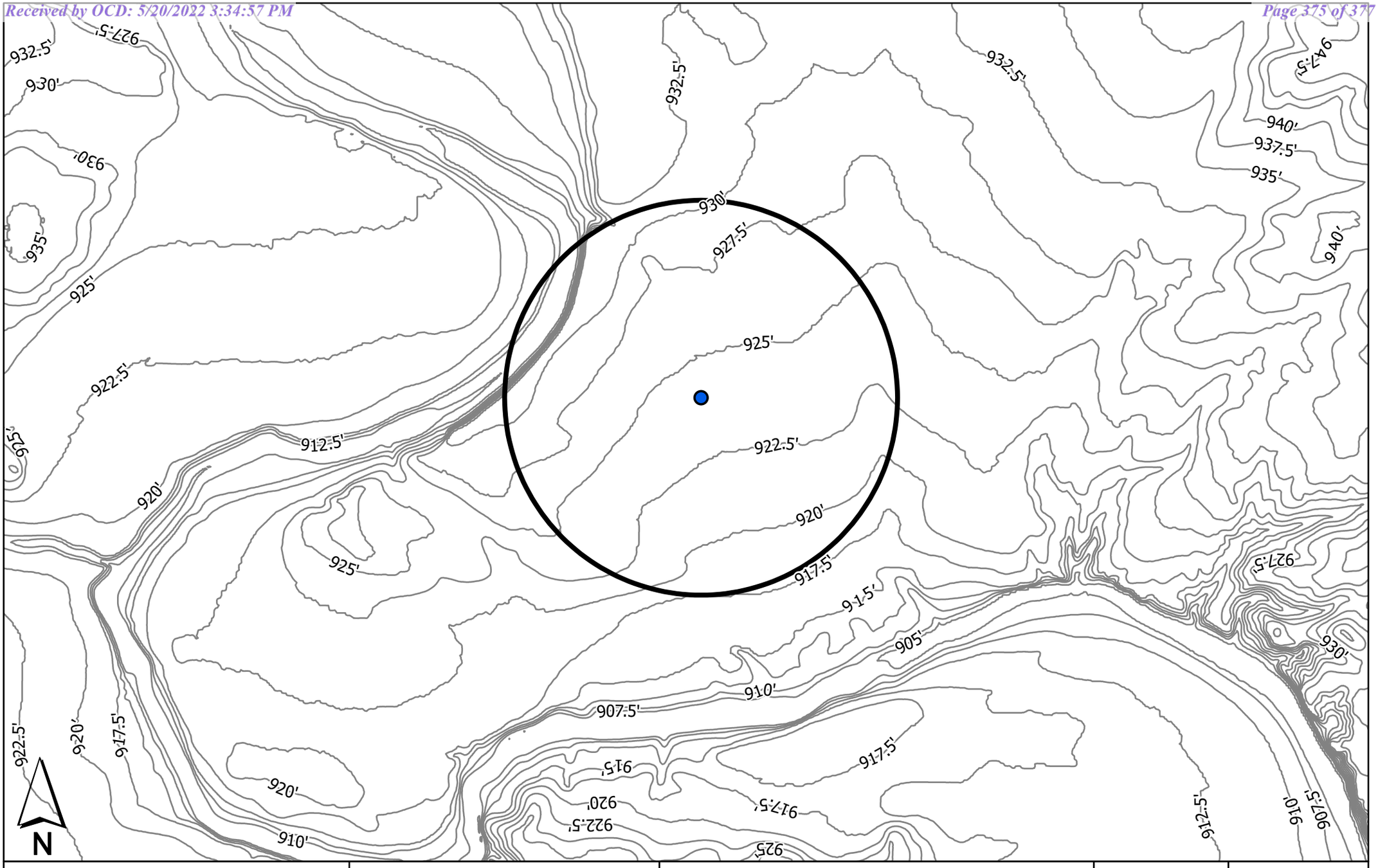
Table 1
Analytical Data Results Summary - Soil Assessment Samples (mg/kg)
Novo Oil Gas - Culebra Bluff CTB3 Produced Water Release
(Discovered November 20, 2021)
Near Loving, New Mexico

Analyte			Chloride	BTEX	Benzene	TPH (low)	TPH (C10-28)	TPH (C28-36)	TPH
Method			300/4500-Cl-B	8260B	8260B	8015D	8015M	8015M	8015M
Table I - Closure Criteria (0-4')			600	50	10	-	-	-	100
SB-7 (3-4')	4/28/2022		480	---	---	---	---	---	---
SB-8 (0-1')	1/25/2022		14,700	0.011414 (J)	0.000734 (J)	<0.706	14.2	30.9	45.1
SB-8 (2-3')	4/28/2022		3,280	---	---	---	---	---	---
SB-8 (3-4')	4/28/2022		2,320	---	---	---	---	---	---
SB-8 (4-5')	4/28/2022		3,000	---	---	---	---	---	---
SB-8 (8-9')	4/28/2022		864	---	---	---	---	---	---
SB-8 (10-11')	4/28/2022		768	---	---	---	---	---	---
SB-8 (12-13')	4/28/2022		208	---	---	---	---	---	---
SB-9 (0-1')	1/25/2022		5,360	<0.00222	<0.000797	<0.926	3.35 (J)	5.68	9.03
SB-9 (1-2')	1/25/2022		4,110	<0.00182	<0.000653	<0.759	6.02	32.7	38.72
SB-9 (2-2.5')	1/25/2022		3,350	---	---	---	---	---	---
SB-9 (3-4')	4/27/2022		1,400	---	---	---	---	---	---
SB-9 (4-5')	4/27/2022		64	---	---	---	---	---	---
SB-10 (0-1')	1/25/2022		39.7	<0.00188	<0.000676	<0.785	2.15 (J)	12	14.15
SB-10 (1-2')	1/25/2022		46	<0.00164	<0.000591	<0.687	3.04 (J)	19.2	22.24
SB-11 (0-1')	1/25/2022		5,980	0.00271 (J)	<0.000648	0.899 (J)	2.47 (J)	11.6	25.72
SB-11 (1-2')	1/25/2022		4,740	0.00157 (J)	<0.000654	<0.76	3.38 (J)	15.7	19.08
SB-11 (2-3')	1/25/2022		3,520	---	---	---	---	---	---
SB-11 (3-4')	1/25/2022		2,740	---	---	---	---	---	---
SB-11 (4-5')	4/28/2022		800	---	---	---	---	---	---
SB-11 (6-7')	4/28/2022		1,140	---	---	---	---	---	---
SB-11 (8-9')	4/28/2022		528	---	---	---	---	---	---
SB-11 (10-11')	4/28/2022		592	---	---	---	---	---	---
SB-12 (0-1')	1/26/2022		3,840	0.00135 (J)	<0.000524	<0.610	16.4	32.6	49
SB-12 (1-2)	4/28/2022		6,960	---	---	---	---	---	---
SB-12 (2-3')	4/28/2022		3,800	---	---	---	---	---	---
SB-12 (3-4')	4/28/2022		544	---	---	---	---	---	---
Lateral Delineation Soil Borings									
SB-1 (0-1')	1/25/2022		64.4	<0.00147	<0.000527	<0.612	<1.68	4.37	4.37
SB-1 (2-3')	1/25/2022		162	<0.00155	<0.000558	<0.648	15.3	47.3	62.6
SB-13 (0-1')	1/26/2022		18.7	<0.00186	<0.000667	<0.774	<1.67	7.97	7.97
SB-13 (1-2')	1/26/2022		24.5	<0.00152	<0.000545	<0.635	3.2 (J)	17.1	20.3
SB-13 (3-4')	1/26/2022		234	---	---	---	---	---	---
SB-14 (0-1')	1/26/2022		11.6 (J)	<0.00139	<0.000499	<0.579	1.68 (J)	11.1	12.78

Table 1
Analytical Data Results Summary - Soil Assessment Samples (mg/kg)
Novo Oil Gas - Culebra Bluff CTB3 Produced Water Release
(Discovered November 20, 2021)
Near Loving, New Mexico

Analyte			Chloride	BTEX	Benzene	TPH (low)	TPH (C10-28)	TPH (C28-36)	TPH
Method			300/4500-Cl-B	8260B	8260B	8015D	8015M	8015M	8015M
Table I - Closure Criteria (0-4')			600	50	10	-	-	-	100
SB-15 (0-1')	1/26/2022		**13.7 (J)**	<0.00142	<0.00051	<0.593	**2.07 (J)**	**13.4**	**15.47**
SB-15 (1-2')	1/26/2022		**12.9 (J)**	<0.00142	<0.00051	<0.593	**2.04 (J)**	**14.2**	**16.24**
SB-16 (0-1')	1/26/2022		**28**	**0.00137 (J)**	<0.000486	<0.565	**2.91 (J)**	**18.2**	**21.11**
SB-17 (0-1')	1/26/2022		**15.8 (J)**	<0.0015	<0.00054	<0.629	<1.69	**10.9**	**10.9**
SB-17 (1-2')	1/26/2022		**12.3 (J)**	<0.00148	<0.000532	<0.619	<1.71	**11**	**11**
SB-17 (2-3')	1/26/2022		<9.77	---	---	---	---	---	---
SB-18 (0-1')	1/26/2022		**25.5**	<0.00155	<0.000557	<0.647	**3.03 (J)**	**15.1**	**18.13**
SB-18 (1-2')	1/26/2022		**12.8 (J)**	<0.00163	<0.000584	<0.680	**2.21 (J)**	**9.26**	**11.47**
SB-18 (2-3')	1/26/2022		**12.5 (J)**	---	---	---	---	---	---
SB-18 (4-5')	4/28/2022		**128**	---	---	---	---	---	---
SB-18 (6-7')	4/28/2022		**496**	---	---	---	---	---	---
SB-19 (0-1')	1/26/2022		**15.5 (J)**	<0.00142	<0.000511	<0.593	**2.87 (J)**	**19.7**	**22.57**
SB-20 (0-1')	1/26/2022		<9.62	<0.00142	<0.00051	<0.592	<1.68	**32.4**	**32.4**
SB-20 (1-2')	1/26/2022		**10.1 (J)**	<0.00142	<0.000509	<0.591	<1.68	**8.04**	**8.04**
SB-21 (0-1')	1/26/2022		**14.9 (J)**	<0.00148	<0.00053	<0.616	**2.15 (J)**	**16.8**	**18.95**
SB-21 (1-2')	1/26/2022		**16.4 (J)**	<0.00143	<0.000515	<0.599	<1.69	**13.2**	**13.2**
SB-22 (0-1')	4/28/2022		**4,160**	---	---	---	---	---	---
SB-22 (2-3')	4/28/2022		**3,080**	---	---	---	---	---	---
SB-22 (3-4')	4/28/2022		**2,720**	---	---	---	---	---	---
SB-22 (6-7')	4/28/2022		**64**	---	---	---	---	---	---
SB-22 (8-9')	4/28/2022		**240**	---	---	---	---	---	---
SB-23 (0-1')	4/28/2022		**6,880**	---	---	---	---	---	---
SB-23 (2-3')	4/28/2022		**4,320**	---	---	---	---	---	---
SB-23 (3-4')	4/28/2022		**400**	---	---	---	---	---	---

Notes:
All results are in mg/kg
Closure Criteria Soils - Table I of 19.15.29.12 NMAC
TPH - Total Petroleum Hydrocarbons - includes GRO, DRO, MRO
BTEX - Benzene, Toluene, Ethylbenzene, Xylenes
< number is the SDL (not detected above the sample detection limit)
J - result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value
Bold indicates that a COC was detected
Shading indicates that a detected result exceeded the NMOCD Table 1 Closure Criteria Levels



Legend

- Novo Culebra Bluff Release

Notes:

Topographic Map

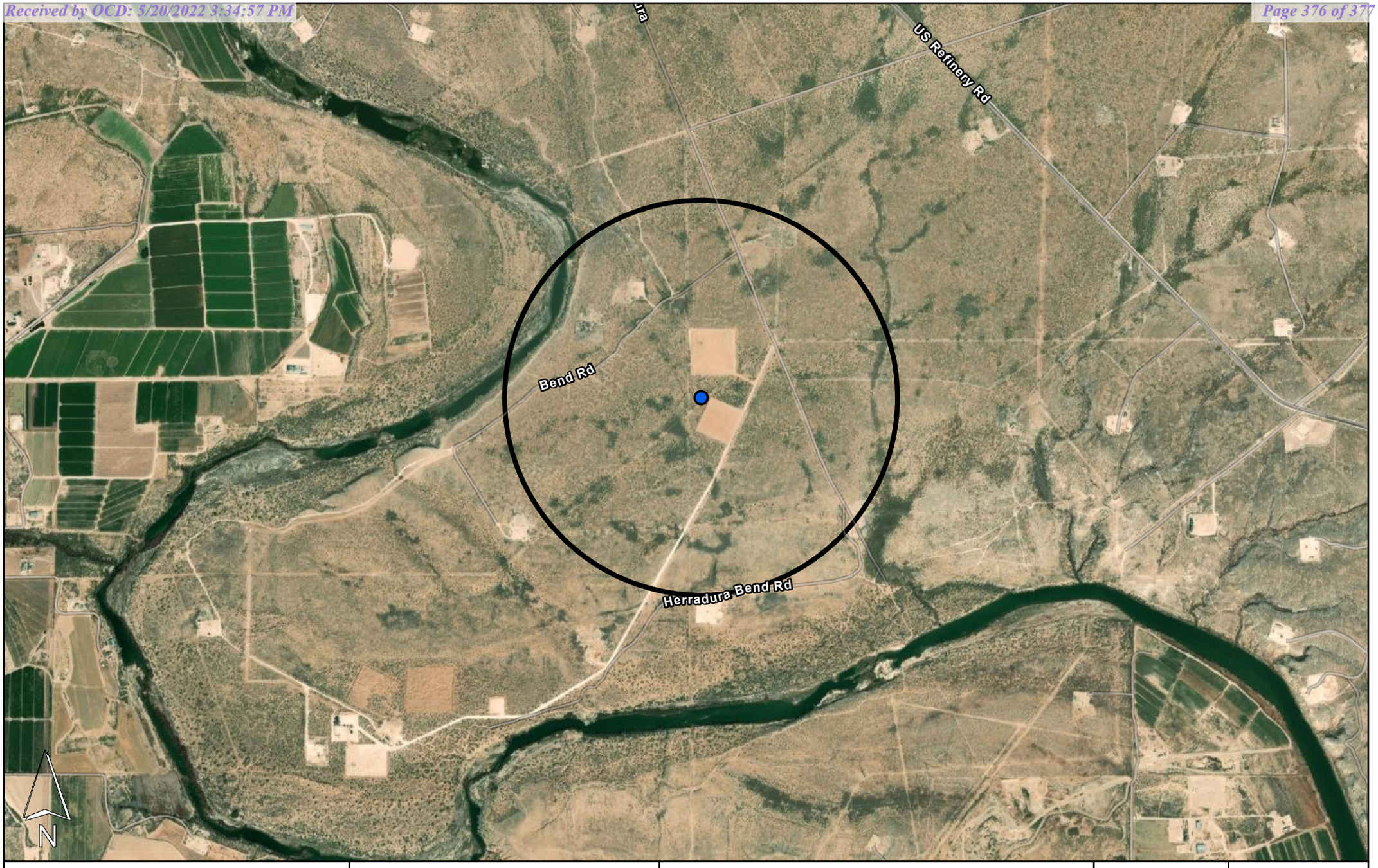
Culebra Bluff CTB3 – Produced Water Release
nAPP2132562482
Eddy County, New Mexico
Novo Oil & Gas

0 2,500 5,000 Feet

Date: 5/18/2022

Figure 1

ALTAMIRA



Legend

- Novo Culebra Bluff Release

Notes:

Site Location Map

Culebra Bluff CTB3 – Produced Water Release
nAPP2132562482
Eddy County, New Mexico
Novo Oil & Gas

0 2,500 5,000 Feet

Date: 5/18/2022

Figure 2

ALTAMIRA

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 108717

CONDITIONS

Operator: NOVO OIL & GAS NORTHERN DELAWARE, LLC 1001 West Wilshire Blvd Oklahoma City, OK 73116	OGRID: 372920
	Action Number: 108717
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	Thank you for the site assessment. Due to the extremely shallow groundwater and sensitive nature of the release location, the site will need to be remediated to the strictest closure criteria standards. Please make sure all sample locations are fully delineated. Floor confirmation samples should be delineated/excavated to meet closure criteria standards for site assessment/characterization/proven depth to water determination. All off pad areas must contain a minimum of 4 feet non-waste containing uncontaminated, earthen material with chloride concentrations less than 600 mg/kg and less than 100 mg/kg for TPH. Sidewall samples should be delineated/excavated to 600 mg/kg for chlorides and 100 mg/kg for TPH to define the edge of the release. Samples must be analyzed for all constituents listed in Table I of 19.15.29.12 NMAC. Confirmation samples should be collected every 200 ft2. A remediation plan will need to be completed and uploaded within 90 days.	9/21/2022