

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

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

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

Incident ID	NCS1934552153
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party: <b>Enduring Resources</b>	OGRID: <b>372286</b>
Contact Name: <b>Chad Snell</b>	Contact Telephone: <b>505-444-0586</b>
Contact email: <b>csnell@enduringresources.com</b>	Incident # (assigned by OCD) <b>NCS1934552153</b>
Contact mailing address: <b>200 Energy Court</b>	<b>Farmington, New Mexico 87401</b>

### Location of Release Source

Latitude 36. 242867 Longitude -107. 534978  
*(NAD 83 in decimal degrees to 5 decimal places)*

Site Name: <b>NE Chaco COM 168H</b>	Site Type: <b>Wellsite</b>
Date Release Discovered: <b>10/15/2019</b>	API# (if applicable) <b>30-039-31173</b>

Unit Letter	Section	Township	Range	County
<b>E</b>	<b>12</b>	<b>23N</b>	<b>7W</b>	<b>Rio Arriba</b>

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)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls): <b>8</b>	Volume Recovered (bbls): <b>0</b>
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

#### Cause of Release

**On 10/15/2019, an underground line leak was discovered at this well site. A corrosion hole formed in a '90' on the water dump line from the separator, and 8 bbls of water was released into the soil below the equipment liner near the above ground water tank. The well was shut in and the leak was stopped. Production equipment was moved and closure activities have been completed.**

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Was this a major release as defined by 19.15.29.7(A) NMAC?  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

### Initial Response

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

<input type="checkbox"/> The source of the release has been stopped. <input type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.
If all the actions described above have <u>not</u> been undertaken, explain why:
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: _____ Title: _____  Signature: _____ Date: _____  email: _____ Telephone: _____
<b><u>OCD Only</u></b>  Received by: _____ Date: _____

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## 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?	>200 (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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 1/2-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.

Form C-141

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Oil Conservation Division

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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: Chad Snell Title: HSE Tech

Signature:  Date: 1/2/20

email: csnell@enduringresources.com Telephone: (505)444-0586

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

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## Remediation Plan

**Remediation Plan Checklist:** *Each of the following items must be included in the plan.*

- Detailed description of proposed remediation technique
- Scaled sitemap with GPS coordinates showing delineation points
- Estimated volume of material to be remediated
- Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

**Deferral Requests Only:** *Each of the following items must be confirmed as part of any request for deferral of remediation.*

- Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- Extents of contamination must be fully delineated.
- Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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: \_\_\_\_\_ Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

email: \_\_\_\_\_ Telephone: \_\_\_\_\_

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

- Approved     
 Approved with Attached Conditions of Approval     
 Denied     
 Deferral Approved

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

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### Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

**Closure Report Attachment Checklist:** *Each of the following items must be included in the closure report.*

- A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- Description of remediation activities

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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Chad Snell Title: HSE Tech  
 Signature:  Date: 1/2/20  
 email: csnell@enduringresources.com Telephone: (505)444-0586

**OCD Only**

Received by: OCD Date: 1/2/2020

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by:  Date: 3/13/2020  
 Printed Name: Cory Smith Title: Environmental Specialist

## NE Chaco COM 168H Remediation Narrative

**10/15/2019**

An underground line leak was discovered at this well site. A corrosion hole formed in a '90' on the water dump line from the separator, and 8 bbls of water was released into the soil below the equipment liner near the above ground water tank. The well was shut in and the leak was stopped.

**10/17/2019**

A hydrovac truck was on-site to find the source of the leak and remove impacted soil. Approximately 60 bbls of impacted soil was removed and disposed of. No further excavation could be completed at this time due to impacted areas of the release extending under the on-site production tank.

**11/22/2019**

Production equipment was removed to continue remediation. A hydrovac truck was onsite and removed an additional 90 bbls of impacted soil.

**11/25/2019**

Email notification was sent to the NMOCD (Cory Smith) and the BLM (Abiodun Adeloje) that sampling activities would take place on Wednesday November 27<sup>th</sup> 2019 at 9:30am. See attached "Email Notification" for reference.

**11/27/2019**

Sampling activities began with Abiodun Adeloje with the BLM onsite to witness. A total of 5 composite samples were taken from the excavation one from each wall and the bottom. Sample were sent in for lab analysis for BTEX, TPH (DRO/GRO/ORO), and Chlorides.

**12/3/2019**

Analytical report was received and all samples (except for one) were below the least stringent standards listed in Table I 1,000 ppm TPH (DRO and GRO), 2,500 ppm TPH (DRO/GRO/ORO), 10 ppm Benzene, 50 ppm BTEX and 20,000 ppm Chlorides. Due to areas of the release being in the "Top Four Feet" closure standards for those areas would be the most

stringent listed in Table I (100 ppm TPH (DRO/GRO/ORO), 10 ppm Benzene, 50 ppm BTEX and 600 ppm Chlorides). The "South Wall" results indicated that further excavation was needed. The "North Wall", "East Wall", "West Wall" and "Bottom" were below closure standards and need no further excavation. See attached "Sample Results Table" for reference.

**12/6/2019**

Additional excavation was performed using a backhoe removing an additional 6 cubic yards of impacted soil from the "South Wall" of the excavation. 48 hour notification was sent to the NMOCD and the BLM that final closure sampling of the "South Wall" would take place on Tuesday December 10<sup>th</sup> 2019 at 10:30am.

**12/10/2019**

Sampling activities took place, the NMOCD nor the BLM had a representative on-site to witness sampling. One composite sample was taken of the excavated "South Wall" and was sent in for lab analysis. See attached "Sample Map" for reference.

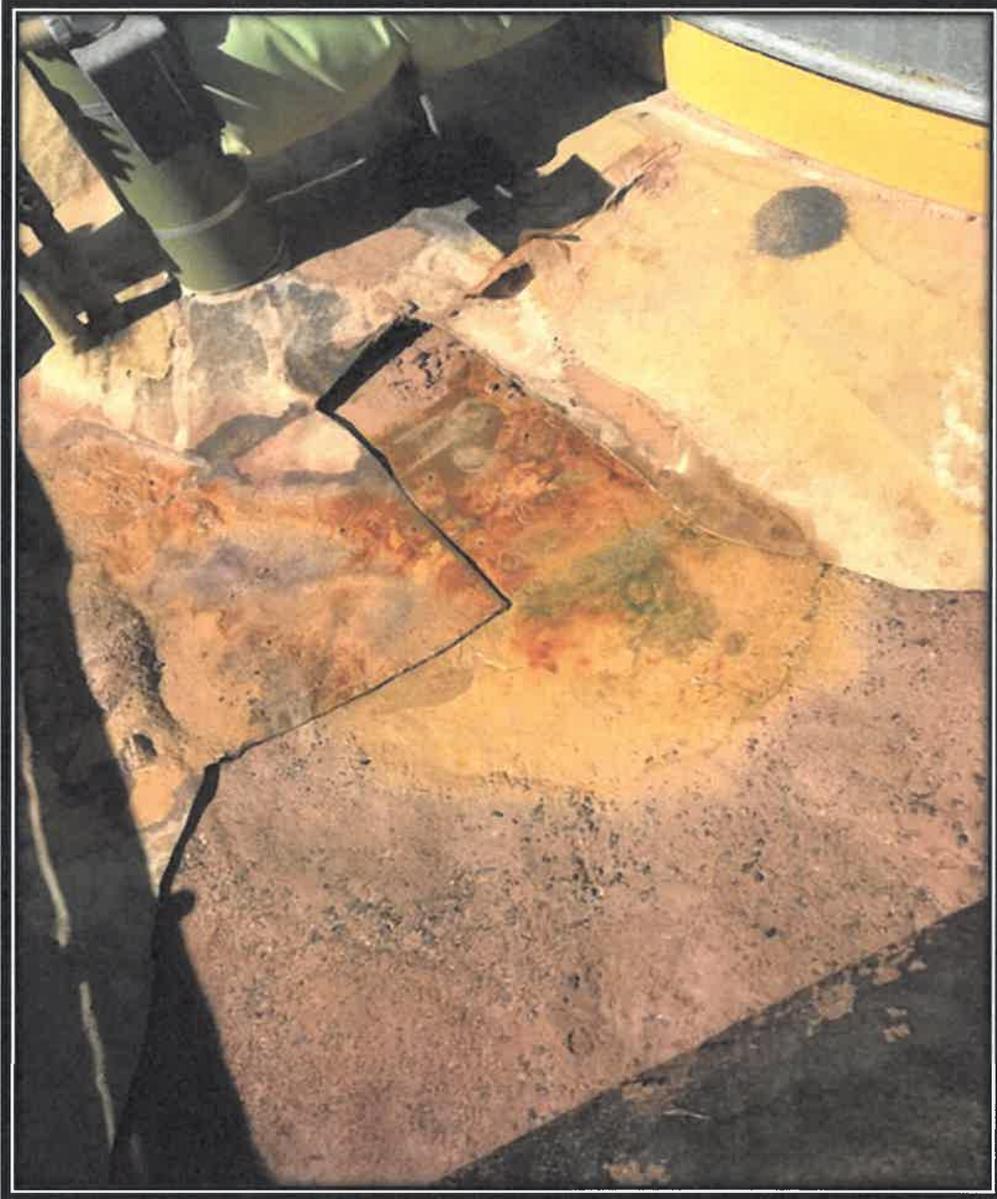
**12/11/2019**

Analytical report was received and results were below regulatory standards. No further action is required.



Enduring Resources, LLC  
Spill Closure Report  
NE Chaco COM 168H

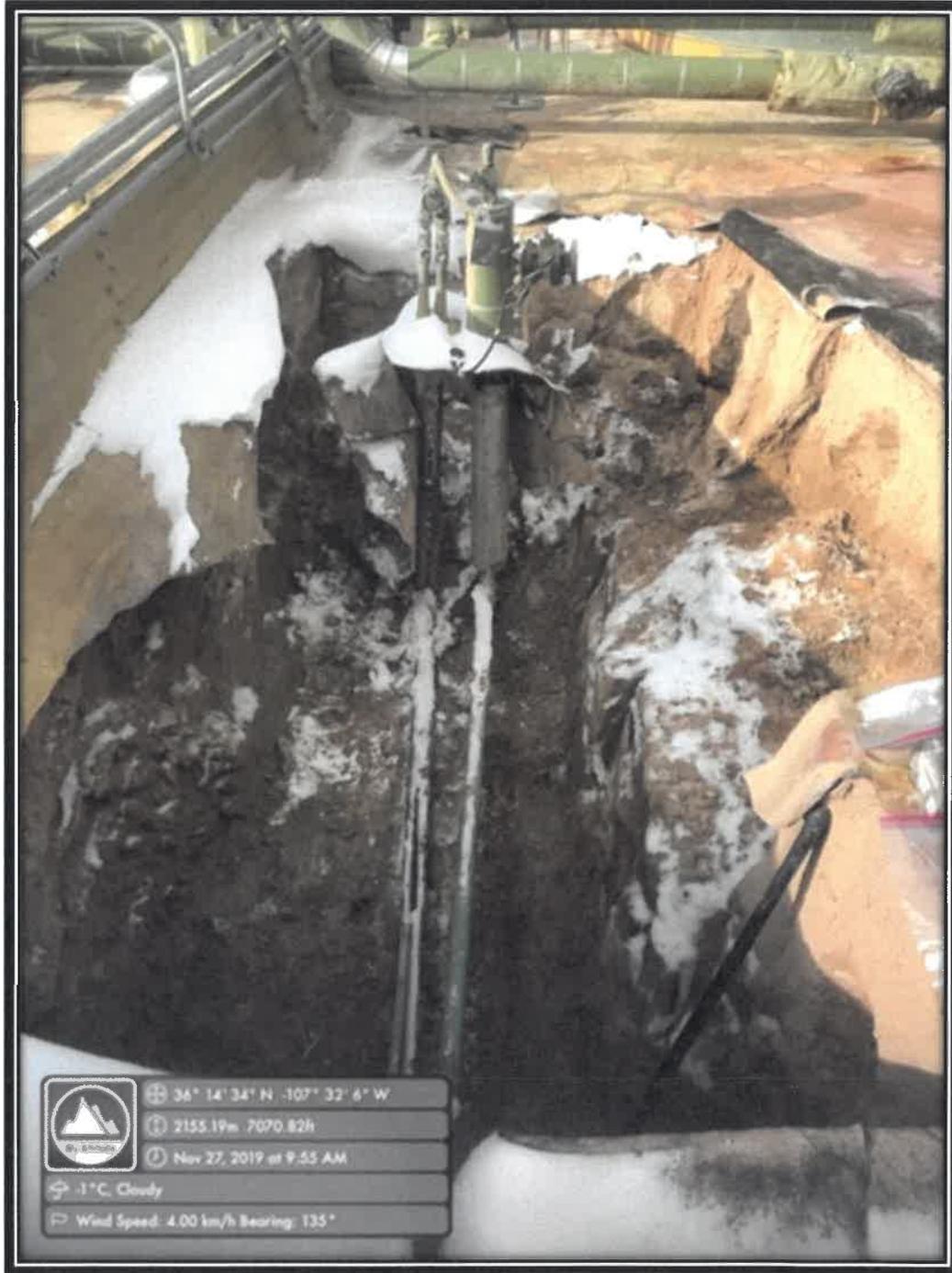
Photo 1: Release





Enduring Resources, LLC  
Spill Closure Report  
NE Chaco COM 168H

Photo 2: Excavation on sampling event 11/27/2019





Enduring Resources, LLC  
Spill Closure Report  
NE Chaco COM 168H

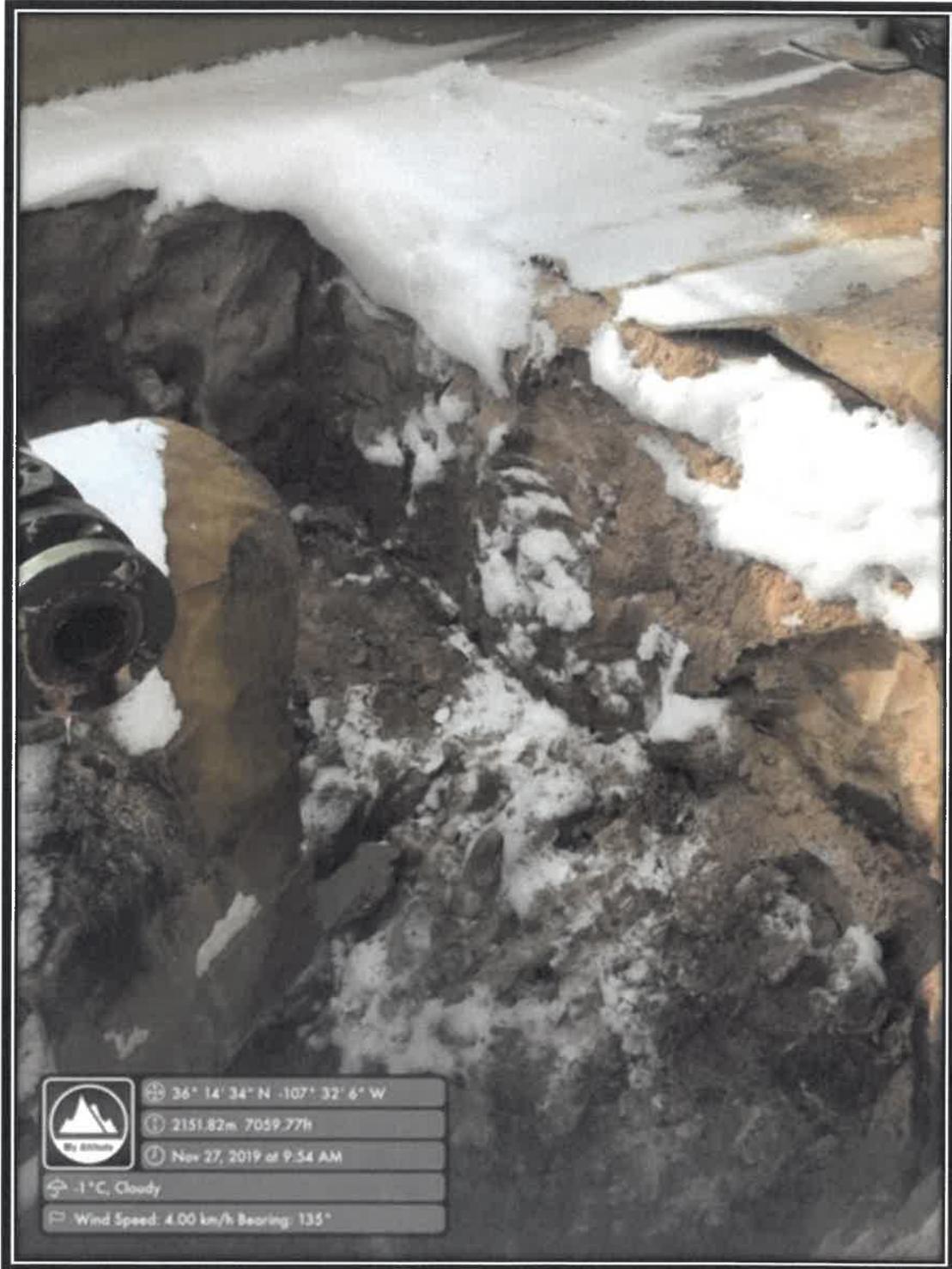
Photo 3: North Wall





Enduring Resources, LLC  
Spill Closure Report  
NE Chaco COM 168H

Photo 4: West Wall





Enduring Resources, LLC  
Spill Closure Report  
NE Chaco COM 168H

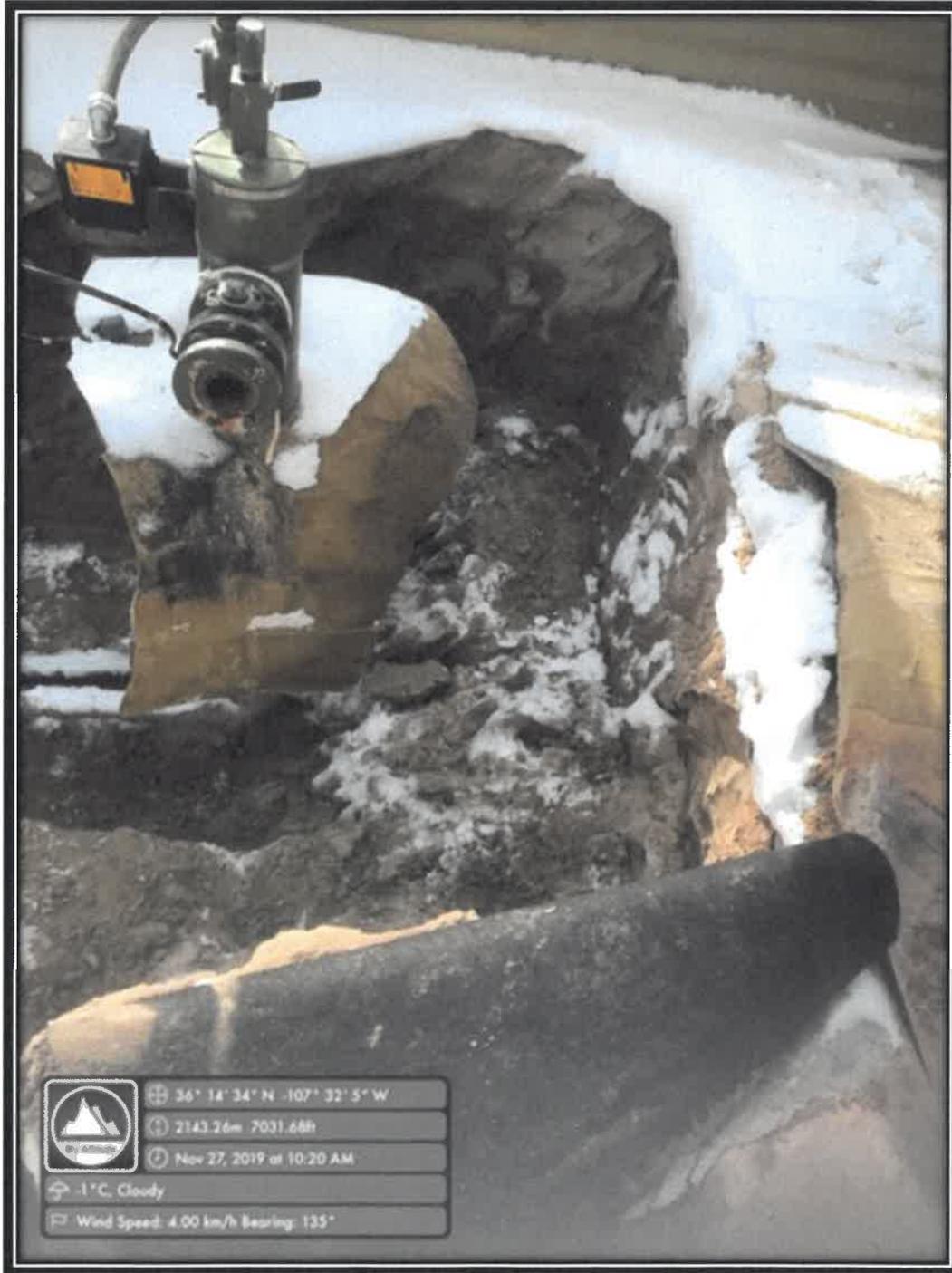
Photo 5: South Wall





Enduring Resources, LLC  
Spill Closure Report  
NE Chaco COM 168H

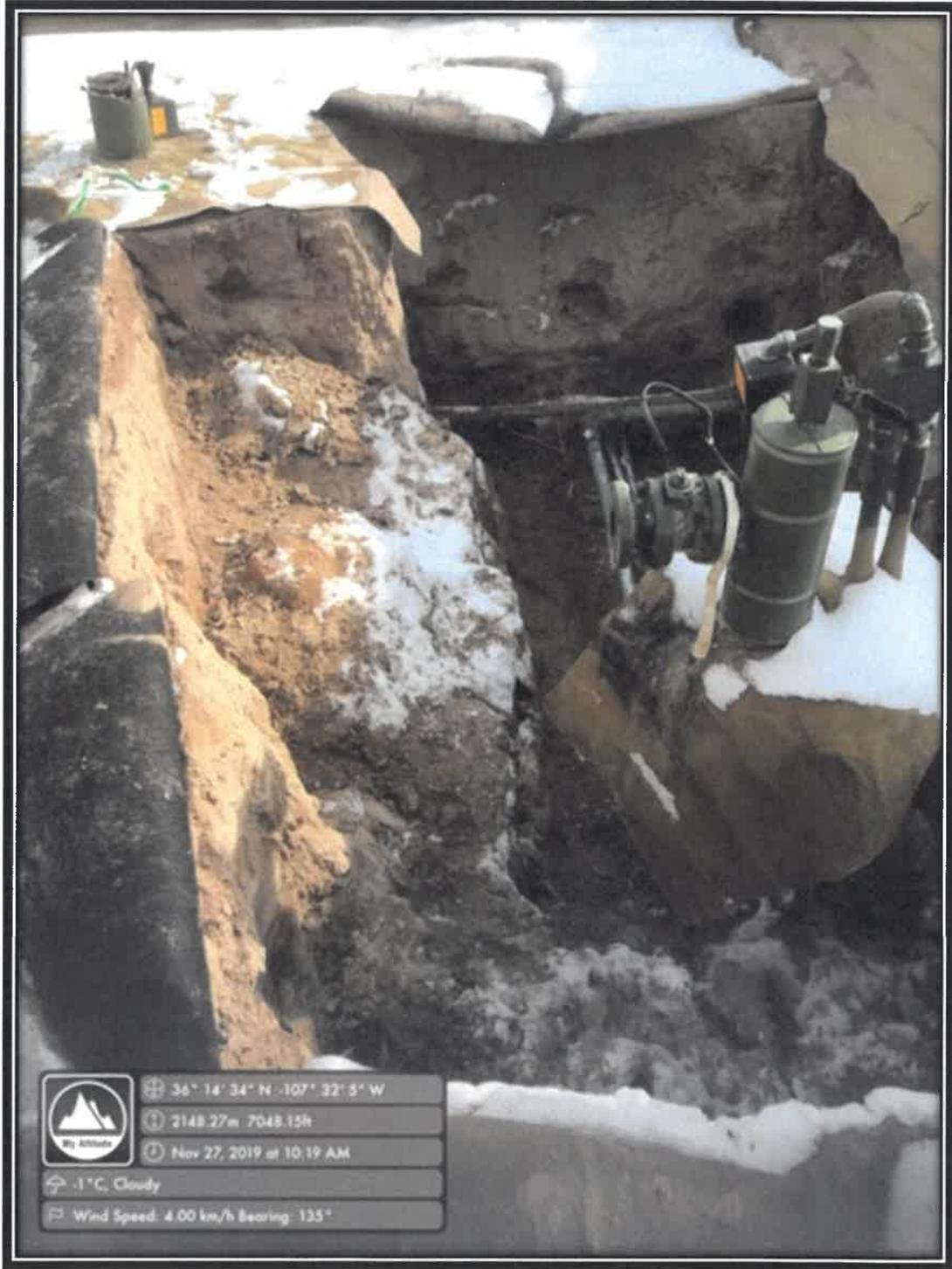
Photo 6: West Wall





Enduring Resources, LLC  
Spill Closure Report  
NE Chaco COM 168H

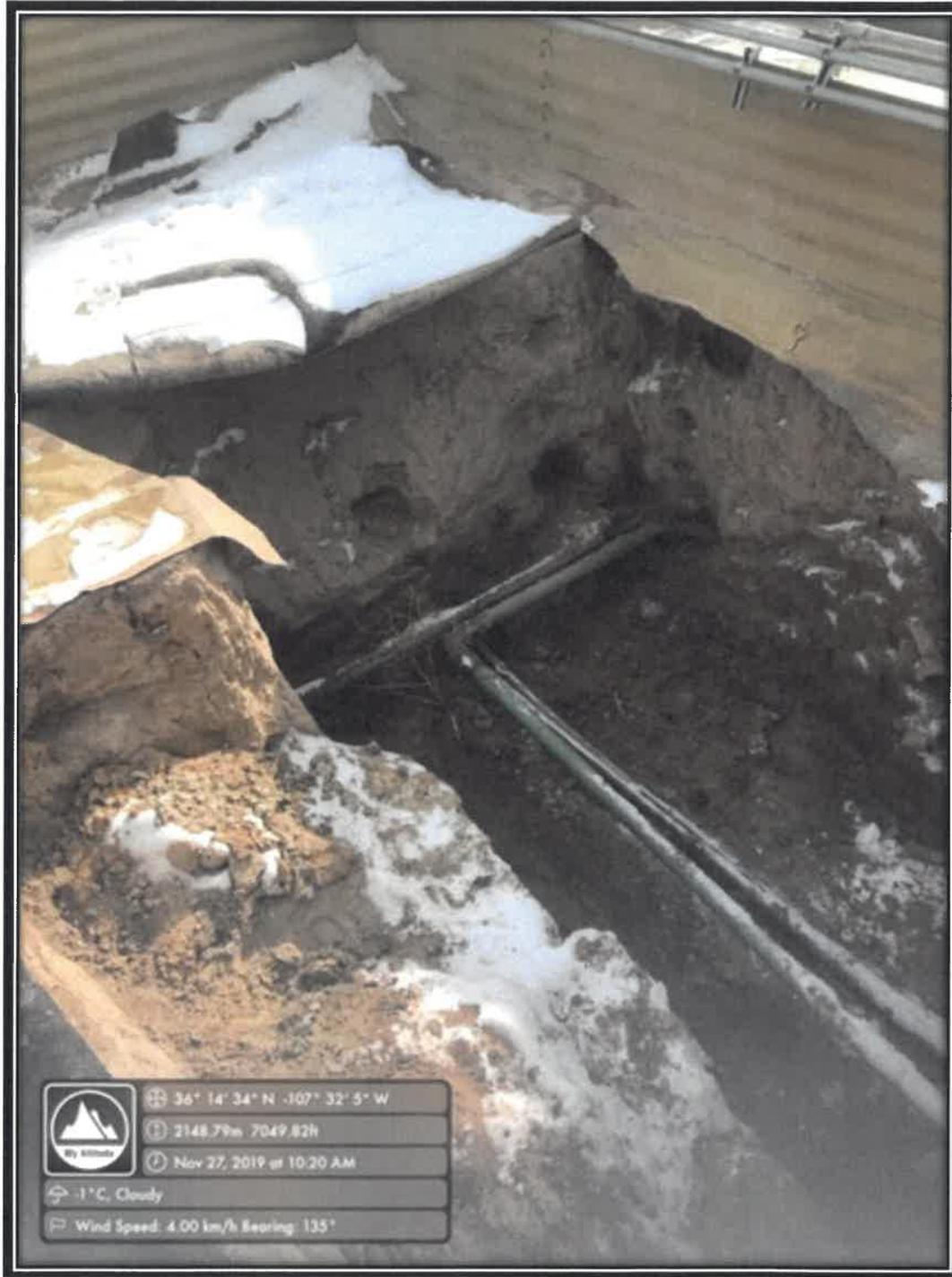
Photo 7: North Wall





Enduring Resources, LLC  
Spill Closure Report  
NE Chaco COM 168H

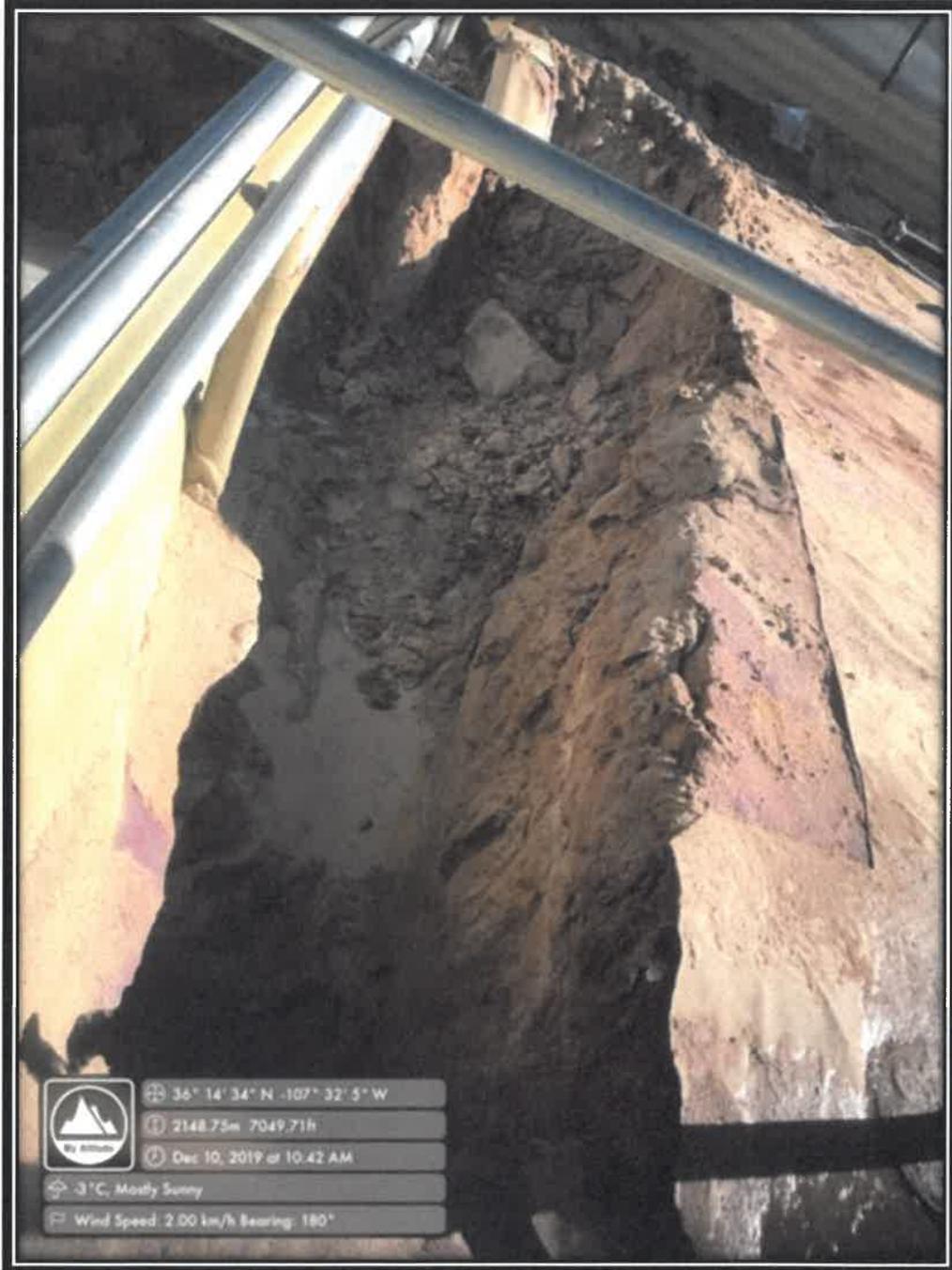
Photo 8: East Wall





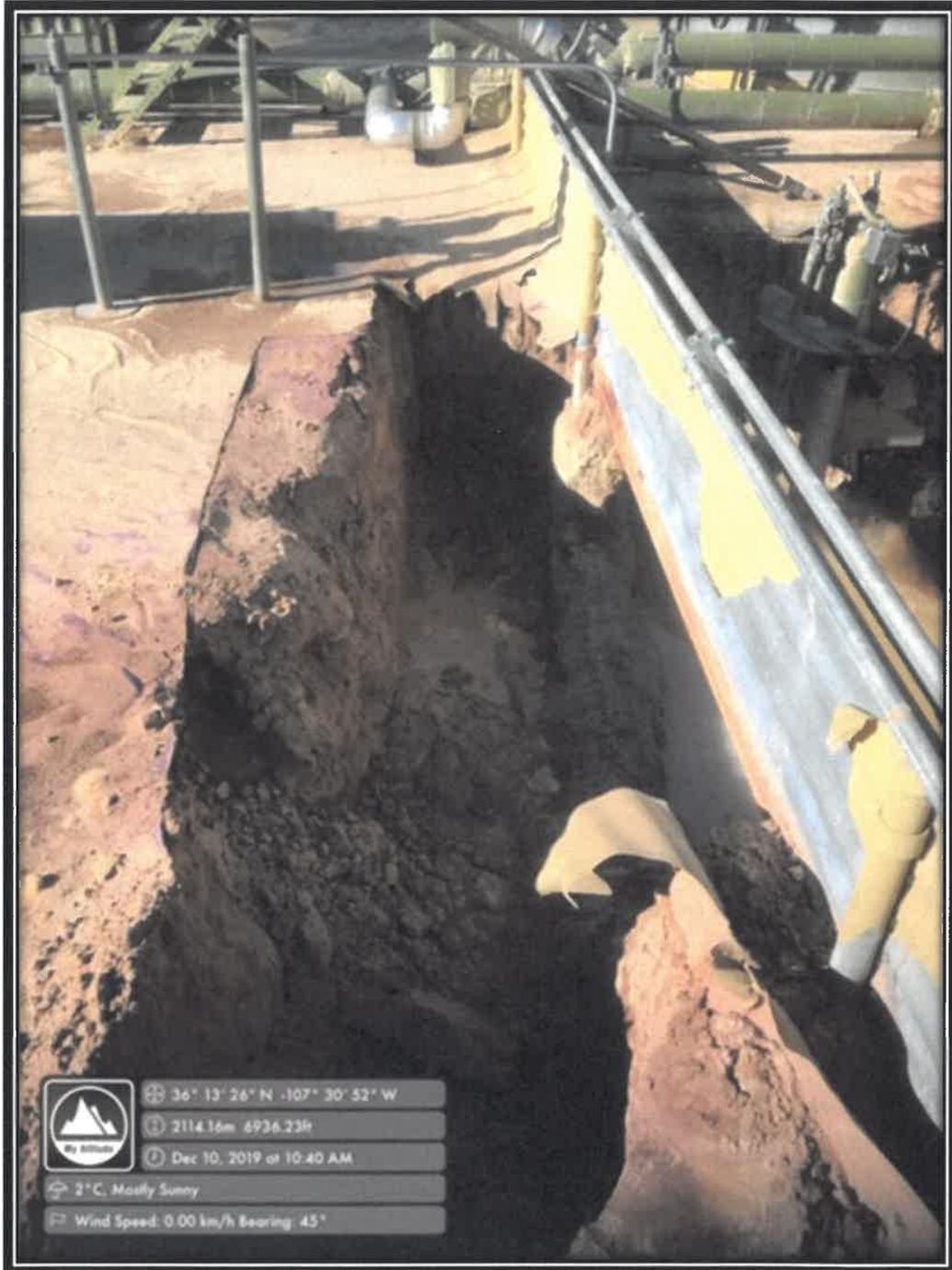
Enduring Resources, LLC  
Spill Closure Report  
NE Chaco COM 168H

Photo 9 & 10: South Wall after additional excavation





Enduring Resources, LLC  
Spill Closure Report  
NE Chaco COM 168H



NE Chaco COM 168H Sample Results Table

Sample Name	Date	DRO	GRO	GRO +	ORO	Total TPH	Benzene	Toluene	Ethylbenzene	Xylenes	Total		Square Footage
											BTEX	Chlorides	
STANDARD	NA	NA	NA	1,000	NA	2,500	10	NA	NA	NA	50	20,000	200 sq. ft
Bottom	11/27/2019	37	<20	37	<50	37	<0.250	<0.250	<0.250	<0.250	<0.1	90.7	104
East Wall	11/27/2019	<25	<20	<45	<50	<95	<0.250	<0.250	<0.250	<0.250	<0.1	159	55
South Wall	11/27/2019	<25	<20	<45	<50	<95	<0.250	<0.250	<0.250	<0.250	<0.1	1310	65
West Wall	11/27/2019	36.6	<20	36.60	<50	<95	<0.250	<0.250	<0.250	<0.250	<0.1	<20	50
North Wall	11/27/2019	77	<20	77	<50	77.4	<0.250	<0.250	<0.250	<0.250	<0.1	477	55
South Wall	12/10/2019	<25	<20	<45	<50	<95	<0.250	<0.250	<0.250	<0.250	<0.1	111	95

CLOSURE SAMPLES

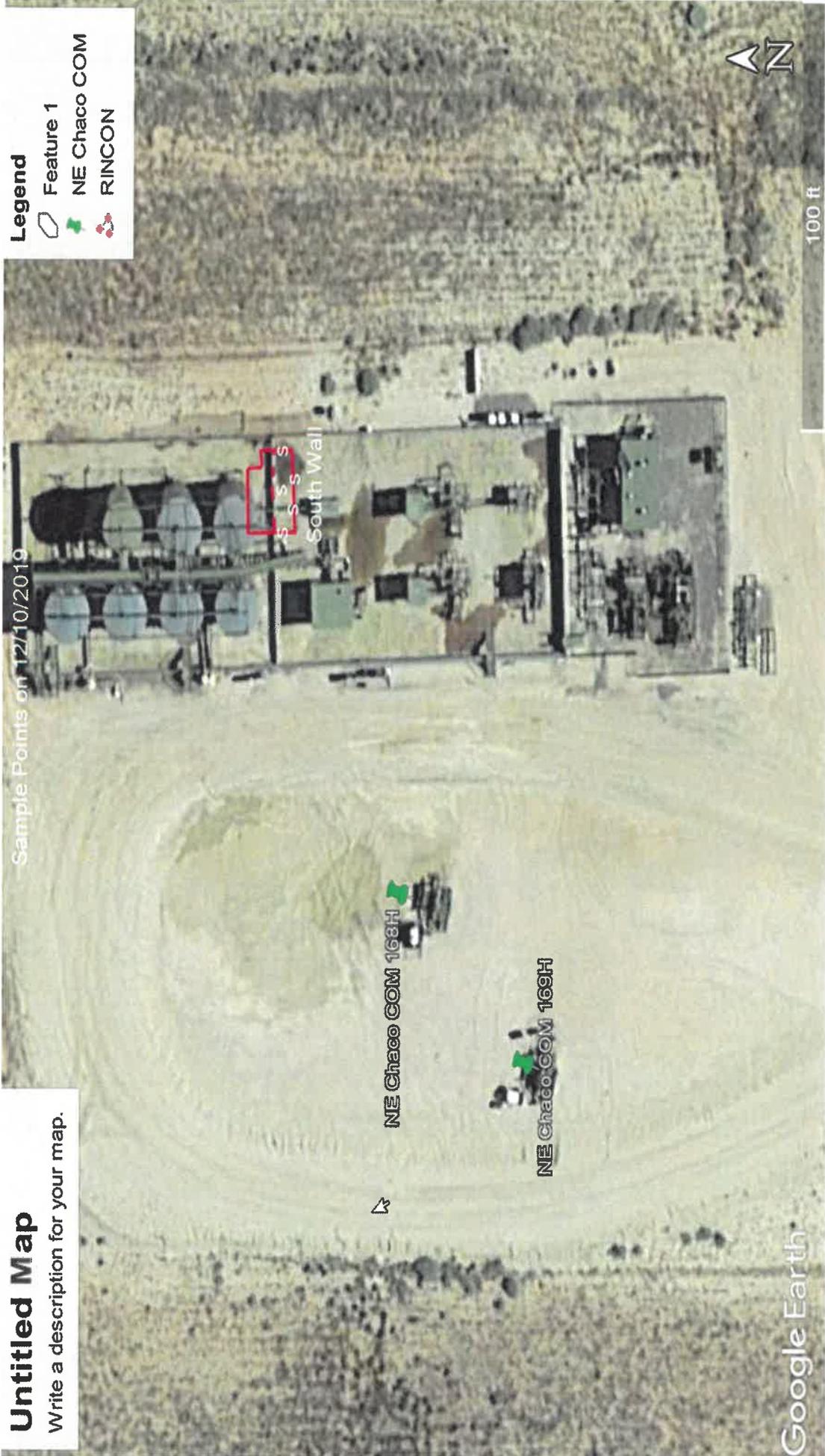
# Untitled Map

ite a description for your map.

**Legend**

-  Feature 1
-  NE Chaco C
-  RINCON

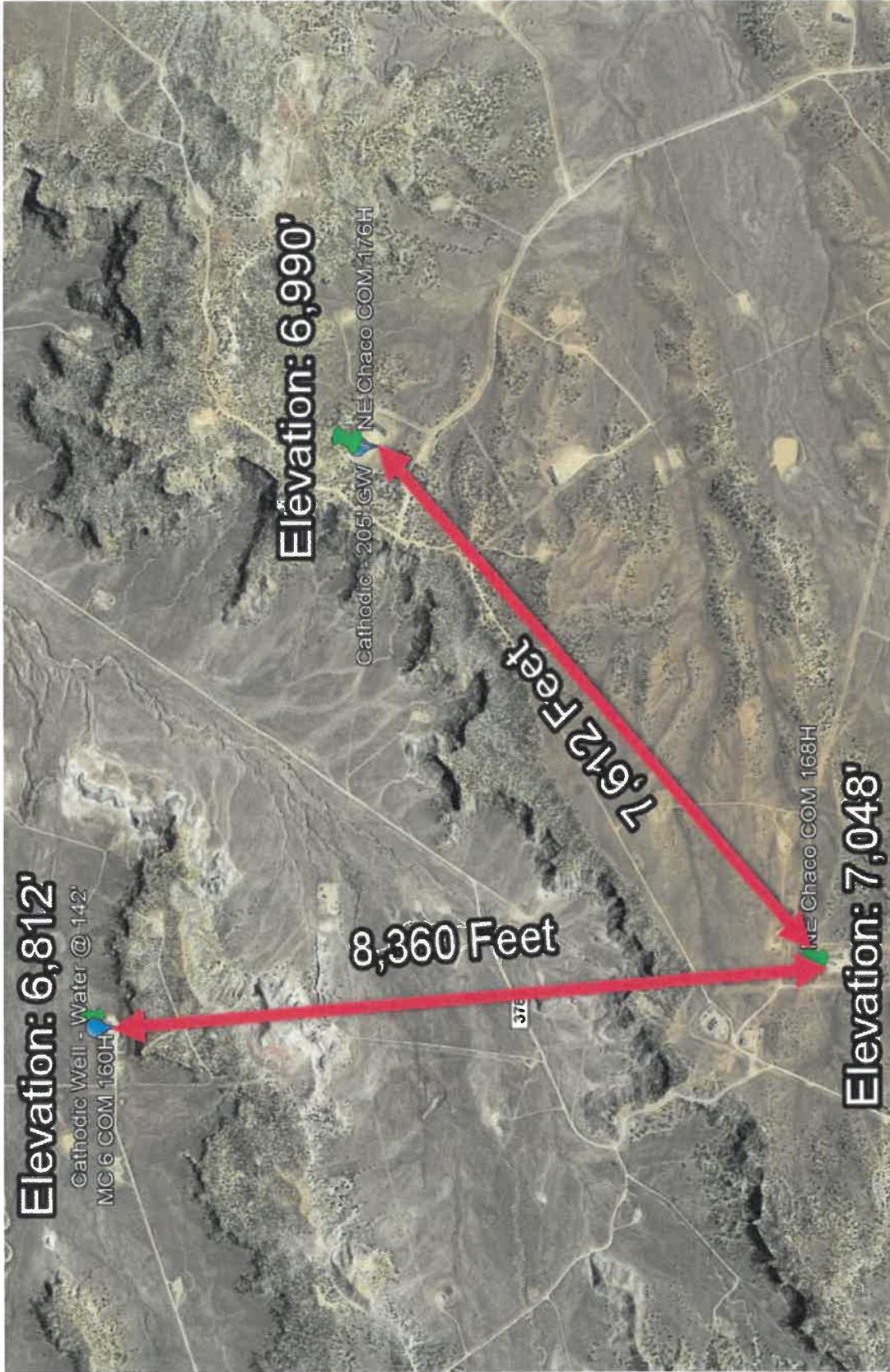


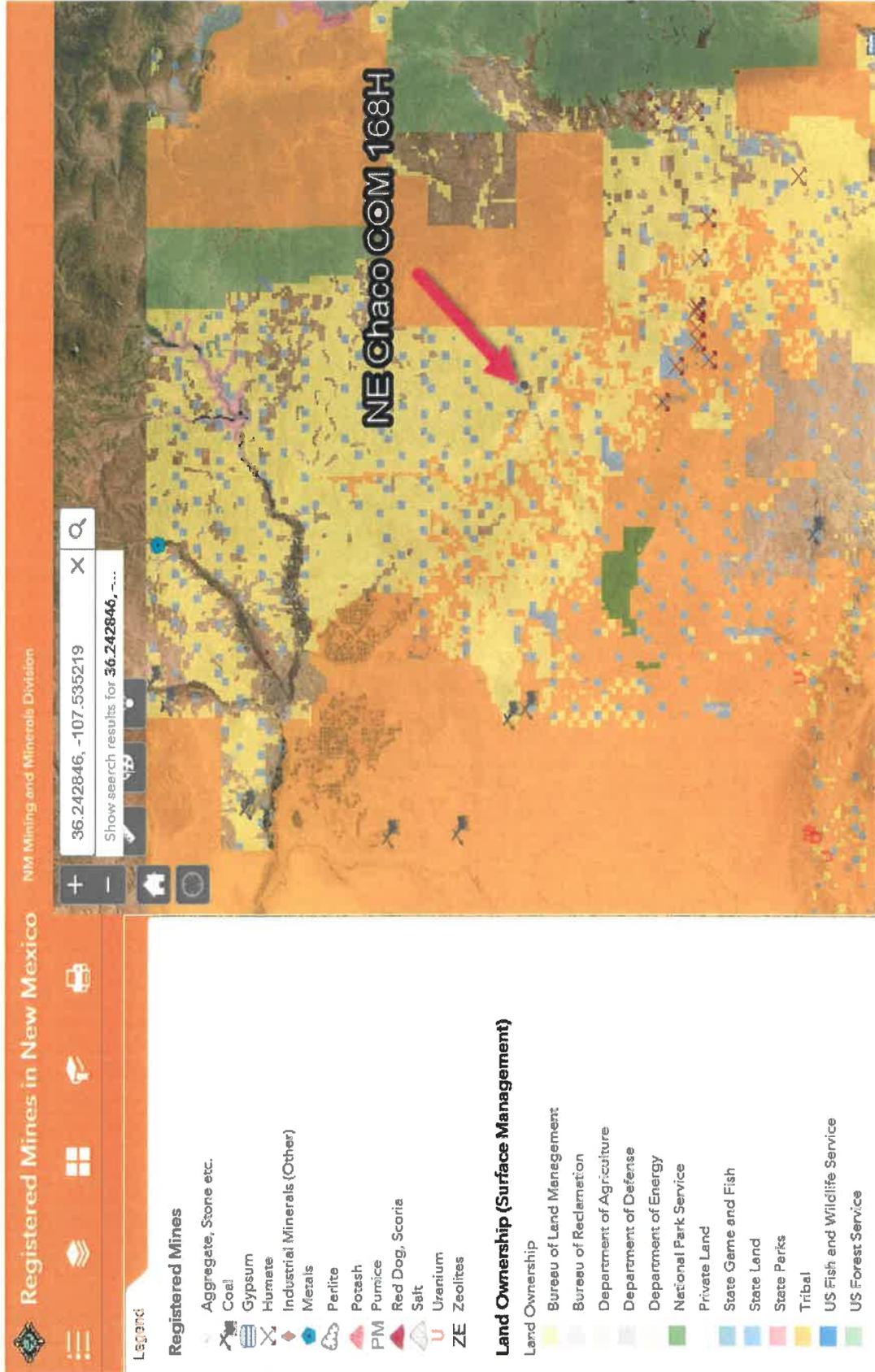


### Untitled Map

Write a description for your map.









**National Wetlands Inventory**  
surface waters and wetlands

BASEMAPS > MAP LAYERS >

- Wetlands
- Riparian
- Riparian Mapping Areas
- Data Source
  - Source Type
  - Image Scale
  - Image Year
- Areas of Interest
- FWS Managed Lands
- Historic Wetland Data

Measure



1,600 Feet

GET DATA

ABOUT

# National Flood Hazard Layer FIRMette



36°14'48.75"N



107°31'48.06"W

USGS The National Map: Orthoimagery, Data refreshed April 2019, 36°14'19.74"N



## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

### SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

### OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee, See Notes, Zone X
- Area with Flood Risk due to Levee Zone D

### OTHER AREAS

- NO SCREEN
- Area of Minimal Flood Hazard Zone X Effective LOMRs
- Area of Undetermined Flood Hazard Zone

### GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

### OTHER FEATURES

- Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

### MAP PANELS

- Digital Data Available
- No Digital Data Available
- Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/3/2019 at 5:54:38 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRMS panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

**Ground Bed Drilling Log**

Company: WPK Energy Well: Chaco / Chaco Date: 10-24 27  
 Location: T-23-N B6-w Sub State: New Mexico Rig: Stacy #1  
 Ground Bed Depth: 300' Water Depth: 205' Diameter: 6 3/4  
 Fuel Usage: 130 gal

DEPTH	FORMATION	OTHER
<u>0-20'</u>	Sand Stone, Shale, Sand w/ Shale w/ Sand	<u>PVC (2)</u>
<u>20-80</u>	<u>Sand Stone</u> , Shale, Sand w/ Shale w/ Sand	_____
<u>80-100</u>	Sand Stone, Shale, <u>Sand w/ Shale</u> w/ Sand	_____
<u>100-140</u>	<u>Sand Stone</u> , Shale, Sand w/ Shale w/ Sand	_____
<u>140-220</u>	Sand Stone, <u>Shale</u> , Sand w/ Shale w/ Sand	_____
<u>220-306</u>	Sand Stone, Shale, <u>Sand w/ Shale</u> w/ Sand	_____
_____	Sand Stone, Shale, Sand w/ Shale w/ Sand	_____
_____	Sand Stone, Shale, Sand w/ Shale w/ Sand	_____
_____	Sand Stone, Shale, Sand w/ Shale w/ Sand	_____
_____	Sand Stone, Shale, Sand w/ Shale w/ Sand	_____
_____	Sand Stone, Shale, Sand w/ Shale w/ Sand	_____
_____	Sand Stone, Shale, Sand w/ Shale w/ Sand	_____
_____	Sand Stone, Shale, Sand w/ Shale w/ Sand	_____

OCD  
 ~ 36.2575 N  
 107.51595 W

GROUNDWATER DEPTH LOG			
Company: WPX Energy		Location: Chaco #176H / #177H	
Probe type: Pavers			
Date	Time	Depth	Comments
10/24/14	1:30pm	30ft	Drilled hole to 30ft let set
10/25/14	7:20am	20.5ft	Tested w/ probe water at 20.5ft

**Ground Bed Drilling Log**

Company: WPX Energy Well: Charo #159H #160H #1901H Date: 9-11-2015  
 Location: Sec 35 T24N R7W State: New Mexico Rig: String #1  
 Ground Bed Depth: 360' Water Depth: 142' Diameter: 10"  
 Fuel: 98 gal Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

DEPTH	FORMATION	OTHER
<u>0-40</u>	Sand Stone, Shale, Sand w/ Shale w/ Sand	<u>PVC</u>
<u>40-110</u>	<u>Sand Stone</u> Shale, Sand w/ Shale w/ Sand	_____
<u>110-200</u>	Sand Stone, Shale, <u>Sand w/ Shale w/ Sand</u>	_____
<u>200-260</u>	Sand Stone, <u>Shale</u> , Sand w/ Shale w/ Sand	_____
<u>260-360</u>	Sand Stone, Shale, <u>Sand w/ Shale w/ Sand</u>	_____
_____	Sand Stone, Shale, Sand w/ Shale w/ Sand	_____
_____	Sand Stone, Shale, Sand w/ Shale w/ Sand	_____
_____	Sand Stone, Shale, Sand w/ Shale w/ Sand	_____
_____	Sand Stone, Shale, Sand w/ Shale w/ Sand	_____
_____	Sand Stone, Shale, Sand w/ Shale w/ Sand	_____
_____	Sand Stone, Shale, Sand w/ Shale w/ Sand	_____
_____	Sand Stone, Shale, Sand w/ Shale w/ Sand	_____

Company: WPX Energy		Location: <u>Charo #159H #160H #1901H</u>	
Probe type: <u>Powerwell/Sounder</u>			
Date	Time	Depth	Comments
<u>9-11-15</u>	<u>7:30am</u>	<u>40'</u>	<u>Drilled 40'</u>
	<u>8:30am</u>	<u>40'</u>	<u>test: No water</u>
	<u>9:00</u>	<u>60'</u>	<u>Drilled 60' - set PVC</u>
	<u>10:00</u>	<u>60'</u>	<u>test: No water</u>
	<u>11:15</u>	<u>115'</u>	<u>Drilled 115'</u>
	<u>12:15</u>	<u>115'</u>	<u>test: no water</u>
	<u>4:30</u>	<u>360'</u>	<u>test water @ 142'</u>
<u>9-14-15</u>	<u>9:15</u>	<u>142'</u>	<u>test water @ 142'</u>
	<u>11:45</u>		<u>Finished anode bed.</u>

## Chad Snell

---

**From:** Chad Snell  
**Sent:** Friday, December 06, 2019 10:02 AM  
**To:** 'Smith, Cory, EMNRD'; 'adeloye@blm.gov'  
**Cc:** James McDaniel  
**Subject:** RE: NE Chaco Com 168H Closure Sampling

Gentlemen,

Please accept this email as the required 48 hour notice for closure sampling at the NE Chaco Com 168H. One wall came back above standards and will need to be resampled after further excavation. Sample activities will occur Tuesday December 10<sup>th</sup> at 10:30am. Please let me know if you have any questions.

Thank you.

**From:** Chad Snell  
**Sent:** Monday, November 25, 2019 8:51 AM  
**To:** Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; 'adeloye@blm.gov' <adeloye@blm.gov>  
**Cc:** James McDaniel <JMcDaniel@enduringresources.com>  
**Subject:** NE Chaco Com 168H Closure Sampling

Gentlemen,

Please accept this email as the required 48 hour notice for closure sampling at the NE Chaco Com 168H (API: 30-039-31173, Sec: 12, TWN: 23N, RGE: 7W). Sampling activities will take place Wednesday November 27<sup>th</sup> 2019 at 9:30am. Feel free to contact me with any questions.

Thanks

Chad Snell  
HSE Tech  
Enduring Resources  
(505) 444-0586.



## Analytical Report

### Report Summary

Client: Enduring Resources, LLC

Samples Received: 12/2/2019

Job Number: 17065-0017

Work Order: P912002

Project Name/Location: NE Chaco Com 168H

Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Walter Hinchman', is written over a horizontal line.

Date: 12/4/19

Walter Hinchman, Laboratory Director



Envirotech Inc. certifies the test results meet all requirements of TNI unless footnoted otherwise.  
 Statement of Data Authenticity: Envirotech, Inc, attests the data reported has not been altered in any way.  
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 Envirotech, Inc, holds the Utah TNI certification NM009792018-1 for the data reported.  
 Envirotech, Inc, holds the Texas TNI certification T104704557-19-2 for the data reported.



Enduring Resources, LLC  
511 16th Street, Suite 700  
Denver CO, 80202

Project Name: NE Chaco Com 168H  
Project Number: 17065-0017  
Project Manager: Chad Snell

**Reported:**  
12/04/19 09:02

### Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Bottom	P912002-01A	Soil	11/27/19	12/02/19	Glass Jar, 4 oz.
East Wall	P912002-02A	Soil	11/27/19	12/02/19	Glass Jar, 4 oz.
South Wall	P912002-03A	Soil	11/27/19	12/02/19	Glass Jar, 4 oz.
West Wall	P912002-04A	Soil	11/27/19	12/02/19	Glass Jar, 4 oz.
North Wall	P912002-05A	Soil	11/27/19	12/02/19	Glass Jar, 4 oz.

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Enduring Resources, LLC 511 16th Street, Suite 700 Denver CO, 80202	Project Name: NE Chaco Com 168H Project Number: 17065-0017 Project Manager: Chad Snell	Reported: 12/04/19 09:02
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**Bottom**  
**P912002-01 (Solid)**

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b><u>Volatiles by EPA 8021</u></b>									
Benzene	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		102 %		50-150	1949009	12/02/19	12/03/19	EPA 8021B	
<b><u>Nonhalogenated Organics by 8015 - DRO/ORO</u></b>									
Diesel Range Organics (C10-C28)	37.4	25.0	mg/kg	1	1949008	12/02/19	12/02/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1949008	12/02/19	12/02/19	EPA 8015D	
<i>Surrogate: n-Nonane</i>		94.4 %		50-200	1949008	12/02/19	12/02/19	EPA 8015D	
<b><u>Nonhalogenated Organics by 8015 - GRO</u></b>									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		86.5 %		50-150	1949009	12/02/19	12/03/19	EPA 8015D	
<b><u>Anions by 300.0/9056A</u></b>									
Chloride	90.7	20.0	mg/kg	1	1949010	12/02/19	12/02/19	EPA 300.0/9056A	

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Enduring Resources, LLC 511 16th Street, Suite 700 Denver CO, 80202	Project Name: NE Chaco Com 168H Project Number: 17065-0017 Project Manager: Chad Snell	Reported: 12/04/19 09:02
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**East Wall  
P912002-02 (Solid)**

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Volatile Organics by EPA 8021</b>									
Benzene	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		101 %		50-150	1949009	12/02/19	12/03/19	EPA 8021B	
<b>Nonhalogenated Organics by 8015 - DRO/ORO</b>									
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1949008	12/02/19	12/03/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1949008	12/02/19	12/03/19	EPA 8015D	
<i>Surrogate: n-Nonane</i>		95.1 %		50-200	1949008	12/02/19	12/03/19	EPA 8015D	
<b>Nonhalogenated Organics by 8015 - GRO</b>									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		86.9 %		50-150	1949009	12/02/19	12/03/19	EPA 8015D	
<b>Anions by 300.0/9056A</b>									
Chloride	159	20.0	mg/kg	1	1949010	12/02/19	12/02/19	EPA 300.0/9056A	

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**South Wall  
P912002-03 (Solid)**

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Volatile Organics by EPA 8021</b>									
Benzene	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		104 %		50-150	1949009	12/02/19	12/03/19	EPA 8021B	
<b>Nonhalogenated Organics by 8015 - DRO/ORO</b>									
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1949008	12/02/19	12/03/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1949008	12/02/19	12/03/19	EPA 8015D	
<i>Surrogate: n-Nonane</i>		95.0 %		50-200	1949008	12/02/19	12/03/19	EPA 8015D	
<b>Nonhalogenated Organics by 8015 - GRO</b>									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		87.6 %		50-150	1949009	12/02/19	12/03/19	EPA 8015D	
<b>Anions by 300.0/9056A</b>									
Chloride	1310	40.0	mg/kg	2	1949010	12/02/19	12/02/19	EPA 300.0/9056A	

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**West Wall  
P912002-04 (Solid)**

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b><u>Volatile Organics by EPA 8021</u></b>									
Benzene	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		102 %		50-150	1949009	12/02/19	12/03/19	EPA 8021B	
<b><u>Nonhalogenated Organics by 8015 - DRO/ORO</u></b>									
Diesel Range Organics (C10-C28)	36.6	25.0	mg/kg	1	1949008	12/02/19	12/03/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1949008	12/02/19	12/03/19	EPA 8015D	
<i>Surrogate: n-Nonane</i>		98.9 %		50-200	1949008	12/02/19	12/03/19	EPA 8015D	
<b><u>Nonhalogenated Organics by 8015 - GRO</u></b>									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		86.8 %		50-150	1949009	12/02/19	12/03/19	EPA 8015D	
<b><u>Anions by 300.0/9056A</u></b>									
Chloride	ND	20.0	mg/kg	1	1949010	12/02/19	12/02/19	EPA 300.0/9056A	

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Enduring Resources, LLC  
511 16th Street, Suite 700  
Denver CO, 80202

Project Name: NE Chaco Com 168H  
Project Number: 17065-0017  
Project Manager: Chad Snell

Reported:  
12/04/19 09:02

**North Wall  
P912002-05 (Solid)**

Reporting

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b><u>Volatile Organics by EPA 8021</u></b>									
Benzene	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		105 %		50-150	1949009	12/02/19	12/03/19	EPA 8021B	
<b><u>Nonhalogenated Organics by 8015 - DRO/ORO</u></b>									
Diesel Range Organics (C10-C28)	77.4	25.0	mg/kg	1	1949008	12/02/19	12/03/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1949008	12/02/19	12/03/19	EPA 8015D	
<i>Surrogate: n-Nonane</i>		94.3 %		50-200	1949008	12/02/19	12/03/19	EPA 8015D	
<b><u>Nonhalogenated Organics by 8015 - GRO</u></b>									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1949009	12/02/19	12/03/19	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		86.4 %		50-150	1949009	12/02/19	12/03/19	EPA 8015D	
<b><u>Anions by 300.0/9056A</u></b>									
Chloride	477	20.0	mg/kg	1	1949010	12/02/19	12/02/19	EPA 300.0/9056A	

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Enduring Resources, LLC 511 16th Street, Suite 700 Denver CO, 80202	Project Name: NE Chaco Com 168H Project Number: 17065-0017 Project Manager: Chad Snell	Reported: 12/04/19 09:02
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## Volatile Organics by EPA 8021 - Quality Control

## Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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## Batch 1949009 - Purge and Trap EPA 5030A

## Blank (1949009-BLK1)

Prepared: 12/02/19 1 Analyzed: 12/03/19 0

Benzene	ND	0.0250	mg/kg							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
p,m-Xylene	ND	0.0500	"							
o-Xylene	ND	0.0250	"							
Total Xylenes	ND	0.0250	"							
Surrogate: 4-Bromochlorobenzene-PID	8.21		"	8.00		103	50-150			

## LCS (1949009-BS1)

Prepared: 12/02/19 1 Analyzed: 12/03/19 0

Benzene	5.18	0.0250	mg/kg	5.00		104	70-130			
Toluene	5.28	0.0250	"	5.00		106	70-130			
Ethylbenzene	5.20	0.0250	"	5.00		104	70-130			
p,m-Xylene	10.3	0.0500	"	10.0		103	70-130			
o-Xylene	5.17	0.0250	"	5.00		103	70-130			
Total Xylenes	15.5	0.0250	"	15.0		103	70-130			
Surrogate: 4-Bromochlorobenzene-PID	8.40		"	8.00		105	50-150			

## Matrix Spike (1949009-MS1)

Source: P912001-01

Prepared: 12/02/19 1 Analyzed: 12/03/19 0

Benzene	5.20	0.0250	mg/kg	5.00	ND	104	54.3-133			
Toluene	5.31	0.0250	"	5.00	ND	106	61.4-130			
Ethylbenzene	5.23	0.0250	"	5.00	ND	105	61.4-133			
p,m-Xylene	10.4	0.0500	"	10.0	ND	104	63.3-131			
o-Xylene	5.21	0.0250	"	5.00	ND	104	63.3-131			
Total Xylenes	15.6	0.0250	"	15.0	ND	104	63.3-131			
Surrogate: 4-Bromochlorobenzene-PID	8.31		"	8.00		104	50-150			

## Matrix Spike Dup (1949009-MSD1)

Source: P912001-01

Prepared: 12/02/19 1 Analyzed: 12/03/19 0

Benzene	5.20	0.0250	mg/kg	5.00	ND	104	54.3-133	0.0875	20	
Toluene	5.29	0.0250	"	5.00	ND	106	61.4-130	0.296	20	
Ethylbenzene	5.21	0.0250	"	5.00	ND	104	61.4-133	0.339	20	
p,m-Xylene	10.3	0.0500	"	10.0	ND	103	63.3-131	0.639	20	
o-Xylene	5.18	0.0250	"	5.00	ND	104	63.3-131	0.428	20	
Total Xylenes	15.5	0.0250	"	15.0	ND	103	63.3-131	0.569	20	
Surrogate: 4-Bromochlorobenzene-PID	8.26		"	8.00		103	50-150			

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Enduring Resources, LLC 511 16th Street, Suite 700 Denver CO, 80202	Project Name: NE Chaco Com 168H Project Number: 17065-0017 Project Manager: Chad Snell	Reported: 12/04/19 09:02
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**Nonhalogenated Organics by 8015 - DRO/ORO - Quality Control**

**Envirotech Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1949008 - DRO Extraction EPA 3570</b>										
<b>Blank (1949008-BLK1)</b>					Prepared: 12/02/19 0 Analyzed: 12/02/19 1					
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg							
Oil Range Organics (C28-C40)	ND	50.0	"							
Surrogate: n-Nonane	49.8		"	50.0		99.7	50-200			
<b>LCS (1949008-BS1)</b>					Prepared: 12/02/19 0 Analyzed: 12/02/19 1					
Diesel Range Organics (C10-C28)	484	25.0	mg/kg	500		96.8	38-132			
Surrogate: n-Nonane	49.6		"	50.0		99.1	50-200			
<b>Matrix Spike (1949008-MS1)</b>					Source: P911128-01		Prepared: 12/02/19 0 Analyzed: 12/02/19 2			
Diesel Range Organics (C10-C28)	502	25.0	mg/kg	500	ND	100	38-132			
Surrogate: n-Nonane	50.6		"	50.0		101	50-200			
<b>Matrix Spike Dup (1949008-MSD1)</b>					Source: P911128-01		Prepared: 12/02/19 0 Analyzed: 12/02/19 2			
Diesel Range Organics (C10-C28)	487	25.0	mg/kg	500	ND	97.3	38-132	3.09	20	
Surrogate: n-Nonane	49.6		"	50.0		99.2	50-200			

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Enduring Resources, LLC  
511 16th Street, Suite 700  
Denver CO, 80202

Project Name: NE Chaco Com 168H  
Project Number: 17065-0017  
Project Manager: Chad Snell

Reported:  
12/04/19 09:02

### Nonhalogenated Organics by 8015 - GRO - Quality Control

#### Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1949009 - Purge and Trap EPA 5030A</b>										
<b>Blank (1949009-BLK1)</b>										
Prepared: 12/02/19 1 Analyzed: 12/03/19 0										
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg							
Surrogate: 1-Chloro-4-fluorobenzene-FID	6.87		"	8.00		85.8	50-150			
<b>LCS (1949009-BS2)</b>										
Prepared: 12/02/19 1 Analyzed: 12/03/19 0										
Gasoline Range Organics (C6-C10)	48.0	20.0	mg/kg	50.0		95.9	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.20		"	8.00		90.0	50-150			
<b>Matrix Spike (1949009-MS2)</b>										
Source: P912001-01 Prepared: 12/02/19 1 Analyzed: 12/03/19 0										
Gasoline Range Organics (C6-C10)	48.2	20.0	mg/kg	50.0	ND	96.5	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.23		"	8.00		90.3	50-150			
<b>Matrix Spike Dup (1949009-MSD2)</b>										
Source: P912001-01 Prepared: 12/02/19 1 Analyzed: 12/03/19 1										
Gasoline Range Organics (C6-C10)	48.2	20.0	mg/kg	50.0	ND	96.4	70-130	0.105	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.07		"	8.00		88.4	50-150			

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Enduring Resources, LLC 511 16th Street, Suite 700 Denver CO, 80202	Project Name: NE Chaco Com 168H Project Number: 17065-0017 Project Manager: Chad Snell	Reported: 12/04/19 09:02
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**Anions by 300.0/9056A - Quality Control**

**Envirotech Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1949010 - Anion Extraction EPA 300.0/9056A</b>										
<b>Blank (1949010-BLK1)</b>				Prepared & Analyzed: 12/02/19 1						
Chloride	ND	20.0	mg/kg							
<b>LCS (1949010-BS1)</b>				Prepared & Analyzed: 12/02/19 1						
Chloride	253	20.0	mg/kg	250		101	90-110			
<b>Matrix Spike (1949010-MS1)</b>				Source: P912001-01		Prepared & Analyzed: 12/02/19 1				
Chloride	258	20.0	mg/kg	250	ND	103	80-120			
<b>Matrix Spike Dup (1949010-MSD1)</b>				Source: P912001-01		Prepared & Analyzed: 12/02/19 1				
Chloride	256	20.0	mg/kg	250	ND	102	80-120	1.16	20	

QC Summary Report

Comment:

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

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Enduring Resources, LLC 511 16th Street, Suite 700 Denver CO, 80202	Project Name: NE Chaco Com 168H Project Number: 17065-0017 Project Manager: Chad Snell	Reported: 12/04/19 09:02
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**Notes and Definitions**

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

RPD Relative Percent Difference

\*\* Methods marked with \*\* are non-accredited methods.

Soil data is reported on an "as received" weight basis, unless reported otherwise.

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Project Information

Chain of Custody

Page 1 of 1

Page 13 of 13

<b>Client:</b> <u>Enduring Resources</u> <b>Project:</b> <u>NE Chaco Coon 168th</u> <b>Project Manager:</b> <u>Chad Small</u> <b>Address:</b> <u>200 Energy Court</u> <b>City, State, Zip:</b> <u>Farmington, NM</u> <b>Phone:</b> <u>(505) 444-0586</u> <b>Email:</b> <u>CSmall@enduringresources.com</u> <u>chadsmall@enduringresources.com</u>					<b>Report Attention</b> <b>Report due by:</b> _____ <b>Attention:</b> _____ <b>Address:</b> _____ <b>City, State, Zip:</b> _____ <b>Phone:</b> _____ <b>Email:</b> _____					<b>Lab Use Only</b> <b>Lab WO#</b> <u>P912002</u> <b>Job Number</b> <u>170680077</u> <b>Analysis and Method</b> DRD/DRD by 8015    GRD/DRD by 8015    BTEX by 8021    VOC by 8260    Metals 6010    Chloride 300.0    6010 Total P					<b>TAT</b> 1D <input type="checkbox"/> 3D <input checked="" type="checkbox"/>		<b>EPA Program</b> RCRA    CWA    SDWA		
										State NM    CO    UT    AZ									
										TX    OK									
										Remarks									
Time Sampled	Date Sampled	Matrix	No Containers	Sample ID	Lab Number	DRD/DRD by 8015	GRD/DRD by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	6010 Total P							
9:30	11-27-19	S	1	Bottom	1	X	X	X		X									
9:35			1	East well	2	X	X	X		X									
9:40			1	South well	3	X	X	X		X									
9:45			1	West well	4	X	X	X		X									
9:50			1	North well	5	X	X	X		X									
<b>Additional Instructions:</b> I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled by: <u>Chad Small</u> 12-2-19 Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 4°C on subsequent days.																			
Relinquished by: (Signature)		Date	Time	Received by: (Signature)		Date	Time	Received on ice:		Lab Use Only									
<u>Chad Small</u>		12-2-19	9:05am	<u>Rayna Lopez</u>		12/2/19	9:00	Y / (N)											
Relinquished by: (Signature)		Date	Time	Received by: (Signature)		Date	Time	T1 0.2    T2 0.9    T3 2.0											
Relinquished by: (Signature)		Date	Time	Received by: (Signature)		Date	Time	AVG Temp °C 1.0											
Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other										Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA									
Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.																			



5795 US Highway 64, Farmington, NM 87401  
 24 Hour Emergency Response Phone (800) 362-1879

Ph (505) 632-1881 Fx (505) 632-1885

envirotech-inc.com  
 labadmin@envirotech-inc.com



## Analytical Report

### Report Summary

Client: Enduring Resources, LLC

Samples Received: 12/10/2019

Job Number: 17065-0017

Work Order: P912020

Project Name/Location: NE Chaco Com 168H

Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Walter Hinchman', is written over a horizontal line.

Date: 12/12/19

Walter Hinchman, Laboratory Director



Envirotech Inc. certifies the test results meet all requirements of TNI unless footnoted otherwise.  
 Statement of Data Authenticity: Envirotech, Inc, attests the data reported has not been altered in any way.  
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 Envirotech, Inc, holds the Utah TNI certification NM009792018-1 for the data reported.  
 Envirotech, Inc, holds the Texas TNI certification T104704557-19-2 for the data reported.



Enduring Resources, LLC 511 16th Street, Suite 700 Denver CO, 80202	Project Name: NE Chaco Com 168H Project Number: 17065-0017 Project Manager: Chad Snell	<b>Reported:</b> 12/12/19 11:33
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**Analytical Report for Samples**

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
South Wall	P912020-01A	Soil	12/10/19	12/10/19	Glass Jar, 4 oz.

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**South Wall  
P912020-01 (Solid)**

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b><u>Volatile Organics by EPA 8021</u></b>									
Benzene	ND	0.0250	mg/kg	1	1950014	12/10/19	12/11/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1950014	12/10/19	12/11/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1950014	12/10/19	12/11/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1950014	12/10/19	12/11/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1950014	12/10/19	12/11/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1950014	12/10/19	12/11/19	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		99.8 %		50-150	1950014	12/10/19	12/11/19	EPA 8021B	
<b><u>Nonhalogenated Organics by 8015 - DRO/ORO</u></b>									
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1950011	12/10/19	12/10/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1950011	12/10/19	12/10/19	EPA 8015D	
<i>Surrogate: n-Nonane</i>		104 %		50-200	1950011	12/10/19	12/10/19	EPA 8015D	
<b><u>Nonhalogenated Organics by 8015 - GRO</u></b>									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1950014	12/10/19	12/11/19	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		81.3 %		50-150	1950014	12/10/19	12/11/19	EPA 8015D	
<b><u>Anions by 300.0/9056A</u></b>									
Chloride	111	20.0	mg/kg	1	1950009	12/10/19	12/10/19	EPA 300.0/9056A	

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## Volatile Organics by EPA 8021 - Quality Control

## Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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## Batch 1950014 - Purge and Trap EPA 5030A

## Blank (1950014-BLK1)

Prepared: 12/10/19 | Analyzed: 12/11/19 0

Benzene	ND	0.0250	mg/kg							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
p,m-Xylene	ND	0.0500	"							
o-Xylene	ND	0.0250	"							
Total Xylenes	ND	0.0250	"							
Surrogate: 4-Bromochlorobenzene-PID	7.95		"	8.00		99.3	50-150			

## LCS (1950014-BS1)

Prepared: 12/10/19 | Analyzed: 12/11/19 0

Benzene	5.05	0.0250	mg/kg	5.00		101	70-130			
Toluene	5.18	0.0250	"	5.00		104	70-130			
Ethylbenzene	5.08	0.0250	"	5.00		102	70-130			
p,m-Xylene	10.1	0.0500	"	10.0		101	70-130			
o-Xylene	5.05	0.0250	"	5.00		101	70-130			
Total Xylenes	15.1	0.0250	"	15.0		101	70-130			
Surrogate: 4-Bromochlorobenzene-PID	8.10		"	8.00		101	50-150			

## Matrix Spike (1950014-MS1)

Source: P912020-01

Prepared: 12/10/19 | Analyzed: 12/11/19 0

Benzene	5.21	0.0250	mg/kg	5.00	ND	104	54.3-133			
Toluene	5.32	0.0250	"	5.00	ND	106	61.4-130			
Ethylbenzene	5.24	0.0250	"	5.00	ND	105	61.4-133			
p,m-Xylene	10.4	0.0500	"	10.0	ND	104	63.3-131			
o-Xylene	5.21	0.0250	"	5.00	ND	104	63.3-131			
Total Xylenes	15.6	0.0250	"	15.0	ND	104	63.3-131			
Surrogate: 4-Bromochlorobenzene-PID	8.10		"	8.00		101	50-150			

## Matrix Spike Dup (1950014-MSD1)

Source: P912020-01

Prepared: 12/10/19 | Analyzed: 12/11/19 0

Benzene	5.19	0.0250	mg/kg	5.00	ND	104	54.3-133	0.346	20	
Toluene	5.27	0.0250	"	5.00	ND	105	61.4-130	0.954	20	
Ethylbenzene	5.19	0.0250	"	5.00	ND	104	61.4-133	0.997	20	
p,m-Xylene	10.3	0.0500	"	10.0	ND	103	63.3-131	0.843	20	
o-Xylene	5.18	0.0250	"	5.00	ND	104	63.3-131	0.710	20	
Total Xylenes	15.5	0.0250	"	15.0	ND	103	63.3-131	0.799	20	
Surrogate: 4-Bromochlorobenzene-PID	8.02		"	8.00		100	50-150			

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**Nonhalogenated Organics by 8015 - DRO/ORO - Quality Control**

**Envirotech Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 1950011 - DRO Extraction EPA 3570**

**Blank (1950011-BLK1)**

Prepared: 12/10/19 1 Analyzed: 12/11/19 0

Diesel Range Organics (C10-C28)	ND	25.0	mg/kg							
Oil Range Organics (C28-C40)	ND	50.0	"							
Surrogate: n-Nonane	48.2		"	50.0		96.4	50-200			

**LCS (1950011-BSI)**

Prepared & Analyzed: 12/10/19 1

Diesel Range Organics (C10-C28)	506	25.0	mg/kg	500		101	38-132			
Surrogate: n-Nonane	49.6		"	50.0		99.2	50-200			

**Matrix Spike (1950011-MS1)**

Source: P912019-01

Prepared & Analyzed: 12/10/19 1

Diesel Range Organics (C10-C28)	484	25.0	mg/kg	500	ND	96.9	38-132			
Surrogate: n-Nonane	47.0		"	50.0		93.9	50-200			

**Matrix Spike Dup (1950011-MSD1)**

Source: P912019-01

Prepared & Analyzed: 12/10/19 1

Diesel Range Organics (C10-C28)	487	25.0	mg/kg	500	ND	97.4	38-132	0.591	20	
Surrogate: n-Nonane	47.2		"	50.0		94.4	50-200			

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Enduring Resources, LLC 511 16th Street, Suite 700 Denver CO, 80202	Project Name: NE Chaco Com 168H Project Number: 17065-0017 Project Manager: Chad Snell	Reported: 12/12/19 11:33
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**Nonhalogenated Organics by 8015 - GRO - Quality Control**

**Envirotech Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 1950014 - Purge and Trap EPA 5030A**

**Blank (1950014-BLK1)**

Prepared: 12/10/19 | Analyzed: 12/11/19 0

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg							
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>	6.54		"	8.00		81.8	50-150			

**LCS (1950014-BS2)**

Prepared: 12/10/19 | Analyzed: 12/11/19 0

Gasoline Range Organics (C6-C10)	45.3	20.0	mg/kg	50.0	ND	90.7	70-130			
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>	6.46		"	8.00		80.7	50-150			

**Matrix Spike (1950014-MS2)**

Source: P912020-01

Prepared: 12/10/19 | Analyzed: 12/11/19 0

Gasoline Range Organics (C6-C10)	45.9	20.0	mg/kg	50.0	ND	91.8	70-130			
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>	6.62		"	8.00		82.8	50-150			

**Matrix Spike Dup (1950014-MSD2)**

Source: P912020-01

Prepared: 12/10/19 | Analyzed: 12/11/19 0

Gasoline Range Organics (C6-C10)	45.0	20.0	mg/kg	50.0	ND	90.1	70-130	1.94	20	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>	6.64		"	8.00		83.0	50-150			

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Enduring Resources, LLC 511 16th Street, Suite 700 Denver CO, 80202	Project Name: NE Chaco Com 168H Project Number: 17065-0017 Project Manager: Chad Snell	Reported: 12/12/19 11:33
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## Anions by 300.0/9056A - Quality Control

## Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1950009 - Anion Extraction EPA 300.0/9056A</b>										
<b>Blank (1950009-BLK1)</b>										
Chloride	ND	20.0	mg/kg							Prepared: 12/10/19 0 Analyzed: 12/10/19 1
<b>LCS (1950009-BS1)</b>										
Chloride	248	20.0	mg/kg	250		99.2	90-110			Prepared: 12/10/19 0 Analyzed: 12/10/19 1
<b>Matrix Spike (1950009-MS1)</b>										
		<b>Source: P912019-01</b>								Prepared: 12/10/19 0 Analyzed: 12/10/19 1
Chloride	326	20.0	mg/kg	250	62.2	106	80-120			
<b>Matrix Spike Dup (1950009-MSD1)</b>										
		<b>Source: P912019-01</b>								Prepared: 12/10/19 0 Analyzed: 12/10/19 1
Chloride	315	20.0	mg/kg	250	62.2	101	80-120	3.34	20	

## QC Summary Report

## Comment:

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

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Enduring Resources, LLC 511 16th Street, Suite 700 Denver CO, 80202	Project Name: NE Chaco Com 168H Project Number: 17065-0017 Project Manager: Chad Snell	Reported: 12/12/19 11:33
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**Notes and Definitions**

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

RPD Relative Percent Difference

\*\* Methods marked with \*\* are non-accredited methods.

Soil data is reported on an "as received" weight basis, unless reported otherwise.

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Project Information

Chain of Custody

<b>Client:</b> <u>Enduring Resources</u> <b>Project:</b> <u>NE Chaco Com 168th</u> <b>Project Manager:</b> <u>Chad Small</u> <b>Address:</b> <u>200 Energy Court</u> <b>City, State, Zip:</b> <u>Farmington, NM</u> <b>Phone:</b> <u>(505) 444-0586</u> <b>Email:</b> <u>C.Small@enduringresources.com</u> <u>medan@enduringresources.com</u>				<b>Report Attention</b> <b>Report due by:</b> _____ <b>Attention:</b> _____ <b>Address:</b> _____ <b>City, State, Zip:</b> _____ <b>Phone:</b> _____ <b>Email:</b> _____		<b>Lab Use Only</b> <b>Lab WO#</b> <u>P912020</u> <b>Job Number</b> <u>17-005-0017</u>		<b>TAT</b> 1D <input checked="" type="checkbox"/> 3D <input type="checkbox"/>		<b>EPA Program</b> RCRA <input type="checkbox"/> CWA <input type="checkbox"/> SDWA <input type="checkbox"/> State: _____ NM <input type="checkbox"/> CO <input type="checkbox"/> UT <input type="checkbox"/> AZ <input type="checkbox"/> TX <input type="checkbox"/> OK <input type="checkbox"/>						
Time Sampled	Date Sampled	Matrix	No Containers	Sample ID	Lab Number	DRO/DRO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	6010 Total P	Remarks			
10:30	12-10-19	S	1	South wall	1	X	X	X		X						

**Additional Instructions:**

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample, location, date or time of collection is considered fraud and may be grounds for legal action. Sampled by: [Signature] 12-10-19

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6°C on subsequent days.

Relinquished by: (Signature) <u>[Signature]</u>	Date <u>12-10-19</u>	Time <u>12:00pm</u>	Received by: (Signature) <u>[Signature]</u>	Date <u>12/10/19</u>	Time <u>12:00</u>	Received on ice: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N T1 _____ T2 _____ T3 _____ AVG Temp °C <u>4</u>
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other  
 Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.