Page 6

Oil Conservation Division

Incident ID	nAPP2135745913
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Page 1 of 61

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: Dale Woodall Title: Env. Professional Signature: Dale Woodall Date: 1/10/2023 email: dale.woodall@dvn.com Telephone: 575-748-1838 **OCD Only** Received by: Robert Hamlet Date: 4/12/2023 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: <u>Robert Hamlet</u> Date: <u>4/12/2023</u> Printed Name: Robert Hamlet Title: Environmental Specialist - Advanced

	23 10:40:37 AM State of New Mexico				Page 2 o
				Incident ID	nAPP2135745913
Page 4 Oil Conservation Div	Oil Conservation Divisi	on		District RP	
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public health or the environ failed to adequately investig addition, OCD acceptance of and/or regulations.	e required to report and/or file certain release iment. The acceptance of a C-141 report by gate and remediate contamination that pose a of a C-141 report does not relieve the operate oodall	the OCD does a threat to grou or of responsil	not relieve the indwater, surfa	e operator of liability shu ce water, human health liance with any other fea	ould their operations have or the environment. In
Printed Name: Dale Wo Signature: Dale Wo email: dale.woodall@			1/10/2023 one: <u>575-748</u>		

Received by OCD: 1/10/2023 10:40:37 AM Form C-141 State of New Mexico

Oil Conservation Division

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

	Page 3 of 6.
Incident ID	nAPP2135745913
District RP	
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Remediation Plan

Detailed description of proposed remediation technique Scaled sitemap with GPS coordinates showing delineation points \boxtimes Estimated volume of material to be remediated \boxtimes 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. Title: Env. Professional Printed Name: Dale Woodall Signature: Dale Woodall Date: 1/10/2023 email: dale.woodall@dvn.com Telephone: 575-748-1838 **OCD Only** Jocelyn Harimon Received by: Date: 01/10/2023 Approved Approved with Attached Conditions of Approval Denied Deferral Approved Signature: Date:

Page 6

Oil Conservation Division

Incident ID	nAPP2135745913
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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.

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402 E. Wood Avenue Carlsbad, New Mexico 88220 Tel. 432.701.2159 www.ntglobal.com

December 23, 2022

Mike Bratcher District Supervisor New Mexico Oil Conservation Division, District 2 811 S. First Street Artesia, New Mexico 88210

Re: Closure Report Spud Muffin 31 CTB 1 (12.22.2021) Devon Energy Production Company Site Location: Unit N-31-23S-29E (Lat 32.255624°, Long -104.026426°) Eddy County, New Mexico Incident ID: nAPP2135745913

Mr. Bratcher:

On behalf of Devon Energy Production Company (Devon), New Tech Global Environmental, LLC (NTGE) has prepared this letter to document the liner inspection activities for the Spud Muffin 31 CTB 1 (Site). The Site is located in Eddy County approximately 4.9 miles southeast of Loving, New Mexico (Figures 1 and 2).

Background

Based on the initial C-141 obtained from the New Mexico Oil Conservation Division (NMOCD), the release was discovered on December 22, 2021. The release was caused by a leaking pump within the tank battery and a small amount of overspray out of containment. The leaking pump released approximately 68.45 barrels (bbls) of produced water of which 65 bbls was recovered. The initial C-141 form is attached.

Site Characterization

The Site is located within a medium karst area. Based on a review of the New Mexico Office of State Engineers and USGS databases, there is one water well within a 0.5 mile radius of the Site. The nearest identified well is located approximately 0.45 miles southeast of the Site in S6, T24S, R29E. The well has a reported depth to groundwater of 36 feet below ground surface (ft bgs).

Review of USGS topographic map (Figure 2) and National Flood Hazard Layer (NFHL) data identified a significant watercourse within a 0.5 mile of the Site. The Pecos River is located approximately 0.37 miles north of the Site.

A copy of the site characterization information and the associated *Point of Diversion Summary* report for the nearest water well is attached.

Mr. Mike Bratcher December 23, 2022 Page 2 of 3

Regulatory Criteria

In accordance with the NMOCD regulatory criteria established in 19.15.29.12 NMAC, the following criteria are applicable to the Site.

- Benzene: 10 milligrams per kilogram (mg/kg).
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg.
- TPH: 100 mg/kg (GRO + DRO + MRO).
- Chloride: 600 mg/kg.

Liner Inspection

On March 4, 2022, NTGE conducted liner inspection activities to assess the liners integrity within the facility. NTGE personnel conducted a visual inspection of the liner and found the liner to be intact with no integrity issues. A photographic log documenting the condition of the liner at the time of the inspection is attached. Additionally, a copy of the 48-hour advance notification of the liner inspection activities provided to the NMOCD is also attached.

Site Assessment Activities

On March 4, 2022, NTGE conducted site assessment activities to assess the impact present from the overspray caused by the leaking pump. A total of 2 vertical samples (S-1 and S-2) were collected from depths ranging from surface to 2.5ft below ground surface (bgs) and 4 horizontal samples (H-1 through H-4) collected to assess the horizontal extent of impacts.

Upon receipt of laboratory analysis, it was noted that the area of S-1 was impacted by chlorides to a depth of 1.5' above NMOCD standards. All other vertical and horizontal samples were below regulatory limits set forth by the division in Table 1 Closure Criteria.

Remedial Action Activities

On October 15, 2022, NTGE along with Devon initiated excavation activities at the site to address impacts discovered during the site assessment phase of the project. The entire area of concern was excavated to a depth of 2 ft bgs. NTGE field screened the areas after completion of the excavation, noting that no impacts from chlorides appeared to be present. A 48 hour notification was submitted to NMOCD notifying them of a confirmation sampling event to take place on October 24, 2022, A total of 4 confirmation base samples were collected (CS-1 through CS-4) and 4 confirmation sidewalls collected (SW-1 through SW-4) to ensure all impacted materials have been removed from the area.

The confirmation samples were collected from areas representing no greater than 200 square ft and analyzed for TPH (EPA Method 8015 modified), BTEX (EPA Method 8021B), and Chloride (Method SM4500C1-B or 300.0). Analytical results indicated that all impacted soils were removed successfully.

The final excavation extent and confirmation sample locations are shown in figure 4. Analytical results of the confirmation samples are included in Table 2. Following the receipt of analytical results, the area was backfilled and graded to a near natural state.



Mr. Mike Bratcher December 23, 2022 Page 3 of 3

Conclusions

Based on the finding of the liner inspection and required soil samples, no further actions are required at the Site. The final C-141 is attached and Devon formally requests a no further action designation for the release. If you have any questions regarding this report or need additional information, please contact us at 432-701-2159.

Sincerely,

NTG Environmental

Ethan Sessums Project Manager

Attachments:

Initial C-141 Site Characterization Information Tables Figures Photographic Log Lab Reports & COC's NMOCD 48-Hour Advance Notification



NTGE Project No.: 225306

INITIAL C-141

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

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Incident ID	
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Release Notification

Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address	

Location of Release Source

Longitude

	(NAD 83 in decimal degr	rees to 5 decimal places)
Latitude		Longitude

Site Name	Site Type
Date Release Discovered	API# (if applicable)

Unit Letter	Section	Township	Range	County

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)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) 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		

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Incident ID	
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Was this a major release as defined by 19.15.29.7(A) NMAC?	If YES, for what reason(s) does the responsible party consider this a major release?
🗌 Yes 🗌 No	
If YES, was immediate no	otice 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

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:

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: <u>Kendra DeHoyos</u>	Date:
email:	Telephone:
OCD Only	
Received by:	Date: 1/6/2022

Oil Conservation Division

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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?	<u>3</u> 6' (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

Page 3

- Data table of soil contaminant concentration data
- \square 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	23 10:40:37 AM State of New Mexico		Page 12			
		Incident ID	nAPP2135745913			
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public health or the environm failed to adequately investig addition, OCD acceptance of and/or regulations.	required to report and/or file certain release notific nent. The acceptance of a C-141 report by the OCI ate and remediate contamination that pose a threat f a C-141 report does not relieve the operator of res	does not relieve the operator of liabi groundwater, surface water, human	ility should their operations have health or the environment. In			
Printed Name: <u>Dale Wo</u> Signature: <u>Dale Wo</u> email: <u>dale.woodall@c</u>		lephone: <u>575-748-1838</u>				

Received by OCD: 1/10/2023 10:40:37 AM Form C-141 State of New Mexico

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Oil Conservation Division

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

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Incident IDnAPP2135745913District RPFacility IDApplication ID

Remediation 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. _____ Title: Env. Professional Printed Name: Dale Woodall Signature: Dale Woodall Date: 1/10/2023 email: dale.woodall@dvn.com Telephone: 575-748-1838 **OCD Only** Received by: Date: Approved Approved with Attached Conditions of Approval Denied Deferral Approved Signature: Date:

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Oil Conservation Division

Incide	nt ID	nAPP2135745913
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Closure

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NAPP2135745913

Spills In Line	d Containment				
Measurements Of Standing Fluid					
Length (Ft)	115				
Width(Ft)	65				
Depth(in.)	0.75				
Total Capacity without tank displacements (bbls) No. of 500 bbl Tanks In	83.21				
Standing Fluid No. of Other Tanks In Standing Fluid	1				
OD Of Other Tanks In Standing Fluid(feet)					
Total Volume of standing fluid accounting for tank displacement.	68.51				

Spi	II Volume(Bb	ls) Calculator	
In	puts in <mark>blue</mark> , C	Outputs in <mark>red</mark>	
Cor	ntaminated Soil	measurement	
Area (squa	are feet)	Depth(inches)	
23	3	<u>0.063</u>	
Cubic Feet of S	Soil Impacted	<u>1.223</u>	
Barrels of So	il Impacted	0.22	
Soil T	ype	Clay/Sand	
Barrels of Oi 100% Sat	-	<u>0.03</u>	
Saturation	Fluid preser	nt with shovel/backhoe	
Estimated Ba Relea		0.03	
	Free Standing	Fluid Only	
Area (squa	are feet)	Depth(inches)	
<u>0</u>		<u>0.000</u>	
Standin	g fluid	<u>0.000</u>	
Total fluid	ls spilled	<u>0.033</u>	

SITE CHARACTERIZATION INFORMATION

Devon Energy - Spud Muffin 31 CTB 1 Sec 31 T23S R29E Unit N 32.255755°, -104.026245° Eddy County, New Mexico

Site Characterization
The Pecos River is less than 0.5 miles from the site
Medium Karst
NMSEO Groundwater is 36' below surface, 0.45 miles Southeast of the site, 2013 drilled, Section 31
NMSEO Groundwater is 26' below surface, 0.97 miles Southeast of the site, 2013 drilled, Section 31
NMSEO Groundwater is 60' below surface, 1.00 miles Northwest of the site, 2003 drilled, Section 31

RRALs due to insufficient groundwater data -Chlorides 600 mg/kg -TPH GRO+DRO+MRO 100 mg/kg -BTEX 50 mg/kg -Benzene 10 mg/kg

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Devon Energy

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Spud Muffin31 CTB 1

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New Mexico NFHL Data



February 22, 2022



FEMA, Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey,

nmflood.org is made possible through a collaboration with NMDHSEM,





National Water Information System: Mapper

USGS Home Contact USGS Search USGS Heb Inb



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TABLES

Table 1 Devon Energy Spud Muffin 31 CTB 1 (12.22.21) Eddy County, New Mexico

Sample			ТРН	(mg/kg)		Benzene	Toluene	Ethlybenzene	Xylene	Total C	Chloride	
Sample ID	Date	Depth (ft)	DRO	GRO	MRO	Total	(mg/kg)	(mg/kg) (mg/kg)	(mg/kg)	(mg/kg)	BTEX (mg/kg)	(mg/kg)
	3/4/2022	0-1'	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<.300	2,200
S-1	3/4/2022	1-1.5'	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<.300	1,650
	3/4/2022	2-2.5'	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<.300	160
S-2	3/4/2022	0-1'	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<.300	80
H-1	3/4/2022	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<.300	16
H-2	3/4/2022	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<.300	<16.0
H-3	3/4/2022	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<.300	<16.0
H-4	3/4/2022	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<.300	32
Regulato	ry Limit ^A					100 mg/kg	10 mg/kg				50 mg/kg	600 mg/kg

- exceeds regulatory limits

mg/kg - milligram per kilogram

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TPH- total petroleum hydrocarbons

^A – Table 1 - 19.15.29 NMAC



Table 2 **Devon Energy** Spud Muffin 31 CTB 1 (12.22.21) Eddy County, New Mexico

	Table 2 Devon Energy Devo											
	Date	Sample			(mg/kg)		Benzene	Toluene	Ethlybenzene	Xylene	Total BTEX	Chloride
4/12/2 Sample ID		Depth (ft)	DRO	GRO	MRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
SW-1	10/26/2022	N/A	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	<16.0
SW-2	10/26/2022	N/A	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	<16.0
39 SW-3	10/26/2022	N/A	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	64
SW-4	10/26/2022	N/A	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	48
CS-1	10/26/2022	2'	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	<16.0
CS-2	10/26/2022	2'	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	80
CS-3	10/26/2022	2'	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	<16.0
CS-4	10/26/2022	2'	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	16
Regula	tory Limits ^A					100 mg/kg	10 mg/kg				50 mg/kg	600 mg/kg

(-) Not Analyzed

^A – Table 1 - 19.15.29 NMAC

mg/kg - milligram per kilogram

TPH- total petroleum hydrocarbons

ft-feet

exceeds regulatory limits

NTGE Project No. 225189



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FIGURES



Released to Imaging: 4/12/2023 2:39:06 PM



Released to Imaging: 4/12/2023 2:39:06 PM





Released to Imaging: 4/12/2023 2:39:06 PM



Released to Imaging: 4/12/2023 2:39:06 PM

Devon Energy Production Company

		SE S W W
Photograph N	No. 1	SE S 210 300 150 180 210 240 270 300 • • • • • • • • • •
Facility:	Spud Muffin 31 CTB 1	© 222°SW (T) + 32.255812, -104.026359 ±6 m ▲ 891 m
County:	Eddy County, New Mexico	
Description: View of Liner		C2 Nov 2022, 16:18:20
Photograph N	No. 2	S 80 210 SW 240 70 300 NW 1 • • • • • • • • • •
Facility:	Spud Muffin 31 CTB 1	© 261°W (T) • 32.255812, -104.026359 ±6 m ▲ 891 m
County:	Eddy County, New Mexico	
Description: View of Liner		
		D2.Nov 2022,16:18:21
Photograph N	No. 3	W NM N NE 240 270 300 330 0 30 NE • • • • • • • • • •
Facility:	Spud Muffin 31 CTB 1	© 315°NW (T) • 32.255812, -104.026359 ±6 m ▲ 891 m
County:	Eddy County, New Mexico	and the second s
Description: View of Liner		



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Devon Energy Production Company

Photograph No. 4

Facility: Spud Muffin 31 CTB 1

County: Eddy County, New Mexico

Description: View of Liner



Photograph No. 5

- Facility: Spud Muffin 31 CTB 1
- County: Eddy County, New Mexico

Description:

View of Liner



Photograph No. 6

Facility: Spud Muffin 31 CTB 1

County: Eddy County, New Mexico

Description:

View of Liner





Devon Energy Production Company

Photograph No. 7

Facility: Spud Muffin 31 CTB 1

Eddy County, New Mexico County:

Description: View of Liner



Photograph No. 8

- Facility: Spud Muffin 31 CTB 1
- County: Eddy County, New Mexico

Description:

View of Liner



Photograph No. 9

Facility: Spud Muffin 31 CTB 1

County: Eddy County, New Mexico

Description:

View of Liner





Devon Energy Production Company

Photograph No. 10

Facility: Spud Muffin 31 CTB 1

County: Eddy County, New Mexico

Description: View of excavation.



Photograph No. 11

Facility: Spud Muffin 31 CTB 1

County: Eddy County, New Mexico

Description:

View of excavation.



Photograph No. 12

Facility: Spud Muffin 31 CTB 1

County: Eddy County, New Mexico

Description:

View of excavated area adjacent to release area, this area is clean via initial assessment data.





NMOCD 48-HOUR ADVANCE NOTIFICATION

Ethan Sessums

From:	Tyler Kimball
Sent:	Wednesday, December 14, 2022 9:36 AM
То:	Ethan Sessums
Subject:	Fwd: Liner Inspection Notification

Sent from my Verizon, Samsung Galaxy smartphone Get <u>Outlook for Android</u>

From: Tyler Kimball Sent: Tuesday, November 1, 2022 8:58:12 AM To: Kellan Smith <KSmith@ntglobal.com> Subject: FW: Liner Inspection Notification

From: Tyler Kimball
Sent: Friday, October 28, 2022 1:04 PM
To: ocd.enviro@state.nm.us
Cc: Ethan Sessums <ESessums@ntglobal.com>
Subject: Liner Inspection Notification

We will be conducting liner inspection activities on behalf of DEVON at the below referenced times. Wednesday, November 2nd

10:00A.M.

nAPP2222151153	ARCTURUS 18 FED 3H BATTERY	8/9/2022	21060237
11:30A.M.			
nAPP2221328160	Grumpy Cat 15 CTB 2	7/30/2022	21057543
1:30P.M.			
NAPP2220942751	BLONDIE 15 CTB 3	7/27/2022	21057025
2:30P.M.			
nAPP2225529718	Cotton Draw Unit 7 DL CTB	9/11/2022	21076317
4:00P.M.			
nAPP2225931874	Spud Muffin 31 CTB 1	9/15/2022	21074745
Ethan Sessums

From:	Jordan Tyner
Sent:	Wednesday, October 19, 2022 2:52 PM
То:	New Mexico OCD
Cc:	Ethan Sessums
Subject:	Sampling Event

We will be conducting a sampling event on behalf of Devon on October 24, 2022 around 10am

nAPP2135745913	SPUD MUFFIN 31 CTB 1	12/22/2021
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Jordan Tyner Project Scientist NTG Environmental New Mexico 402 E Wood Ave, Carlsbad, NM 88220 M: (903) 309-8358 W: (432) 813-0263 Email: <u>ityner@ntglobal.com</u> <u>http://www.ntgenvironmental.com/</u>



LABORATORY REPORTS AND CHAIN-OF-CUSTODY DOCUMENTS



March 09, 2022

ETHAN SESSUMS NTG ENVIRONMENTAL 701 TRADEWINDS BLVD. SUITE C MIDLAND, TX 79706

RE: SPUD MUFFIN 31 CTB

Enclosed are the results of analyses for samples received by the laboratory on 03/04/22 12:15.

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/ga/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

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. Keine

Celey D. Keene Lab Director/Quality Manager



NTG ENVIRONMENTAL ETHAN SESSUMS 701 TRADEWINDS BLVD. SUITE C MIDLAND TX, 79706 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/09/2022	Sampling Type:	Soil
Project Name:	SPUD MUFFIN 31 CTB	Sampling Condition:	Cool & Intact
Project Number:	225306 (12.22.21)	Sample Received By:	Jodi Henson
Project Location:	DEVON - EDDY CO NM		

Sample ID: S - 1 (0-1') (H220866-01)

BTEX 8021B	mg/	/kg	Analyze	d By: MS\					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
Benzene*	<0.050	0.050	03/08/2022	ND	2.02	101	2.00	0.716	
Toluene*	<0.050	0.050	03/08/2022	ND	2.05	102	2.00	0.264	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	2.06	103	2.00	0.329	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	6.37	106	6.00	0.336	
Total BTEX	<0.300	0.300	03/08/2022	ND					
Surrogate: 4-Bromofluorobenzene (PID	104 9	% 69.9-14	0						
Chloride, SM4500Cl-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2200	16.0	03/08/2022	ND	416	104	400	0.00	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
GRO C6-C10*	<10.0	10.0	03/09/2022	ND	229	114	200	4.14	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	221	110	200	4.87	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					
Surrogate: 1-Chlorooctane	85.4	% 66.9-13	6						
Surrogate: 1-Chlorooctadecane	89.7	% 59.5-14	2						

Cardinal Laboratories

*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



NTG ENVIRONMENTAL ETHAN SESSUMS 701 TRADEWINDS BLVD. SUITE C MIDLAND TX, 79706 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/09/2022	Sampling Type:	Soil
Project Name:	SPUD MUFFIN 31 CTB	Sampling Condition:	Cool & Intact
Project Number:	225306 (12.22.21)	Sample Received By:	Jodi Henson
Project Location:	DEVON - EDDY CO NM		

Sample ID: S - 1 (1-1.5') (H220866-02)

BTEX 8021B	mg,	/kg	Analyze	d By: MS\					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/08/2022	ND	2.02	101	2.00	0.716	
Toluene*	<0.050	0.050	03/08/2022	ND	2.05	102	2.00	0.264	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	2.06	103	2.00	0.329	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	6.37	106	6.00	0.336	
Total BTEX	<0.300	0.300	03/08/2022	ND					
Surrogate: 4-Bromofluorobenzene (PID	106	% 69.9-14	0						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1650	16.0	03/08/2022	ND	416	104	400	0.00	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/09/2022	ND	229	114	200	4.14	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	221	110	200	4.87	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					
Surrogate: 1-Chlorooctane	78.4	% 66.9-13	6						
Surrogate: 1-Chlorooctadecane	83.4	% 59.5-14	2						

Cardinal Laboratories

*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



NTG ENVIRONMENTAL ETHAN SESSUMS 701 TRADEWINDS BLVD. SUITE C MIDLAND TX, 79706 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/09/2022	Sampling Type:	Soil
Project Name:	SPUD MUFFIN 31 CTB	Sampling Condition:	Cool & Intact
Project Number:	225306 (12.22.21)	Sample Received By:	Jodi Henson
Project Location:	DEVON - EDDY CO NM		

Sample ID: S - 1 (2-2.5') (H220866-03)

BTEX 8021B	mg/	/kg	Analyze	d By: MS\					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/08/2022	ND	2.02	101	2.00	0.716	
Toluene*	<0.050	0.050	03/08/2022	ND	2.05	102	2.00	0.264	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	2.06	103	2.00	0.329	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	6.37	106	6.00	0.336	
Total BTEX	<0.300	0.300	03/08/2022	ND					
Surrogate: 4-Bromofluorobenzene (PID	106 9	% 69.9-14	0						
Chloride, SM4500Cl-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	03/08/2022	ND	416	104	400	0.00	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/09/2022	ND	229	114	200	4.14	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	221	110	200	4.87	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					
Surrogate: 1-Chlorooctane	93.8	% 66.9-13	6						
Surrogate: 1-Chlorooctadecane	100 9	% 59.5-14	2						

Cardinal Laboratories

*=Accredited Analyte

Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager



NTG ENVIRONMENTAL ETHAN SESSUMS 701 TRADEWINDS BLVD. SUITE C MIDLAND TX, 79706 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/09/2022	Sampling Type:	Soil
Project Name:	SPUD MUFFIN 31 CTB	Sampling Condition:	Cool & Intact
Project Number:	225306 (12.22.21)	Sample Received By:	Jodi Henson
Project Location:	DEVON - EDDY CO NM		

Sample ID: S - 2 (0-1') (H220866-04)

BTEX 8021B	mg,	/kg	Analyze	d By: MS\					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/08/2022	ND	2.02	101	2.00	0.716	
Toluene*	<0.050	0.050	03/08/2022	ND	2.05	102	2.00	0.264	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	2.06	103	2.00	0.329	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	6.37	106	6.00	0.336	
Total BTEX	<0.300	0.300	03/08/2022	ND					
Surrogate: 4-Bromofluorobenzene (PID	106	% 69.9-14	0						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	03/08/2022	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/09/2022	ND	229	114	200	4.14	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	221	110	200	4.87	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					
Surrogate: 1-Chlorooctane	75.8	% 66.9-13	6						
Surrogate: 1-Chlorooctadecane	79.7	% 59.5-14	2						

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Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager



NTG ENVIRONMENTAL ETHAN SESSUMS 701 TRADEWINDS BLVD. SUITE C MIDLAND TX, 79706 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/09/2022	Sampling Type:	Soil
Project Name:	SPUD MUFFIN 31 CTB	Sampling Condition:	Cool & Intact
Project Number:	225306 (12.22.21)	Sample Received By:	Jodi Henson
Project Location:	DEVON - EDDY CO NM		

Sample ID: H - 1 (H220866-05)

BTEX 8021B	mg/	/kg	Analyze	d By: MS\					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/08/2022	ND	2.02	101	2.00	0.716	
Toluene*	<0.050	0.050	03/08/2022	ND	2.05	102	2.00	0.264	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	2.06	103	2.00	0.329	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	6.37	106	6.00	0.336	
Total BTEX	<0.300	0.300	03/08/2022	ND					
Surrogate: 4-Bromofluorobenzene (PID	106 9	% 69.9-14	0						
Chloride, SM4500Cl-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	03/08/2022	ND	416	104	400	0.00	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/09/2022	ND	229	114	200	4.14	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	221	110	200	4.87	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					
Surrogate: 1-Chlorooctane	78.5	% 66.9-13	6						
Surrogate: 1-Chlorooctadecane	82.4	% 59.5-14	2						

Cardinal Laboratories

*=Accredited Analyte

Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager



NTG ENVIRONMENTAL ETHAN SESSUMS 701 TRADEWINDS BLVD. SUITE C MIDLAND TX, 79706 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/09/2022	Sampling Type:	Soil
Project Name:	SPUD MUFFIN 31 CTB	Sampling Condition:	Cool & Intact
Project Number:	225306 (12.22.21)	Sample Received By:	Jodi Henson
Project Location:	DEVON - EDDY CO NM		

Sample ID: H - 2 (H220866-06)

BTEX 8021B	mg,	/kg	Analyze	d By: MS\					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/08/2022	ND	2.02	101	2.00	0.716	
Toluene*	<0.050	0.050	03/08/2022	ND	2.05	102	2.00	0.264	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	2.06	103	2.00	0.329	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	6.37	106	6.00	0.336	
Total BTEX	<0.300	0.300	03/08/2022	ND					
Surrogate: 4-Bromofluorobenzene (PID	104	% 69.9-14	0						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/08/2022	ND	416	104	400	0.00	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/09/2022	ND	229	114	200	4.14	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	221	110	200	4.87	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					
Surrogate: 1-Chlorooctane	78.3	% 66.9-13	6						
Surrogate: 1-Chlorooctadecane	81.8	% 59.5-14	2						

Cardinal Laboratories

*=Accredited Analyte

Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager



NTG ENVIRONMENTAL ETHAN SESSUMS 701 TRADEWINDS BLVD. SUITE C MIDLAND TX, 79706 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/09/2022	Sampling Type:	Soil
Project Name:	SPUD MUFFIN 31 CTB	Sampling Condition:	Cool & Intact
Project Number:	225306 (12.22.21)	Sample Received By:	Jodi Henson
Project Location:	DEVON - EDDY CO NM		

Sample ID: H - 3 (H220866-07)

BTEX 8021B	mg,	/kg	Analyze	d By: MS\					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/08/2022	ND	2.02	101	2.00	0.716	
Toluene*	<0.050	0.050	03/08/2022	ND	2.05	102	2.00	0.264	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	2.06	103	2.00	0.329	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	6.37	106	6.00	0.336	
Total BTEX	<0.300	0.300	03/08/2022	ND					
Surrogate: 4-Bromofluorobenzene (PID	106	% 69.9-14	0						
Chloride, SM4500Cl-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/08/2022	ND	416	104	400	0.00	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/09/2022	ND	229	114	200	4.14	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	221	110	200	4.87	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					
Surrogate: 1-Chlorooctane	84.8	% 66.9-13	6						
Surrogate: 1-Chlorooctadecane	89.5	% 59.5-14	2						

Cardinal Laboratories

*=Accredited Analyte

Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager



NTG ENVIRONMENTAL ETHAN SESSUMS 701 TRADEWINDS BLVD. SUITE C MIDLAND TX, 79706 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/09/2022	Sampling Type:	Soil
Project Name:	SPUD MUFFIN 31 CTB	Sampling Condition:	Cool & Intact
Project Number:	225306 (12.22.21)	Sample Received By:	Jodi Henson
Project Location:	DEVON - EDDY CO NM		

Sample ID: H - 4 (H220866-08)

BTEX 8021B	mg,	/kg	Analyze	d By: MS\					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/08/2022	ND	2.02	101	2.00	0.716	
Toluene*	<0.050	0.050	03/08/2022	ND	2.05	102	2.00	0.264	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	2.06	103	2.00	0.329	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	6.37	106	6.00	0.336	
Total BTEX	<0.300	0.300	03/08/2022	ND					
Surrogate: 4-Bromofluorobenzene (PID	106	% 69.9-14	0						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	03/08/2022	ND	416	104	400	3.77	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/09/2022	ND	229	114	200	4.14	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	221	110	200	4.87	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					
Surrogate: 1-Chlorooctane	85.8	% 66.9-13	6						
Surrogate: 1-Chlorooctadecane	90.5	% 59.5-14	2						

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
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

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager

Chain of Custody

Page 11 of 11



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October 26, 2022

ETHAN SESSUMS NTG ENVIRONMENTAL 701 TRADEWINDS BLVD. SUITE C MIDLAND, TX 79706

RE: SPUD MUFFIN

Enclosed are the results of analyses for samples received by the laboratory on 10/24/22 12:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. 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/ga/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

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. Keine

Celey D. Keene Lab Director/Quality Manager



		NTG ENVIRONMENTAL ETHAN SESSUMS 701 TRADEWINDS BLVD. S MIDLAND TX, 79706 Fax To:	SUITE C	
Received:	10/24/2022		Sampling Date:	10/24/2022
Reported:	10/26/2022		Sampling Type:	Soil
Project Name:	SPUD MUFFIN		Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN		Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM			

Sample ID: SW - 1 (H224983-01)

BTEX 8021B	mg/	/kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
Benzene*	<0.050	0.050	10/25/2022	ND	1.98	99.1	2.00	3.22	
Toluene*	<0.050	0.050	10/25/2022	ND	2.15	108	2.00	1.33	
Ethylbenzene*	<0.050	0.050	10/25/2022	ND	2.03	101	2.00	1.29	
Total Xylenes*	<0.150	0.150	10/25/2022	ND	6.18	103	6.00	2.14	
Total BTEX	<0.300	0.300	10/25/2022	ND					
Surrogate: 4-Bromofluorobenzene (PID	99.5	% 69.9-14	0						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2022	ND	416	104	400	3.92	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/25/2022	ND	204	102	200	0.189	
DRO >C10-C28*	<10.0	10.0	10/25/2022	ND	190	94.8	200	0.585	
EXT DRO >C28-C36	<10.0	10.0	10/25/2022	ND					
Surrogate: 1-Chlorooctane	126	% 45.3-16	1						
Surrogate: 1-Chlorooctadecane	139	% 46.3-17	8						

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



		NTG ENVIRONMENTAL ETHAN SESSUMS 701 TRADEWINDS BLVD. S MIDLAND TX, 79706 Fax To:	UITE C	
Received:	10/24/2022		Sampling Date:	10/24/2022
Reported:	10/26/2022		Sampling Type:	Soil
Project Name:	SPUD MUFFIN		Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN		Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM			

Sample ID: SW - 2 (H224983-02)

BTEX 8021B	mg/	′kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/25/2022	ND	1.98	99.1	2.00	3.22	
Toluene*	<0.050	0.050	10/25/2022	ND	2.15	108	2.00	1.33	
Ethylbenzene*	<0.050	0.050	10/25/2022	ND	2.03	101	2.00	1.29	
Total Xylenes*	<0.150	0.150	10/25/2022	ND	6.18	103	6.00	2.14	
Total BTEX	<0.300	0.300	10/25/2022	ND					
Surrogate: 4-Bromofluorobenzene (PID	99.5	% 69.9-14	0						
Chloride, SM4500Cl-B	mg/	′kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2022	ND	416	104	400	3.92	
TPH 8015M	mg/	′kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/25/2022	ND	204	102	200	0.189	
DRO >C10-C28*	<10.0	10.0	10/25/2022	ND	190	94.8	200	0.585	
EXT DRO >C28-C36	<10.0	10.0	10/25/2022	ND					
Surrogate: 1-Chlorooctane	117 9	45.3-16	1						
Surrogate: 1-Chlorooctadecane	126	46.3-17	8						

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



		NTG ENVIRONMENTAL ETHAN SESSUMS 701 TRADEWINDS BLVD. S MIDLAND TX, 79706 Fax To:	UITE C	
Received:	10/24/2022		Sampling Date:	10/24/2022
Reported:	10/26/2022		Sampling Type:	Soil
Project Name:	SPUD MUFFIN		Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN		Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM			

Sample ID: SW - 3 (H224983-03)

BTEX 8021B	mg/	/kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/25/2022	ND	1.98	99.1	2.00	3.22	
Toluene*	<0.050	0.050	10/25/2022	ND	2.15	108	2.00	1.33	
Ethylbenzene*	<0.050	0.050	10/25/2022	ND	2.03	101	2.00	1.29	
Total Xylenes*	<0.150	0.150	10/25/2022	ND	6.18	103	6.00	2.14	
Total BTEX	<0.300	0.300	10/25/2022	ND					
Surrogate: 4-Bromofluorobenzene (PID	98.6	% 69.9-14	0						
Chloride, SM4500Cl-B	mg/	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	10/25/2022	ND	416	104	400	3.92	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/24/2022	ND	204	102	200	1.22	
DRO >C10-C28*	<10.0	10.0	10/24/2022	ND	207	104	200	0.483	
EXT DRO >C28-C36	<10.0	10.0	10/24/2022	ND					
Surrogate: 1-Chlorooctane	108 9	% 45.3-16	1						
Surrogate: 1-Chlorooctadecane	116 9	% 46.3-17	8						

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



		NTG ENVIRONMENTAL ETHAN SESSUMS 701 TRADEWINDS BLVD. S MIDLAND TX, 79706 Fax To:	UITE C	
Received:	10/24/2022		Sampling Date:	10/24/2022
Reported:	10/26/2022		Sampling Type:	Soil
Project Name:	SPUD MUFFIN		Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN		Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM			

Sample ID: SW - 4 (H224983-04)

BTEX 8021B	mg/	′kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/25/2022	ND	1.98	99.1	2.00	3.22	
Toluene*	<0.050	0.050	10/25/2022	ND	2.15	108	2.00	1.33	
Ethylbenzene*	<0.050	0.050	10/25/2022	ND	2.03	101	2.00	1.29	
Total Xylenes*	<0.150	0.150	10/25/2022	ND	6.18	103	6.00	2.14	
Total BTEX	<0.300	0.300	10/25/2022	ND					
Surrogate: 4-Bromofluorobenzene (PID	98.1	% 69.9-14	0						
Chloride, SM4500Cl-B	mg/	′kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/25/2022	ND	416	104	400	3.92	
TPH 8015M	mg/	′kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/24/2022	ND	204	102	200	1.22	
DRO >C10-C28*	<10.0	10.0	10/24/2022	ND	207	104	200	0.483	
EXT DRO >C28-C36	<10.0	10.0	10/24/2022	ND					
Surrogate: 1-Chlorooctane	109 9	% 45.3-16	1						
Surrogate: 1-Chlorooctadecane	116 9	46.3-17	8						

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Celey D. Keene, Lab Director/Quality Manager



		NTG ENVIRONMENTAL ETHAN SESSUMS 701 TRADEWINDS BLVD. S MIDLAND TX, 79706 Fax To:	UITE C	
Received:	10/24/2022		Sampling Date:	10/24/2022
Reported:	10/26/2022		Sampling Type:	Soil
Project Name:	SPUD MUFFIN		Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN		Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM			

Sample ID: CS - 1 (H224983-05)

BTEX 8021B	mg/	'kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/25/2022	ND	1.98	99.1	2.00	3.22	
Toluene*	<0.050	0.050	10/25/2022	ND	2.15	108	2.00	1.33	
Ethylbenzene*	<0.050	0.050	10/25/2022	ND	2.03	101	2.00	1.29	
Total Xylenes*	<0.150	0.150	10/25/2022	ND	6.18	103	6.00	2.14	
Total BTEX	<0.300	0.300	10/25/2022	ND					
Surrogate: 4-Bromofluorobenzene (PID	97.1	% 69.9-14	0						
Chloride, SM4500Cl-B	mg/	'kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2022	ND	416	104	400	3.92	
TPH 8015M	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/24/2022	ND	204	102	200	1.22	
DRO >C10-C28*	<10.0	10.0	10/24/2022	ND	207	104	200	0.483	
EXT DRO >C28-C36	<10.0	10.0	10/24/2022	ND					
Surrogate: 1-Chlorooctane	110 9	45.3-16	1						
Surrogate: 1-Chlorooctadecane	118 9	46.3-17	8						

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Celey D. Keene, Lab Director/Quality Manager



		NTG ENVIRONMENTAL ETHAN SESSUMS 701 TRADEWINDS BLVD. S MIDLAND TX, 79706 Fax To:	UITE C	
Received:	10/24/2022		Sampling Date:	10/24/2022
Reported:	10/26/2022		Sampling Type:	Soil
Project Name:	SPUD MUFFIN		Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN		Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM			

Sample ID: CS - 2 (H224983-06)

BTEX 8021B	mg/	/kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/25/2022	ND	1.98	99.1	2.00	3.22	
Toluene*	<0.050	0.050	10/25/2022	ND	2.15	108	2.00	1.33	
Ethylbenzene*	<0.050	0.050	10/25/2022	ND	2.03	101	2.00	1.29	
Total Xylenes*	<0.150	0.150	10/25/2022	ND	6.18	103	6.00	2.14	
Total BTEX	<0.300	0.300	10/25/2022	ND					
Surrogate: 4-Bromofluorobenzene (PID	97.8	% 69.9-14	0						
Chloride, SM4500Cl-B	mg/	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	10/25/2022	ND	416	104	400	3.92	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/24/2022	ND	204	102	200	1.22	
DRO >C10-C28*	<10.0	10.0	10/24/2022	ND	207	104	200	0.483	
EXT DRO >C28-C36	<10.0	10.0	10/24/2022	ND					
Surrogate: 1-Chlorooctane	112 9	45.3-16	1						
Surrogate: 1-Chlorooctadecane	120 9	% 46.3-17	8						

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



		NTG ENVIRONMENTAL ETHAN SESSUMS 701 TRADEWINDS BLVD. S MIDLAND TX, 79706 Fax To:	UITE C	
Received:	10/24/2022		Sampling Date:	10/24/2022
Reported:	10/26/2022		Sampling Type:	Soil
Project Name:	SPUD MUFFIN		Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN		Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM			

Sample ID: CS - 3 (H224983-07)

BTEX 8021B	mg/	′kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/25/2022	ND	1.98	99.1	2.00	3.22	
Toluene*	<0.050	0.050	10/25/2022	ND	2.15	108	2.00	1.33	
Ethylbenzene*	<0.050	0.050	10/25/2022	ND	2.03	101	2.00	1.29	
Total Xylenes*	<0.150	0.150	10/25/2022	ND	6.18	103	6.00	2.14	
Total BTEX	<0.300	0.300	10/25/2022	ND					
Surrogate: 4-Bromofluorobenzene (PID	98.6	% 69.9-14	0						
Chloride, SM4500Cl-B	mg/	′kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2022	ND	416	104	400	3.92	
TPH 8015M	mg/	′kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/24/2022	ND	204	102	200	1.22	
DRO >C10-C28*	<10.0	10.0	10/24/2022	ND	207	104	200	0.483	
EXT DRO >C28-C36	<10.0	10.0	10/24/2022	ND					
Surrogate: 1-Chlorooctane	109 9	45.3-16	1						
Surrogate: 1-Chlorooctadecane	117 9	46.3-17	8						

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



		NTG ENVIRONMENTAL ETHAN SESSUMS 701 TRADEWINDS BLVD. S MIDLAND TX, 79706 Fax To:	UITE C	
Received:	10/24/2022		Sampling Date:	10/24/2022
Reported:	10/26/2022		Sampling Type:	Soil
Project Name:	SPUD MUFFIN		Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN		Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM			

Sample ID: CS - 4 (H224983-08)

BTEX 8021B	mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/25/2022	ND	1.98	99.1	2.00	3.22	
Toluene*	<0.050	0.050	10/25/2022	ND	2.15	108	2.00	1.33	
Ethylbenzene*	<0.050	0.050	10/25/2022	ND	2.03	101	2.00	1.29	
Total Xylenes*	<0.150	0.150	10/25/2022	ND	6.18	103	6.00	2.14	
Total BTEX	<0.300	0.300	10/25/2022	ND					
Surrogate: 4-Bromofluorobenzene (PID	98.8	% 69.9-14	0						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/25/2022	ND	416	104	400	3.92	
TPH 8015M	mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/25/2022	ND	204	102	200	1.22	
DRO >C10-C28*	<10.0	10.0	10/25/2022	ND	207	104	200	0.483	
EXT DRO >C28-C36	<10.0	10.0	10/25/2022	ND					
Surrogate: 1-Chlorooctane	110 9	45.3-16	1						
Surrogate: 1-Chlorooctadecane	120 \$	46.3-17	8						

Cardinal Laboratories

*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.						
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.						
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

Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Received by OCD: 1/10/2023 10:40:37 AM

Released to Imaging: 4/12/2023 2:39:06 PM

PORM-000 N 3.3 0//10/22	Delivered By: (Circle One) Sampler - UPS - Bus - Other:	service. In no event shall Cardinal be liable for incodemain or over atfiliates or successors arising out of or related to the performance Relinquished By: Relinquished By:	PLEASE NOTE: Liability and Damages: Cardinal's liability and client's exclusive namody for any client analyses. All claims including those for negligence and any other cause whatseverer shall be deen analyses. All claims including those for negligence and any other cause whatseverer shall be deen analyses. All claims including those for negligence and any other cause whatseverer shall be deen analyses. All claims including those for negligence and any other cause whatseverer shall be deen analyses. All claims including those for negligence and any other cause whatseverer shall be deen analyses. All claims including those for negligence and any other cause whatseverer shall be deen analyses.	& 7 E	0-F01 C		iame: Spy chyluft ocation: Edd y Name: Tylur &	Company Name: N 165 Project Manager: Ethan Se Address: 402 E Wood A City: Carsbad Phone #: 254266-5456	- 0	Labora
the cardinal cannot accept verbal changes. Please email changes w construction	Tim Observe Correcte	Received By:	arm aneling whether based in contract or tort, shall be limited to the amount paid by the client for the new analysed unless made in writing and received by Cardinal within 30 days after completion of the applicable new valved unless made in writing and received by Cardinal within Solary to the state and the applicable out limitation, business interruptions, loss of use, or loss of profits incurred by client, its subaidianties, out limitation, business interruptions, loss of use, or loss of profits incurred by client, its subaidianties,			C CONTAINERS GROUNDWATE WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER : ACID/BASE: ICE / COOL ACID/BASE: ICE / COOL ACID/BASE: ACI	Project Owner: Prin Control Control Control Phone #: Control Phone #: Phone #: Pho	Shums State: NM Zip: 88220 Fax #:	101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476 BILL TO BILL TO	ratories
	Bacteria (only) Sample Condition Cool Infact Observed Temp. °C Ves Yes Nc No Corrected Temp. °C Nc No Corrected Temp. °C	nail address:	add'l Phone #:						SIS REQUEST	

Page 60 of 61

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:	OGRID:
DEVON ENERGY PRODUCTION COMPANY, LP	6137
333 West Sheridan Ave.	Action Number:
Oklahoma City, OK 73102	174563
	Action Type:
	[C-141] Release Corrective Action (C-141)

CONDITIONS

Created By Condition

We have received your closure report and final C-141 for Incident #NAPP2135745913 SPUD MUFFIN 31 CTB 1, thank you. This closure is approved. 4/12/2023 rhamlet

CONDITIONS

Action 174563

Condition Date