



Remediation Summary and Closure Request

June 26, 2023

**State E 10 Strawn Tank Battery
Crude Oil Release
Incident #: nOY1724945103 (1RP-4802)**

Prepared For:

Penroc Oil Corporation
1515 Calle Sur, Suite 174
Hobbs, New Mexico 88240

Prepared By:

Crain Environmental
2925 East 17th Street
Odessa, Texas 79761

Cynthia K. Crain, P.G.

State E 10 Strawn Tank Battery
Crude Oil Release
Remediation Summary and Closure Request

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1.0 Introduction

Crain Environmental (CE), on behalf of Penroc Oil Corporation (Penroc), has prepared this *Remediation Summary and Closure Request* for the crude oil release at State E 10 Strawn Tank Battery (Site), located approximately 7.7 miles southwest of Eunice, in Lea County, New Mexico. The global positioning system (GPS) coordinates for the Release Site are 32.385930, -103.285105. The property surface rights are owned by the State of New Mexico. The location of the Release Site is depicted on Figure 1.

2.0 Background

On August 23, 2017, a crude oil release was discovered at the State E 10 Strawn Tank Battery. On September 1, 2017, Penroc received email notification from the New Mexico Oil Conservation Division (NMOCD) that ownership of the Site was transferred from Conoco Phillips to Penroc on July 1, 2017, and an initial Release Notification and Corrective Action Form (C-141) should be submitted to the NMOCD and New Mexico State Land Office (NMSLO) within 15 days.

An Initial Release Notification Report (C-141) was submitted to the NMOCD and NMSLO on September 5, 2017, and Incident # nOY1724944823 (1RP-4802) was assigned. The C-141 reported that 10 barrels (bbls) of oil were released from a hole in the bottom of a 500 bbl storage tank. On August 23, 2017, 5 bbls of oil were recovered by vacuum truck and transferred to another storage tank at the Site.

On November 8, 2017, Penroc submitted a Characterization Workplan (Workplan) to the NMOCD and the NMSLO. The Workplan was rejected by the NMOCD on December 8, 2017, with a request to review the size of the release area. A revised Workplan was submitted to the NMOCD and NMSLO on January 17, 2018. As rain occurred before and after the release, it was estimated that a surface area of 1,200 square feet (2 feet wide and 600 feet long) was affected. The Workplan was approved by the NMOCD and the NMSLO on January 29, 2018, with the following conditions:

1. In addition to the 4 proposed sample locations on the lease road, at least 1 sample location must be established in the vicinity of the tanks, where the release originated. Please be advised that additional sample locations probably will be necessary to fully characterize the release.
2. Permissible levels for horizontal and vertical delineation is 600 mg/kg.
3. Each sample location must demonstrate permissible levels of BTEX, TPH extended, and chlorides for at least 2 depths: depth obtained and depth maintained at least 5 ft. further.
4. All laboratory analyses should have accompanying field data.
Like approval from NMSLO required. Mark Naranjo is the correspondent in the interim.

The release point and the surface extent of the crude oil release are depicted on Figure 2. Appendix A provides correspondence from the NMOCD and NMSLO. The initial and final C-141 is provided in Appendix B.



3.0 NMOCD Closure Criteria

Cleanup standards for crude oil and produced water spills are provided in 19.15.29 NMAC. The cleanup standards (described in the rule as "Closure Criteria") are based primarily on depth to groundwater but are also based on other criteria.

The NMOCD requires that soil concentrations from surface to a depth of 4 feet bgs must meet the most stringent Closure Criteria regardless of depth to groundwater. As the maximum depth of samples collected during investigation and remediation was 4 feet bgs, the most stringent Closure Criteria will be applicable to the Site, even though depth to groundwater is estimated to be greater than 100 feet bgs. A summary of the Closure Criteria is provided in the table below and in Table 1.

NMOCD Closure Criteria

Constituent of Concern		Closure Criteria Based on Depth to Groundwater (mg/kg)		
		≤ 50 feet bgs	51 feet to 100 feet bgs	> 100 feet bgs
Chloride (EPA 300)		600	10,000	20,000
TPH (EPA 8015M)	GRO + DRO + MRO	100	2,500	2,500
	GRO + DRO	NA	1,000	1,000
Total BTEX (EPA 8021 or 8260)		50	50	50
Benzene (EPA 8021 or 8260)		10	10	10

Notes: NA = not applicable
 bgs = below ground surface
 mg/kg = milligrams per kilogram
 GRO = gasoline range organics
 DRO = diesel range organics
 MRO = motor oil range organics
 TPH = total petroleum hydrocarbons
 BTEX = benzene, toluene, ethylbenzene, and total xylenes
 Green highlighted cells denote applicable Closure Criteria.

4.0 Investigation Activities

On November 9, 2022, a backhoe was used to excavate four test holes (SP-1 through SP-4) along the release path, at depths ranging from 3 (SP-4) to 4 feet (') bgs (SP-1 through SP-3). Soil samples were placed in clean glass sample jars, properly labeled, immediately placed on ice and hand delivered to Cardinal Laboratories (Cardinal) in Hobbs, New Mexico under proper chain-of-custody control.

Soil samples from surface (0-6"), 1' and 2' bgs in each test hole were analyzed for total petroleum hydrocarbons (TPH) by Environmental Protection Agency (EPA) SW-846 Method 8015 Modified, for benzene, toluene, ethylbenzene and xylenes (collectively referred to as BTEX) by EPA SW-846 Method 8021B, and for chlorides by EPA Method SM-4500Cl-B. Soil samples collected from depths of 3' and 4' bgs were analyzed for TPH and/or chlorides as necessary to determine vertical delineation.

Table 1 provides a summary of the laboratory results, and sample locations with TPH, BTEX, and chloride concentrations are provided on Figure 2. The laboratory report and chain-of-custody documentation is provided in Appendix C. Photographs of the investigation are provided in Appendix D.



Referring to Table 1, concentrations of BTEX were reported below the test method detection limits and/or Closure Criteria in all samples. Concentrations of TPH exceeded the Closure Criteria at sample points SP-1 at depths of 0-6" (30,200 mg/kg), 1' bgs (1,493 mg/kg), 2' bgs (985 mg/kg), and 3' bgs (429.0 mg/kg), and at sample points SP-2 at depths of 0-6" (1,555 mg/kg), and 2' bgs (535 mg/kg). All other samples reported TPH concentrations below the Closure Criteria. Chloride concentrations exceeded the Closure Criteria at sample point SP-1 at depths of 0-6" (864 mg/kg) and 1' bgs (1,680 mg/kg). All other samples reported chloride concentrations below the Closure Criteria.

5.0 Remediation Activities

From May 5 to May 12, 2023, Elite Environmental Services, LLC (Elite), conducted treatment of the affected soil located south of the Tank Battery and heading east along the south part of the lease road. To promote porosity of the soil, the soil was tilled to a depth of 14 inches and a reagent called Bio-Regen SA1000 was applied to the soil. The Bio-Regen SA 1000 product is manufactured by 3Tier Technologies. The reagent is an advanced treatment product that combines two Polyelectrolyte Enhanced Organic Bio-Polymers (PEB) with bio-available calcium. PEB naturally binds, adsorbs, and coordinates sodium cations and chlorine anions. Any sodium/chloride residue creates a new mineral formation resulting in sodium, chloride, cation and anion conversion into a physically and mechanically bound status, thus eliminating salt toxicity and resulting in desalination and chloride/salt toxicity reduction/elimination.

On May 14, 2023, Elite collected four composite samples of the treated soil from depths of 0-12" and 3.5' bgs at sample point SP-1 (1A and 2A, respectively), and from depths of 0-12" and 2.5' bgs at sample point SP-2 (3A and 4A, respectively). All soil samples were placed in laboratory prepared containers, properly labeled, immediately placed on ice, and hand delivered to Cardinal for analysis of TPH, BTEX, and chlorides. Table 1 provides a summary of the laboratory results, and sample locations with concentrations are provided on Figure 2. The laboratory report and chain-of-custody documentation is provided in Appendix C. Referring to Table 1, all concentrations of TPH, BTEX, and chlorides were reported below the Closure Criteria.

On June 5, 2023, Elite collected additional composite samples with a hand auger from sample point SP-1 at depths of 2' and 3' bgs, and from sample point SP-2 at a depth of 2' bgs. Additionally, six five-point composite samples (SW-1 through SW-6) were collected around the perimeter of the treated area, each sample from depths of 0 to 12" bgs. All soil samples were placed in laboratory prepared containers, properly labeled, immediately placed on ice, and hand delivered to Cardinal for analysis of TPH, BTEX, and chlorides.

Table 1 provides a summary of the laboratory results, and sample locations with concentrations are provided on Figure 2. The laboratory report and chain-of-custody documentation is provided in Appendix C. Photographic documentation is provided in Appendix D. Referring to Table 1, final concentrations of TPH, BTEX, and chlorides were reported below the Closure Criteria in all samples.

6.0 Laboratory Analytical Data Quality Assurance/Quality Control Results

Data in the Cardinal laboratory reports dated November 22, 2022, May 19, 2023, and June 7, 2023, was reviewed to ensure that reported analytical results met data quality objectives. It was determined by quality control data associated with analytical results that reported concentrations of target analytes are defensible and that measurement data reliability is within the expected limits of sampling and analytical error. All analytical results are usable for characterization of soil at the Site. The laboratory analytical results are provided as Appendix C.



7.0 Request for Closure

From May 5, 2023, through May 12, 2023, all affected soil located south of the State E 10 Strawn Tank Battery and east of the Site along the south portion of the lease road was treated until in situ soil concentrations of TPH, BTEX, and chlorides were reported below the NMOCD Closure Criteria.

Penroc respectfully requests that Closure be approved for Incident No nOY1724945103 (1RP-4802).

8.0 Distribution Via Email

Copy 1: New Mexico Oil Conservation Division Fee Portal

Copy 2: Mike Bratcher
Mike.Bratcher@enmrd.nm.gov

Copy 3: New Mexico State Land Office
spills@slo.state.nm.us



TABLE

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
PENROC OIL CORPORATION
STATE E 10 STRAWN TANK BATTERY

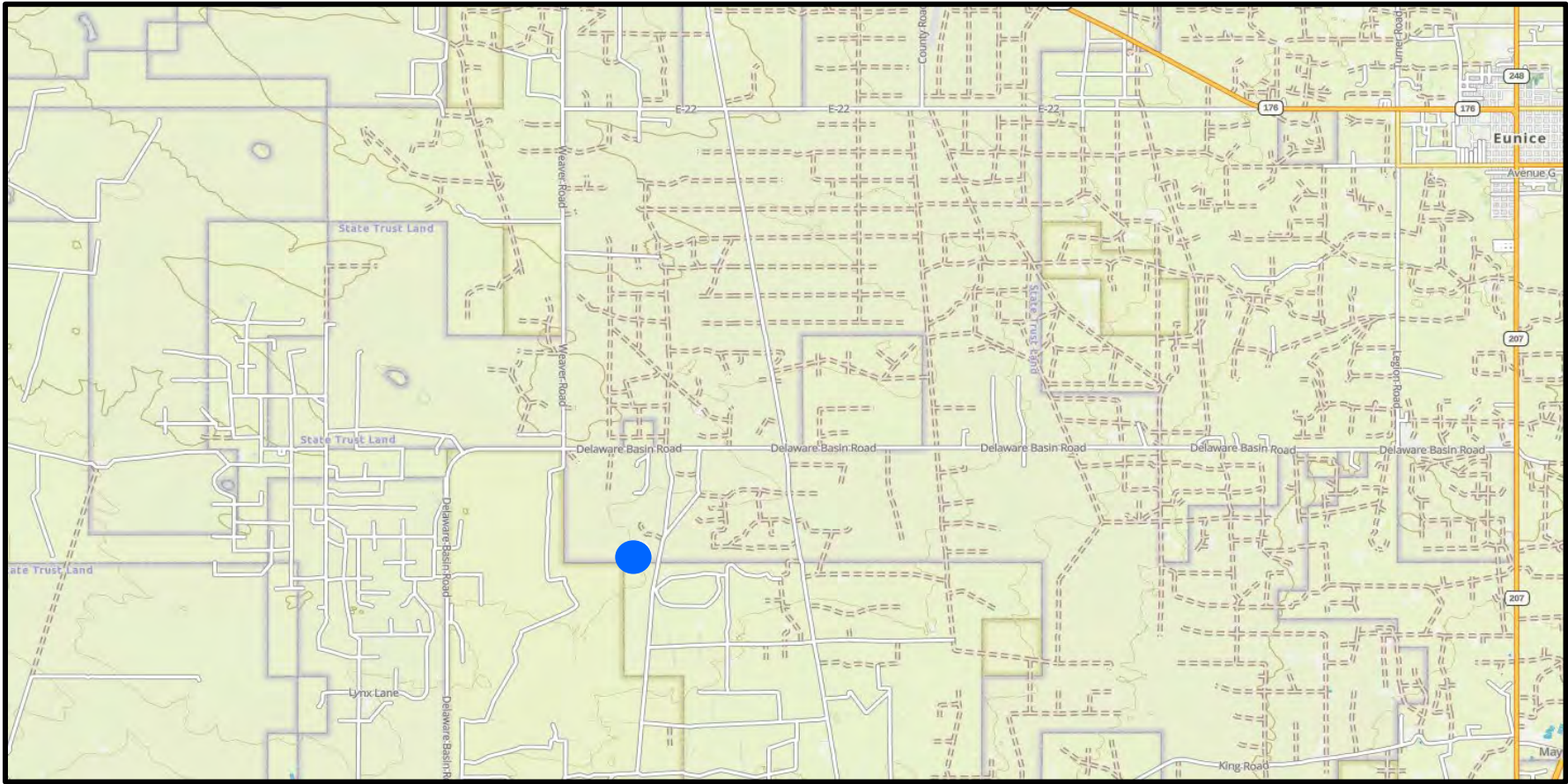
Sample ID	Sample Date	Sample Depth	Soil Status	TPH (GRO)	TPH (DRO)	TPH (MRO)	Total TPH	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	Chloride
				milligrams per kilogram (mg/kg)									
NMOCD Closure Criteria (Surface to 4' bgs)				-	-	-	100	10	-	-	-	50	600
CONFIRMATION BOTTOM SAMPLES													
SP-1	11/09/22	0-6"	<i>Treated</i>	<50.0	24,000	6,200	30,200	<0.050	<0.050	<0.050	<0.150	<0.300	864
1 A	05/14/23	0-12"	<i>Treated</i>	<10.0	50	<10.0	50	<0.050	<0.050	<0.050	<0.150	<0.300	16.0
	11/09/22	1'	<i>Treated</i>	<50.0	1,240	253	1,493	<0.050	<0.050	<0.050	<0.150	<0.300	1,680
	11/09/22	2'	<i>Treated</i>	<50.0	830	155	985	<0.050	<0.050	<0.050	<0.150	<0.300	560
	06/05/23	2'	<i>Treated</i>	<10.0	<10.0	<10.0	<10.0	--	--	--	--	--	--
	11/09/22	3'	<i>Treated</i>	12.2	389	27.8	429.0	--	--	--	--	--	304
	06/05/23	3'	In Situ	<10.0	<10.0	<10.0	<10.0	--	--	--	--	--	--
2 A	05/14/23	3.5'	In Situ	<10.0	54	<10.0	54	<0.050	<0.050	<0.050	<0.150	<0.300	16.0
	11/09/22	4'	In Situ	<10.0	84.6	<10.0	84.6	--	--	--	--	--	240
SP-2	11/09/22	0-6"	<i>Treated</i>	<10.0	1,190	365	1,555	<0.050	<0.050	<0.050	<0.150	<0.300	64.0
3 A	05/14/23	0-12"	<i>Treated</i>	<10.0	50	<10.0	50	<0.050	<0.050	<0.050	<0.150	<0.300	32.0
	11/09/22	1'	<i>Treated</i>	<10.0	21.8	3.7	25.5	<0.050	<0.050	<0.050	<0.150	<0.300	48.0
	11/09/22	2'	<i>Treated</i>	<10.0	423	112	535	<0.050	<0.050	<0.050	<0.150	<0.300	16.0
	06/05/23	2'	In Situ	<10.0	<10.0	<10.0	<10.0	--	--	--	--	--	--
4 A	05/14/23	2.5'	In Situ	<10.0	68.7	<10.0	68.7	<0.050	<0.050	<0.050	<0.150	<0.300	32.0
	11/09/22	3'	In Situ	<10.0	<10.0	<10.0	<10.0	--	--	--	--	--	48.0
	11/09/22	4'	In Situ	<10.0	<10.0	<10.0	<10.0	--	--	--	--	--	240
SP-3	11/09/22	0-6"	In Situ	<10.0	18.8	18.3	37.1	<0.050	<0.050	<0.050	<0.150	<0.300	16.0
	11/09/22	1'	In Situ	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	80.0
	11/09/22	2'	In Situ	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	48.0
	11/09/22	3'	In Situ	--	--	--	--	--	--	--	--	--	80.0
	11/09/22	4'	In Situ	--	--	--	--	--	--	--	--	--	528
SP-4	11/09/22	0-6"	In Situ	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	64.0
	11/09/22	1'	In Situ	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	48.0
	11/09/22	2'	In Situ	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	16.0
	11/09/22	3'	In Situ	--	--	--	--	--	--	--	--	--	32.0
CONFIRMATION SIDEWALL SAMPLES													
SW-1	06/05/23	0-12"	In Situ	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	32.0
SW-2	06/05/23	0-12"	In Situ	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	32.0
SW-3	06/05/23	0-12"	In Situ	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	<16.0
SW-4	06/05/23	0-12"	In Situ	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	<16.0
SW-5	06/05/23	0-12"	In Situ	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	32.0
SW-6	06/05/23	0-12"	In Situ	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	16.0




Notes:

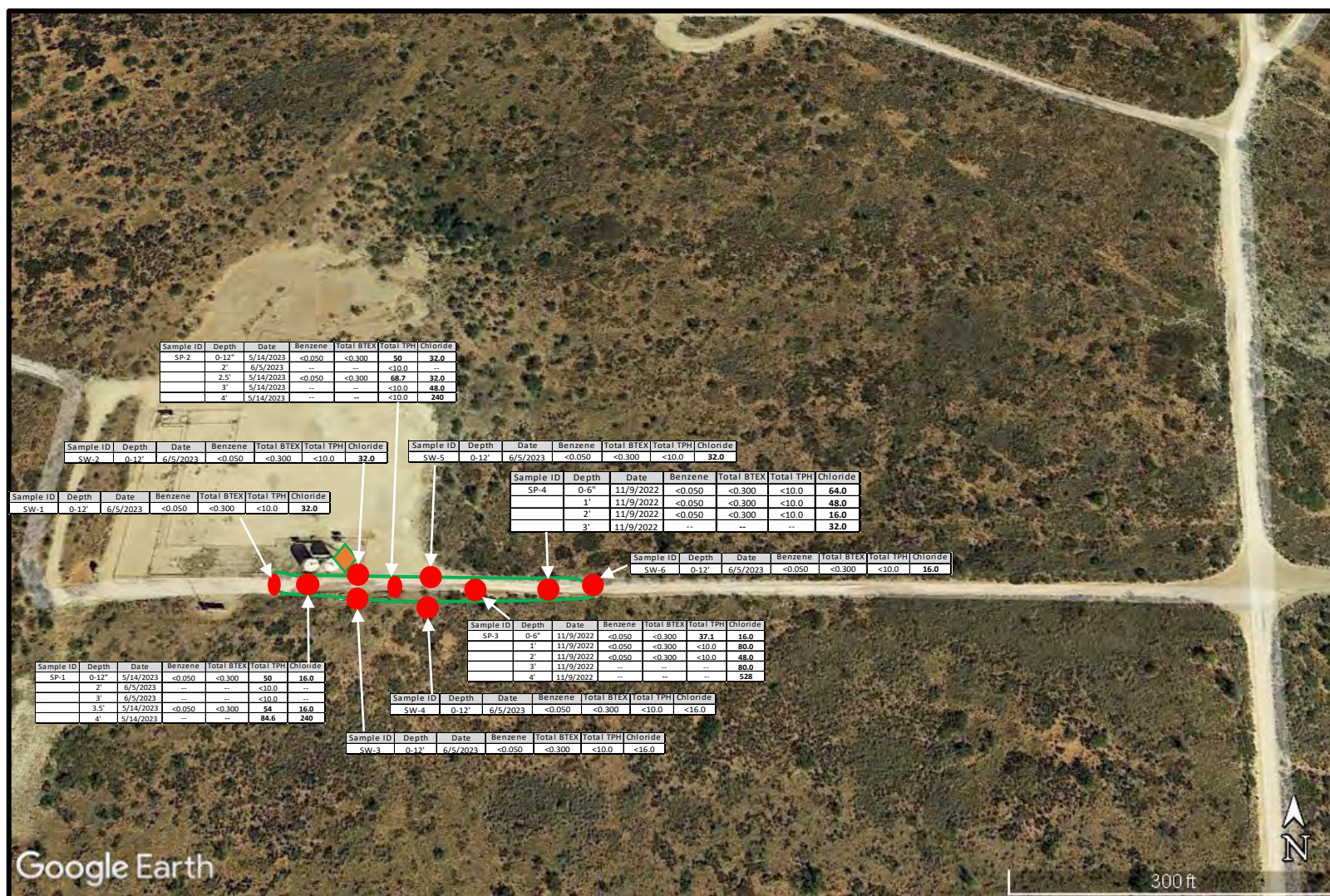
1. GRO: Gasoline Range Organics
2. DRO: Diesel Range Organics
3. MRO: Motor Oil Range Organics
4. bgs: Below ground surface.
5. - : Sample not collected for the constituent listed.
6. Bold indicates the COC was above the appropriate laboratory method/sample detection limit.
7. < : Indicates the COC was below the appropriate laboratory method/sample detection limit.
8. Yellow highlighting indicates the COC was above the appropriate NMOCD Closure Criteria.
9. Green highlighting and italic font indicates soil was treated.



FIGURES



LEGEND:  Site Location Base Map from GAIA GPS		Figure 1 Site Location Map Penroc Oil Corporation State E 10 Strawn Tank Battery Lea County, New Mexico		Drafted by: CC Checked by: CC		
				Draft: June 13, 2023		
				GPS:	32.38593 -103.285105	



LEGEND:

- Treatment Boundary
- ◆ Release Point
- Sample Location With Depth (ft bgs) and Concentrations (mg/kg)

Figure 2
Sample Location Map
Penroc Oil Corporation
State E 10 Strawn Tank Battery
Lea County, New Mexico

Drafted by: CC | Checked by: CC

Draft: June 13, 2023

GPS: 32.38593 -103.285105





Appendix A: NMOCD and NMSLO Correspondence

From: [Yu, Olivia, EMNRD](#)
To: [Merch Merchant](#)
Cc: agroves@slo.state.nm.us
Subject: FW: State E 10 Strawn Batt
Date: Friday, September 1, 2017 2:03:00 PM

Dear Mr. Merchant:

A Conoco Phillips representative informed me that the State E battery location transferred ownership to Penroc on July 1, 2017. The below photos indicate that the release is of a reportable volume. Please verify and submit an initial C-141 to both NMOCD and NMSLO within 15 days.

Thanks,

Olivia Yu
Environmental Specialist
NMOCD, District I
Olivia.yu@state.nm.us
575-393-6161 x113

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

From: Price, Henryetta [mailto:hprice@blm.gov]
Sent: Friday, September 1, 2017 11:26 AM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Subject: State E 10 Strawn Batt

Good morning Olivia,

Not sure if you're tracking the above location. Got a few pictures the other day in case you haven't seen it or it's been a while since the release.







Henryetta Price

Environmental Protection Specialist
Bureau Of Land Management

Hprice@blm.gov

Phone 575-234-5951

Cell 575-706-2780

Fax 575-234-5927

* Tis the season for African Rue. Please do a 360 scan around your well locations and lease roads.

APPROVED**By Olivia Yu at 11:16 am, Jan 29, 2018****Penroc Oil Corporation**

Oil Conservation Division (OCD) – District 1
 1625 N. French Dr.
 Hobbs, NM 88240
 Attn: Olivia Yu

NMOCD approves of the proposed delineation for 1RP-4802 with these conditions:
 1) At least 1 sample location must be established near the tanks (release point).
 2) Each sample location must demonstrate permissible levels of BTEX, TPH extended and chlorides for 2 depths: depth obtained and depth maintained at least 5 ft. further.

January 17, 2018

RE: State E 10 Strawn Tank Battery
 API No. 30-025-30516

Remediation case No.: 1RP-4802

Unit Letter O, Section 17, T-22-S, R36E, Lea County, NM
 Latitude 32.385930 Longitude -103.285105

Dear Ms. Yu,

This letter and supporting documentation is submitted as a work plan for the characterization of impacts associated with the release of crude oil at the State E 10 Strawn Tank Battery located in Lea County, NM. Upon this work plan approval from the OCD, the release characterization work plan will be commenced and the resultant investigation report will be submitted to the OCD.

The goals of this characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.) In meeting these goals, at a minimum, the following items will be addressed:

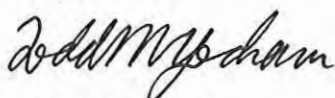
- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination will be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C6 thru C36), and for chloride by Method 300. If applicable, other potential contaminants will be analyzed. Soil samples will be taken in both the impacted area and beyond.
- Vertical delineation of soil impacts. Adsorbed soil contamination will be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C6 thru C36), and for chloride by Method 300. If applicable, other potential contaminants will be analyzed. Vertical soil samples will be taken at depth intervals no greater than five feet apart. Lithologic description of the encountered soils will be provided. At least ten vertical feet of soils with contaminant concentration at or below the OCD required value must be demonstrated as existing above the water table.

- Nominal detection limits for field and laboratory analyses will be provided.
- Composite sampling will not occur.
- A statistically significant set of split samples will be submitted for confirmatory laboratory analysis. This will include the laterally farthest and vertically deepest sets of soil samples. At least two soil samples will be submitted for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of actual laboratory results will be provided including chain of custody documentation.
- Probable depth to shallowest protectable groundwater and lateral distance to the nearest surface water will be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, then it will be anticipated at least one groundwater monitoring well will need to be installed in the area of likely maximum contamination.
- If groundwater contamination is encountered, an additional investigation work plan may be required to determine the extents of that contamination.
- Accurately scaled and well-drafted site maps will be provided indicating the location of boring, test pits, monitoring well(s) (if needed), potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Digital photographic documentation of the location and fieldwork will be provided.

Please let me know if this release characterization work plan meets your approval. Once this work plan is approved by the OCD, the release characterization work plan will be commenced and the resultant investigation report will be submitted to the OCD.

Please let me know if you have any questions.

Sincerely,



Todd M. Yocham, P.E.

Petroleum Engineer

tyocham@desertproduction.com

432-770-0615 cell

Penroc Oil Corporation

1515 W. Calle Sur, Suite 174

Hobbs, NM 88241

Penroc Oil Corporation

State E 10 Strawn Tank Battery

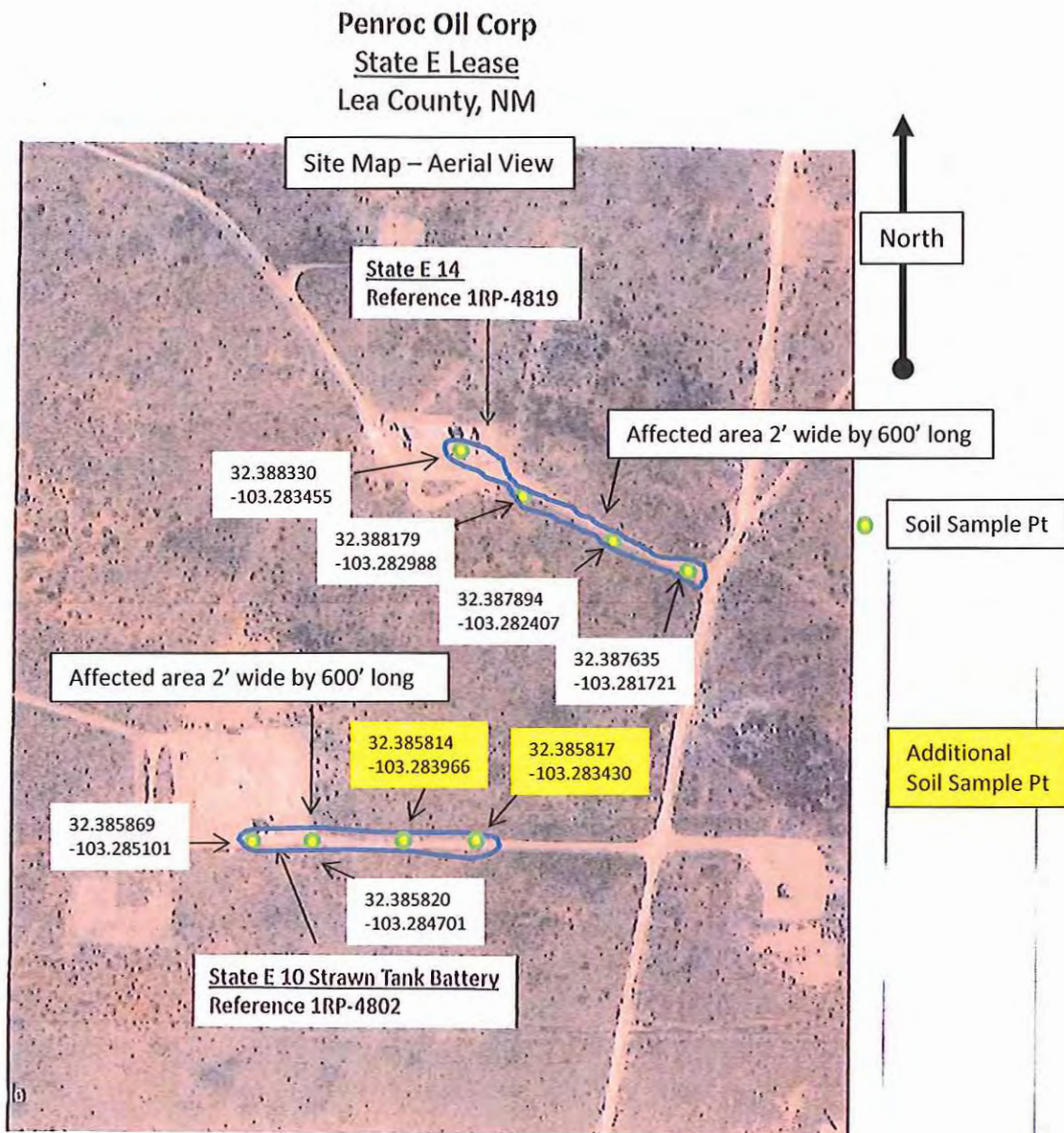
API No. 30-025-30516

Production Battery

Unit Letter O, Section 17, T-22-S, R36E, Lea County, NM

Latitude 32.385930 Longitude -103.285105

Remediation case No.: 1RP-4802



From: Naranjo, Mark
To: [Yu, Olivia, EMNRD](#); [Todd Yocham](#)
Cc: [mymerch@penrocoil.com](#); [aggie@penrocoil.com](#)
Subject: RE: Penroc Oil Corporation - State E 10 Strawn Tank Battery and State E 14 Soil Contamination Characterization Work Plans
Date: Monday, January 29, 2018 1:12:49 PM

Mr. Yocham,

NMSLO approves your delineation plan, please follow the additional stipulations Olivia has required. Thank you.

Mark Naranjo
Assistant Division Director
Field Operations Division
575.623.4979 Office
575.626.2678 Cell
575.623.9200 Fax
New Mexico State Land Office
1001 S. Atkinson
Roswell, NM 88203
MNaranjo@slo.state.nm.us
NMStatelands.org

.....
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From: Yu, Olivia, EMNRD [<mailto:Olivia.Yu@state.nm.us>]
Sent: Monday, January 29, 2018 11:43 AM
To: Todd Yocham <tyocham@desertproduction.com>; Naranjo, Mark <MNaranjo@slo.state.nm.us>
Cc: [mymerch@penrocoil.com](#); [aggie@penrocoil.com](#)
Subject: RE: Penroc Oil Corporation - State E 10 Strawn Tank Battery and State E 14 Soil Contamination Characterization Work Plans

Mr. Yocham:

NMOCD will approve of the proposed delineation plan for 1RP-4802 with these conditions:

1. In addition to the 4 proposed sample locations on the lease road, at least 1 sample location must be established in the vicinity of the tanks, where the release originated. Please be advised that additional sample locations probably will be necessary to fully characterize the

release.

2. Permissible levels for horizontal and vertical delineation is 600 mg/kg.
3. Each sample location must demonstrate permissible levels of BTEX, TPH extended, and chlorides for at least 2 depths: depth obtained and depth maintained at least 5 ft. further.
4. All laboratory analyses should have accompanying field data.

Like approval from NMSLO required. Mark Naranjo is the correspondent in the interim.

Thanks,

Olivia Yu
Environmental Specialist
NMOCD, District I
Olivia.yu@state.nm.us
575-393-6161 x113

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

From: Todd Yocham [<mailto:tyocham@desertproduction.com>]
Sent: Wednesday, January 17, 2018 3:55 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Cc: Groves, Amber <agroves@slo.state.nm.us>; mymerch@penrocoil.com; aggie@penrocoil.com
Subject: RE: Penroc Oil Corporation - State E 10 Strawn Tank Battery and State E 14 Soil Contamination Characterization Work Plans

Dear Ms. Yu,

Thank you for your approval of the proposed delineation plan for 1RP-4819.

Attached please find the revised proposed delineation plan for 1 RP-4802. I have added 2 more sample points to track further down the road.

Thanks,

Todd Yocham

Todd M. Yocham
Petroleum Engineer
C:432.770.0615

-

Penroc Oil Corporation
1515 W Calle Sur, Suite 174
Hobbs, NM 88241

From: Yu, Olivia, EMNRD [<mailto:Olivia.Yu@state.nm.us>]
Sent: Friday, December 08, 2017 3:05 PM
To: Todd Yocham
Cc: Groves, Amber; mymerch@penrocoil.com; aggie@penrocoil.com; ECallahan@berkeleyoil-gas.com
Subject: RE: Penroc Oil Corporation - State E 10 Strawn Tank Battery and State E 14 Soil Contamination Characterization Work Plans

Dear Mr. Yocham:

NMOCD rejects the proposed delineation plan for 1RP-4802. Please review the Google Earth image from November 2017. The impacted area is larger than indicated in the workplan.

NMOCD will accept the proposed delineation plan for 1RP-4819.

Please be advised that for complete vertical delineation, soil samples analyzed by an accredited laboratory must demonstrate permissible levels of BTEX, TPH extended, and chlorides for at least 2 depths: depth obtained and depth maintained at least 5 feet further in depth. Permissible levels for horizontal and vertical delineation is 600 mg/kg.

Like approval from NMSLO is required. NMSLO may have additional stipulations.

Thanks,

Olivia Yu
Environmental Specialist
NMOCD, District I
Olivia.yu@state.nm.us
575-393-6161 x113

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

From: Todd Yocham [<mailto:tyocham@desertproduction.com>]
Sent: Wednesday, November 8, 2017 1:16 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Cc: Groves, Amber <agroves@slo.state.nm.us>; mymerch@penrocoil.com; aggie@penrocoil.com;

ECallahan@berkleyoil-gas.com

Subject: Penroc Oil Corporation - State E 10 Strawn Tank Battery and State E 14 Soil Contamination Characterization Work Plans

Oil Conservation Division (OCD) – District 1
1625 N. French Dr.
Hobbs, NM 88240
Attn: Olivia Yu

Ms. Yu,

Attached please find the submitted work plans for the characterization of impacts associated with the release of produced water and crude oil for the following Remediation Cases:

Remediation Case No. 1RP-4802
State E 10 Strawn Tank Battery
And
Remediation Case No. 1RP-4819
State E 14

Please let me know if you have any questions.

Thank you,

Todd

Todd M. Yocham
Petroleum Engineer
C:432.770.0615

-
-

Penroc Oil Corporation
1515 W Calle Sur, Suite 174
Hobbs, NM 88241

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For more information please visit <http://www.symanteccloud.com>

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For more information please visit <http://www.symanteccloud.com>



Appendix B: Release Notification and Corrective Action Form (NMOCD Form 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

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

Form C-141
Revised April 3, 2017

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Penroc Oil Corporation	Contact: M.Y. Merchant
Address: 1515 W Calle Sur, Ste 174, Hobbs, NM 88241	Telephone No. 575-492-1236
Facility Name: State E 10 Strawn Tank battery	Facility Type: Tank Battery
Surface Owner: State	Mineral Owner: State of New Mexico
API No. 30-025-30516	

LOCATION OF RELEASE

Unit Letter O	Section 17	Township 22S	Range 36E	Feet from the 330	North/South Line South	Feet from the 660	East/West Line East	County Lea
------------------	---------------	-----------------	--------------	----------------------	---------------------------	----------------------	------------------------	---------------

Latitude_32.385930 Longitude_-103.285105 NAD83

NATURE OF RELEASE

Type of Release: Oil	Volume of Release 10 bo	Volume Recovered 5 bo
Source of Release: Oil Tank - picture attached	Date and Hour of Occurrence 08/23/17 6:30 a.m.	Date and Hour of Discovery 8/23/17 7:00 am
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. No	

If a Watercourse was Impacted, Describe Fully.*

No

RECEIVED

By Olivia Yu at 12:16 pm, Sep 06, 2017



Describe Cause of Problem and Remedial Action Taken.*

As the attached picture shows, a hole in the bottom of a 500 bbl oil tank caused the leak. It has been raining heavily before and after the leak. Vacuum truck immediately transferred oil from leaking tank to a good tank.

Describe Area Affected and Cleanup Action Taken.*

2 ft wide, 150 ft long effected. Due to heavy rains before and after the leak, efforts were made to transfer oil from leaking tank to good tank. Oil soaked area was dragged and clean dirt was spread.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature: 		OIL CONSERVATION DIVISION	
Printed Name: M.Y. Merchant		Approved by Environmental Specialist: 	
Title: President	Approval Date: 9/6/2017	Expiration Date:	
E-mail Address: mymerch@penrocoil.com	Conditions of Approval: see attached directive	Attached <input checked="" type="checkbox"/>	
Date: 09/05/2017	Phone: 575-492-1236		

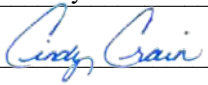
Oil Conservation Division

Incident ID	nOY1724945103
District RP	1RP-4802
Facility ID	
Application ID	

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 checked="" type="checkbox"/> The source of the release has been stopped.	
<input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input checked="" 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: <u>Cindy Crain</u>	Title: <u>Agent for Penroc Oil Corporation</u>
Signature: <u></u>	Date: <u>6/26/23</u>
email: <u>cindy.crain@gmail.com</u>	Telephone: <u>(575) 441-7244</u>
<u>OCD Only</u>	
Received by: _____	Date: _____

Incident ID	nOY1724945103
District RP	1RP-4802
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>100</u> (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 not 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 ½-mile of the lateral extents of the release
- ☒ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

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

Oil Conservation Division

Incident ID	nOY1724945103
District RP	1RP-4802
Facility ID	
Application ID	

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

Printed Name: Cindy Crain Title: Agent for Penroc Oil Corporation

Signature:  Date: 6/26/23

email: cindy.crain@gmail.com Telephone: (575) 441-7244

OCD Only

Received by: Shelly Wells Date: 6/26/2023

Incident ID	nOY1724945103
District RP	1RP-4802
Facility ID	
Application ID	

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: _____

Incident ID	nOY1724945103
District RP	1RP-4802
Facility ID	
Application ID	

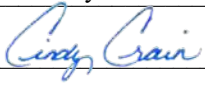
Closure

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

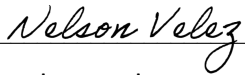
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public 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: Cindy Crain Title: Agent for Penroc Oil Corporation
Signature:  Date: 6/26/23
email: cindy.crain@gmail.com Telephone: (575) 441-7244

OCD Only

Received by: Shelly Wells Date: 6/26/2023

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:  Date: 09/20/2023
Printed Name: Nelson Velez Title: Environmental Specialist – Adv



Appendix C: Laboratory Analytical Results



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

November 22, 2022

CINDY CRAIN

CRAIN ENVIROMENTAL

2925 E. 17TH ST.

ODESSA, TX 79761

RE: STATE 10 STRAWN TB

Enclosed are the results of analyses for samples received by the laboratory on 11/09/22 16:18.

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/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited 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,

Mike Snyder For Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

CRAIN ENVIROMENTAL
CINDY CRAIN
2925 E. 17TH ST.
ODESSA TX, 79761
Fax To:

Received: 11/09/2022
Reported: 11/22/2022
Project Name: STATE 10 STRAWN TB
Project Number: PENROC
Project Location: LEA CO., NM

Sampling Date: 11/09/2022
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP - 1 (0-6") (H225310-01)

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	11/13/2022	ND	1.99	99.4	2.00	2.90	
Toluene*	<0.050	0.050	11/13/2022	ND	2.22	111	2.00	2.08	
Ethylbenzene*	<0.050	0.050	11/13/2022	ND	2.07	103	2.00	0.803	
Total Xylenes*	<0.150	0.150	11/13/2022	ND	6.24	104	6.00	1.98	
Total BTEX	<0.300	0.300	11/13/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	864	16.0	11/10/2022	ND	432	108	400	0.00		

TPH 8015M	mg/kg		Analyzed By: MS					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	11/11/2022	ND	197	98.7	200	0.466	
DRO >C10-C28*	24000	50.0	11/11/2022	ND	192	96.1	200	0.945	
EXT DRO >C28-C36	6200	50.0	11/11/2022	ND					

Surrogate: 1-Chlorooctane 125 % 45.3-161

Surrogate: 1-Chlorooctadecane 1330 % 46.3-178

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

CRAIN ENVIROMENTAL
CINDY CRAIN
2925 E. 17TH ST.
ODESSA TX, 79761
Fax To:

Received: 11/09/2022
Reported: 11/22/2022
Project Name: STATE 10 STRAWN TB
Project Number: PENROC
Project Location: LEA CO., NM

Sampling Date: 11/09/2022
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP - 1 (1') (H225310-02)

BTX 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	11/13/2022	ND	1.99	99.4	2.00	2.90		
Toluene*	<0.050	0.050	11/13/2022	ND	2.22	111	2.00	2.08		
Ethylbenzene*	<0.050	0.050	11/13/2022	ND	2.07	103	2.00	0.803		
Total Xylenes*	<0.150	0.150	11/13/2022	ND	6.24	104	6.00	1.98		
Total BTX	<0.300	0.300	11/13/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.2 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1680	16.0	11/10/2022	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	11/11/2022	ND	197	98.7	200	0.466	
DRO >C10-C28*	1240	50.0	11/11/2022	ND	192	96.1	200	0.945	
EXT DRO >C28-C36	253	50.0	11/11/2022	ND					

Surrogate: 1-Chlorooctane 109 % 45.3-161

Surrogate: 1-Chlorooctadecane 150 % 46.3-178

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

CRAIN ENVIROMENTAL
CINDY CRAIN
2925 E. 17TH ST.
ODESSA TX, 79761
Fax To:

Received: 11/09/2022
Reported: 11/22/2022
Project Name: STATE 10 STRAWN TB
Project Number: PENROC
Project Location: LEA CO., NM

Sampling Date: 11/09/2022
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP - 1 (2') (H225310-03)

BTX 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	11/13/2022	ND	1.99	99.4	2.00	2.90		
Toluene*	<0.050	0.050	11/13/2022	ND	2.22	111	2.00	2.08		
Ethylbenzene*	<0.050	0.050	11/13/2022	ND	2.07	103	2.00	0.803		
Total Xylenes*	<0.150	0.150	11/13/2022	ND	6.24	104	6.00	1.98		
Total BTX	<0.300	0.300	11/13/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	560	16.0	11/10/2022	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	11/11/2022	ND	197	98.7	200	0.466	
DRO >C10-C28*	830	50.0	11/11/2022	ND	192	96.1	200	0.945	
EXT DRO >C28-C36	155	50.0	11/11/2022	ND					

Surrogate: 1-Chlorooctane 107 % 45.3-161

Surrogate: 1-Chlorooctadecane 138 % 46.3-178

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*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

CRAIN ENVIROMENTAL
CINDY CRAIN
2925 E. 17TH ST.
ODESSA TX, 79761
Fax To:

Received: 11/09/2022
Reported: 11/22/2022
Project Name: STATE 10 STRAWN TB
Project Number: PENROC
Project Location: LEA CO., NM

Sampling Date: 11/09/2022
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP - 1 (3') (H225310-04)

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	304	16.0	11/10/2022	ND	432	108	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	12.2	10.0	11/16/2022	ND	209	105	200	1.12	
DRO >C10-C28*	389	10.0	11/16/2022	ND	207	103	200	4.16	
EXT DRO >C28-C36	27.8	10.0	11/16/2022	ND					
Surrogate: 1-Chlorooctane	104 %	45.3-161							
Surrogate: 1-Chlorooctadecane	121 %	46.3-178							

Sample ID: SP - 1 (4') (H225310-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	11/10/2022	ND	432	108	400	0.00	
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	11/16/2022	ND	209	105	200	1.12	
DRO >C10-C28*	84.6	10.0	11/16/2022	ND	207	103	200	4.16	
EXT DRO >C28-C36	<10.0	10.0	11/16/2022	ND					
Surrogate: 1-Chlorooctane		90.5 %	45.3-161						
Surrogate: 1-Chlorooctadecane		107 %	46.3-178						

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

CRAIN ENVIROMENTAL
CINDY CRAIN
2925 E. 17TH ST.
ODESSA TX, 79761
Fax To:

Received: 11/09/2022
Reported: 11/22/2022
Project Name: STATE 10 STRAWN TB
Project Number: PENROC
Project Location: LEA CO., NM

Sampling Date: 11/09/2022
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP - 2 (0-6") (H225310-07)

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	11/13/2022	ND	1.99	99.4	2.00	2.90		
Toluene*	<0.050	0.050	11/13/2022	ND	2.22	111	2.00	2.08		
Ethylbenzene*	<0.050	0.050	11/13/2022	ND	2.07	103	2.00	0.803		
Total Xylenes*	<0.150	0.150	11/13/2022	ND	6.24	104	6.00	1.98		
Total BTEx	<0.300	0.300	11/13/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.1 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	11/10/2022	ND	432	108	400	0.00		

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	11/10/2022	ND	203	102	200	1.73	
DRO >C10-C28*	1190	10.0	11/10/2022	ND	184	92.2	200	3.06	QM-07
EXT DRO >C28-C36	365	10.0	11/10/2022	ND					

Surrogate: 1-Chlorooctane 92.8 % 45.3-161

Surrogate: 1-Chlorooctadecane 103 % 46.3-178

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

CRAIN ENVIROMENTAL
CINDY CRAIN
2925 E. 17TH ST.
ODESSA TX, 79761
Fax To:

Received: 11/09/2022
Reported: 11/22/2022
Project Name: STATE 10 STRAWN TB
Project Number: PENROC
Project Location: LEA CO., NM

Sampling Date: 11/09/2022
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP - 2 (1') (H225310-08)

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	11/13/2022	ND	1.99	99.4	2.00	2.90	
Toluene*	<0.050	0.050	11/13/2022	ND	2.22	111	2.00	2.08	
Ethylbenzene*	<0.050	0.050	11/13/2022	ND	2.07	103	2.00	0.803	
Total Xylenes*	<0.150	0.150	11/13/2022	ND	6.24	104	6.00	1.98	
Total BTEx	<0.300	0.300	11/13/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.0 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	11/10/2022	ND	432	108	400	0.00	

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	11/10/2022	ND	203	102	200	1.73	
DRO >C10-C28*	21.8	10.0	11/10/2022	ND	184	92.2	200	3.06	
EXT DRO >C28-C36	37.3	10.0	11/10/2022	ND					

Surrogate: 1-Chlorooctane 95.0 % 45.3-161

Surrogate: 1-Chlorooctadecane 110 % 46.3-178

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

CRAIN ENVIROMENTAL
CINDY CRAIN
2925 E. 17TH ST.
ODESSA TX, 79761
Fax To:

Received: 11/09/2022
Reported: 11/22/2022
Project Name: STATE 10 STRAWN TB
Project Number: PENROC
Project Location: LEA CO., NM

Sampling Date: 11/09/2022
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP - 2 (2') (H225310-09)

BTX 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	11/13/2022	ND	1.99	99.4	2.00	2.90	
Toluene*	<0.050	0.050	11/13/2022	ND	2.22	111	2.00	2.08	
Ethylbenzene*	<0.050	0.050	11/13/2022	ND	2.07	103	2.00	0.803	
Total Xylenes*	<0.150	0.150	11/13/2022	ND	6.24	104	6.00	1.98	
Total BTEX	<0.300	0.300	11/13/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.7 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	11/10/2022	ND	432	108	400	0.00	

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	11/10/2022	ND	203	102	200	1.73	
DRO >C10-C28*	423	10.0	11/10/2022	ND	184	92.2	200	3.06	
EXT DRO >C28-C36	112	10.0	11/10/2022	ND					

Surrogate: 1-Chlorooctane 81.6 % 45.3-161

Surrogate: 1-Chlorooctadecane 139 % 46.3-178

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

CRAIN ENVIROMENTAL
CINDY CRAIN
2925 E. 17TH ST.
ODESSA TX, 79761
Fax To:

Received: 11/09/2022
Reported: 11/22/2022
Project Name: STATE 10 STRAWN TB
Project Number: PENROC
Project Location: LEA CO., NM

Sampling Date: 11/09/2022
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP - 2 (3') (H225310-10)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	11/10/2022	ND	432	108	400	0.00	
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	11/16/2022	ND	209	105	200	1.12	
DRO >C10-C28*	<10.0	10.0	11/16/2022	ND	207	103	200	4.16	
EXT DRO >C28-C36	<10.0	10.0	11/16/2022	ND					
Surrogate: 1-Chlorooctane	93.6 %	45.3-161							
Surrogate: 1-Chlorooctadecane	107 %	46.3-178							

Sample ID: SP - 2 (4') (H225310-11)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	240	16.0	11/10/2022	ND	432	108	400	0.00		
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	11/16/2022	ND	209	105	200	1.12		
DRO >C10-C28*	<10.0	10.0	11/16/2022	ND	207	103	200	4.16		
EXT DRO >C28-C36	<10.0	10.0	11/16/2022	ND						
Surrogate: 1-Chlorooctane	94.4 %	45.3-161								
Surrogate: 1-Chlorooctadecane	104 %	46.3-178								

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

CRAIN ENVIROMENTAL
CINDY CRAIN
2925 E. 17TH ST.
ODESSA TX, 79761
Fax To:

Received: 11/09/2022
Reported: 11/22/2022
Project Name: STATE 10 STRAWN TB
Project Number: PENROC
Project Location: LEA CO., NM

Sampling Date: 11/09/2022
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP - 3 (0-6") (H225310-13)

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	11/13/2022	ND	1.99	99.4	2.00	2.90		
Toluene*	<0.050	0.050	11/13/2022	ND	2.22	111	2.00	2.08		
Ethylbenzene*	<0.050	0.050	11/13/2022	ND	2.07	103	2.00	0.803		
Total Xylenes*	<0.150	0.150	11/13/2022	ND	6.24	104	6.00	1.98		
Total BTEx	<0.300	0.300	11/13/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.7 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	11/10/2022	ND	432	108	400	0.00		

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	11/10/2022	ND	203	102	200	1.73	
DRO >C10-C28*	18.8	10.0	11/10/2022	ND	184	92.2	200	3.06	
EXT DRO >C28-C36	18.3	10.0	11/10/2022	ND					

Surrogate: 1-Chlorooctane 91.9 % 45.3-161

Surrogate: 1-Chlorooctadecane 103 % 46.3-178

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

CRAIN ENVIROMENTAL
CINDY CRAIN
2925 E. 17TH ST.
ODESSA TX, 79761
Fax To:

Received: 11/09/2022
Reported: 11/22/2022
Project Name: STATE 10 STRAWN TB
Project Number: PENROC
Project Location: LEA CO., NM

Sampling Date: 11/09/2022
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP - 3 (1') (H225310-14)

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	11/13/2022	ND	1.99	99.4	2.00	2.90		
Toluene*	<0.050	0.050	11/13/2022	ND	2.22	111	2.00	2.08		
Ethylbenzene*	<0.050	0.050	11/13/2022	ND	2.07	103	2.00	0.803		
Total Xylenes*	<0.150	0.150	11/13/2022	ND	6.24	104	6.00	1.98		
Total BTEX	<0.300	0.300	11/13/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.7 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	11/10/2022	ND	432	108	400	0.00		

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	11/10/2022	ND	203	102	200	1.73	
DRO >C10-C28*	<10.0	10.0	11/10/2022	ND	184	92.2	200	3.06	
EXT DRO >C28-C36	<10.0	10.0	11/10/2022	ND					

Surrogate: 1-Chlorooctane 94.0 % 45.3-161

Surrogate: 1-Chlorooctadecane 105 % 46.3-178

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

CRAIN ENVIROMENTAL
CINDY CRAIN
2925 E. 17TH ST.
ODESSA TX, 79761
Fax To:

Received: 11/09/2022
Reported: 11/22/2022
Project Name: STATE 10 STRAWN TB
Project Number: PENROC
Project Location: LEA CO., NM

Sampling Date: 11/09/2022
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP - 3 (2') (H225310-15)

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	11/13/2022	ND	1.99	99.4	2.00	2.90	
Toluene*	<0.050	0.050	11/13/2022	ND	2.22	111	2.00	2.08	
Ethylbenzene*	<0.050	0.050	11/13/2022	ND	2.07	103	2.00	0.803	
Total Xylenes*	<0.150	0.150	11/13/2022	ND	6.24	104	6.00	1.98	
Total BTEx	<0.300	0.300	11/13/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.8 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	11/10/2022	ND	432	108	400	0.00	

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	11/10/2022	ND	203	102	200	1.73	
DRO >C10-C28*	<10.0	10.0	11/10/2022	ND	184	92.2	200	3.06	
EXT DRO >C28-C36	<10.0	10.0	11/10/2022	ND					

Surrogate: 1-Chlorooctane 99.7 % 45.3-161

Surrogate: 1-Chlorooctadecane 111 % 46.3-178

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

CRAIN ENVIROMENTAL
CINDY CRAIN
2925 E. 17TH ST.
ODESSA TX, 79761
Fax To:

Received: 11/09/2022
Reported: 11/22/2022
Project Name: STATE 10 STRAWN TB
Project Number: PENROC
Project Location: LEA CO., NM

Sampling Date: 11/09/2022
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP - 3 (3') (H225310-16)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	11/10/2022	ND	432	108	400	0.00		

Sample ID: SP - 3 (4') (H225310-17)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	528	16.0	11/10/2022	ND	432	108	400	0.00	

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

CRAIN ENVIROMENTAL
CINDY CRAIN
2925 E. 17TH ST.
ODESSA TX, 79761
Fax To:

Received: 11/09/2022
Reported: 11/22/2022
Project Name: STATE 10 STRAWN TB
Project Number: PENROC
Project Location: LEA CO., NM

Sampling Date: 11/09/2022
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP - 4 (0-6") (H225310-19)

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	11/13/2022	ND	1.99	99.4	2.00	2.90		
Toluene*	<0.050	0.050	11/13/2022	ND	2.22	111	2.00	2.08		
Ethylbenzene*	<0.050	0.050	11/13/2022	ND	2.07	103	2.00	0.803		
Total Xylenes*	<0.150	0.150	11/13/2022	ND	6.24	104	6.00	1.98		
Total BTEx	<0.300	0.300	11/13/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.3 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	11/10/2022	ND	432	108	400	0.00		

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	11/10/2022	ND	203	102	200	1.73	
DRO >C10-C28*	<10.0	10.0	11/10/2022	ND	184	92.2	200	3.06	
EXT DRO >C28-C36	<10.0	10.0	11/10/2022	ND					

Surrogate: 1-Chlorooctane 91.7 % 45.3-161

Surrogate: 1-Chlorooctadecane 105 % 46.3-178

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

CRAIN ENVIROMENTAL
CINDY CRAIN
2925 E. 17TH ST.
ODESSA TX, 79761
Fax To:

Received: 11/09/2022
Reported: 11/22/2022
Project Name: STATE 10 STRAWN TB
Project Number: PENROC
Project Location: LEA CO., NM

Sampling Date: 11/09/2022
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP - 4 (1') (H225310-20)

BTX 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	11/13/2022	ND	1.99	99.4	2.00	2.90	
Toluene*	<0.050	0.050	11/13/2022	ND	2.22	111	2.00	2.08	
Ethylbenzene*	<0.050	0.050	11/13/2022	ND	2.07	103	2.00	0.803	
Total Xylenes*	<0.150	0.150	11/13/2022	ND	6.24	104	6.00	1.98	
Total BTX	<0.300	0.300	11/13/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.1 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	11/10/2022	ND	432	108	400	0.00	

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	11/10/2022	ND	203	102	200	1.73	
DRO >C10-C28*	<10.0	10.0	11/10/2022	ND	184	92.2	200	3.06	
EXT DRO >C28-C36	<10.0	10.0	11/10/2022	ND					

Surrogate: 1-Chlorooctane 94.9 % 45.3-161

Surrogate: 1-Chlorooctadecane 108 % 46.3-178

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

CRAIN ENVIROMENTAL
CINDY CRAIN
2925 E. 17TH ST.
ODESSA TX, 79761
Fax To:

Received: 11/09/2022
Reported: 11/22/2022
Project Name: STATE 10 STRAWN TB
Project Number: PENROC
Project Location: LEA CO., NM

Sampling Date: 11/09/2022
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP - 4 (2') (H225310-21)

BTX 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	11/13/2022	ND	1.99	99.4	2.00	2.90		
Toluene*	<0.050	0.050	11/13/2022	ND	2.22	111	2.00	2.08		
Ethylbenzene*	<0.050	0.050	11/13/2022	ND	2.07	103	2.00	0.803		
Total Xylenes*	<0.150	0.150	11/13/2022	ND	6.24	104	6.00	1.98		
Total BTX	<0.300	0.300	11/13/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	11/10/2022	ND	432	108	400	0.00	

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	11/10/2022	ND	203	102	200	1.73	
DRO >C10-C28*	<10.0	10.0	11/10/2022	ND	184	92.2	200	3.06	
EXT DRO >C28-C36	<10.0	10.0	11/10/2022	ND					

Surrogate: 1-Chlorooctane 93.9 % 45.3-161

Surrogate: 1-Chlorooctadecane 106 % 46.3-178

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

CRAIN ENVIROMENTAL
CINDY CRAIN
2925 E. 17TH ST.
ODESSA TX, 79761
Fax To:

Received: 11/09/2022
Reported: 11/22/2022
Project Name: STATE 10 STRAWN TB
Project Number: PENROC
Project Location: LEA CO., NM

Sampling Date: 11/09/2022
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP - 4 (3') (H225310-22)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	11/10/2022	ND	432	108	400	0.00		

Sample ID: SP - 4 (4') (H225310-23)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	432	16.0	11/10/2022	ND	432	108	400	0.00	

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Notes and Definitions

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

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A handwritten signature in black ink, appearing to read "Mike Snyder".

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Released to Imaging: 9/20/2023 12:12:27 PM

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Grain Environmental Project Manager: Cindy Grain Address: 2925 E. 17th St. City: Odessa State: TX Zip: 79761 Phone #: (575) 441-7244 Fax #: Project #: Project Name: State 10 Strawn TB Project Location: Lea Co., NM Sample Name: Cindy Grain				P.O. #: Company: Pence Attn: Merch Merchant Address: City: Hobbs State: Zip: Phone #: (575) 631-7450 Fax #:			
FOR LAB USE ONLY				BILL TO			
Lab I.D.				ANALYSIS REQUEST			
Sample I.D.				DATE			
H225310				11/9/22			
11 SP-2 (4')				0935			
12 SP-2 (5')				0940			
13 SP-3 (0-6")				0947			
14 SP-3 (1')				0950			
15 SP-3 (2')				0953			
16 SP-3 (3')				0956			
17 SP-3 (4')				1000			
18 SP-3 (5')				1005			
19 SP-4 (0-6")				1015			
20 SP-4 (1')				1020			
(G)RAB OR (C)OMP.				TPH 8015 M			
# CONTAINERS				BTEX			
GROUNDWATER				Chlorides			
WASTEWATER				HOLD			
SOIL							
OIL							
SLUDGE							
OTHER :							
ACID/BASE:							
ICE / COOL							
OTHER :							
MATRIX				SAMPLING			
PRESERV							
Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No				Add'l Phone #:			
All Results are emailed. Please provide Email address:							
Turnaround Time:				Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>			
Thermometer ID #113				Bacteria (only) Sample Condition			
Correction Factor -0.6°C				Cool Intact <input type="checkbox"/> Observed Temp. °C			
				Yes <input type="checkbox"/> No <input type="checkbox"/>			
				Corrected Temp. °C			

P. 204



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

P. 3 of 4

Company Name: <u>Cyain Environmental</u> Project Manager: <u>Cindy Crain</u> Address: <u>2925 E. 17th St.</u> City: <u>Odessa</u> State: <u>TX</u> Zip: <u>79761</u> Phone #: <u>(575) 441-7244</u> Fax #: _____ Project #: _____ Project Owner: <u>Percec</u> Project Name: <u>State 10 Stawm TB</u> Project Location: <u>Lea Co, NM</u> Sampler Name: <u>Cindy Crain</u>				BILL TO P.O. #: _____ Company: <u>Percec</u> Attn: <u>Merch Merchant</u> Address: _____ City: <u>Hobbs</u> State: _____ Zip: _____ Phone #: <u>(575) 431-7450</u> Fax #: _____				ANALYSIS REQUEST			
FOR LAB USE ONLY				MATRIX (G)RAB OR (C)OMP. _____ # CONTAINERS _____ GROUNDWATER _____ WASTEWATER _____ SOIL _____ OIL _____ SLUDGE _____ OTHER: _____ ACID/BASE: _____ ICE / COOL _____ OTHER: _____				PRESERV. DATE _____ TIME _____ SAMPLING _____			
Lab I.D.				Sample I.D.				TPH <u>8015 M</u> BTEX _____ Chlorides _____ HOLD _____			
<u>H225310</u> <u>21</u> <u>SP-4 (2')</u> <u>22</u> <u>SP-4 (3')</u> <u>23</u> <u>SP-4 (4')</u> <u>24</u> <u>SP-4 (5')</u>				<u>1</u> <u>1</u> <u>1</u> <u>1</u>				<u>11/1/22</u> <u>1022</u> <u>1025</u> <u>1030</u> <u>1035</u>			
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Delivered By: (Circle One) Sampler - UPS - Bus - Other: _____				Observed Temp. °C <u>4.3</u> Corrected Temp. °C <u>5.7</u> Sample Condition Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Checked By: (Initials) <u>Y-O-</u>				Turnaround Time: _____ Standard <u>Rush</u> Bacteria (only) <input checked="" type="checkbox"/> Cool Intact <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Sample Condition Observed Temp. °C _____ Corrected Temp. °C _____			
Remarks: _____ Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #: _____ All Results are emailed. Please provide Email address: _____											

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



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

May 19, 2023

MIKE HOLDER

ELITE ENVIRONMENTAL SERVICES

P.O. BOX 735

GAINSVILLE, TX 76241

RE: STATE E 10 STRAWN

Enclosed are the results of analyses for samples received by the laboratory on 05/16/23 10:45.

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/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited 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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

ELITE ENVIRONMENTAL SERVICES
 MIKE HOLDER
 P.O. BOX 735
 GAINSVILLE TX, 76241
 Fax To:

Received: 05/16/2023
 Reported: 05/19/2023
 Project Name: STATE E 10 STRAWN
 Project Number: PENROC-LEA CO.
 Project Location: LEA COUNTY, NM

Sampling Date: 05/14/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: 1 A (H232437-01)

BTX 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	05/18/2023	ND	2.22	111	2.00	5.36	
Toluene*	<0.050	0.050	05/18/2023	ND	2.29	115	2.00	7.28	
Ethylbenzene*	<0.050	0.050	05/18/2023	ND	2.22	111	2.00	7.69	
Total Xylenes*	<0.150	0.150	05/18/2023	ND	6.87	114	6.00	7.05	
Total BTX	<0.300	0.300	05/18/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

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	05/17/2023	ND	416	104	400	0.00		

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	05/18/2023	ND	180	90.0	200	0.865	
DRO >C10-C28*	50	10.0	05/18/2023	ND	167	83.5	200	0.184	
EXT DRO >C28-C36	<10.0	10.0	05/18/2023	ND					

Surrogate: 1-Chlorooctane 84.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 94.5 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ELITE ENVIRONMENTAL SERVICES
 MIKE HOLDER
 P.O. BOX 735
 GAINSVILLE TX, 76241
 Fax To:

Received: 05/16/2023
 Reported: 05/19/2023
 Project Name: STATE E 10 STRAWN
 Project Number: PENROC-LEA CO.
 Project Location: LEA COUNTY, NM

Sampling Date: 05/14/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: 2 A (H232437-02)

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	05/18/2023	ND	2.22	111	2.00	5.36	
Toluene*	<0.050	0.050	05/18/2023	ND	2.29	115	2.00	7.28	
Ethylbenzene*	<0.050	0.050	05/18/2023	ND	2.22	111	2.00	7.69	
Total Xylenes*	<0.150	0.150	05/18/2023	ND	6.87	114	6.00	7.05	
Total BTEx	<0.300	0.300	05/18/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

Chloride, SM4500CI-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	05/17/2023	ND	416	104	400	0.00	

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	05/18/2023	ND	180	90.0	200	0.865	
DRO >C10-C28*	54	10.0	05/18/2023	ND	167	83.5	200	0.184	
EXT DRO >C28-C36	<10.0	10.0	05/18/2023	ND					

Surrogate: 1-Chlorooctane 83.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 99.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ELITE ENVIRONMENTAL SERVICES
 MIKE HOLDER
 P.O. BOX 735
 GAINSVILLE TX, 76241
 Fax To:

Received: 05/16/2023
 Reported: 05/19/2023
 Project Name: STATE E 10 STRAWN
 Project Number: PENROC-LEA CO.
 Project Location: LEA COUNTY, NM

Sampling Date: 05/14/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: 3 A (H232437-03)

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	05/18/2023	ND	2.22	111	2.00	5.36	
Toluene*	<0.050	0.050	05/18/2023	ND	2.29	115	2.00	7.28	
Ethylbenzene*	<0.050	0.050	05/18/2023	ND	2.22	111	2.00	7.69	
Total Xylenes*	<0.150	0.150	05/18/2023	ND	6.87	114	6.00	7.05	
Total BTEx	<0.300	0.300	05/18/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	05/17/2023	ND	416	104	400	0.00	

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	05/18/2023	ND	180	90.0	200	0.865	
DRO >C10-C28*	50	10.0	05/18/2023	ND	167	83.5	200	0.184	
EXT DRO >C28-C36	<10.0	10.0	05/18/2023	ND					

Surrogate: 1-Chlorooctane 76.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 81.5 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ELITE ENVIRONMENTAL SERVICES
 MIKE HOLDER
 P.O. BOX 735
 GAINSVILLE TX, 76241
 Fax To:

Received: 05/16/2023
 Reported: 05/19/2023
 Project Name: STATE E 10 STRAWN
 Project Number: PENROC-LEA CO.
 Project Location: LEA COUNTY, NM

Sampling Date: 05/14/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: 4 A (H232437-04)

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	05/18/2023	ND	2.22	111	2.00	5.36	
Toluene*	<0.050	0.050	05/18/2023	ND	2.29	115	2.00	7.28	
Ethylbenzene*	<0.050	0.050	05/18/2023	ND	2.22	111	2.00	7.69	
Total Xylenes*	<0.150	0.150	05/18/2023	ND	6.87	114	6.00	7.05	
Total BTEX	<0.300	0.300	05/18/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	05/17/2023	ND	416	104	400	0.00		

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	05/17/2023	ND	196	98.2	200	5.20	
DRO >C10-C28*	68.7	10.0	05/17/2023	ND	183	91.4	200	4.19	
EXT DRO >C28-C36	<10.0	10.0	05/17/2023	ND					

Surrogate: 1-Chlorooctane 70.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 74.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "C. D. Keene", written over a horizontal line.

Celey D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 7 of 7



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

June 07, 2023

MIKE HOLDER

ELITE ENVIRONMENTAL SERVICES

P.O. BOX 735

GAINSVILLE, TX 76241

RE: STATE E 10 STRAWN

Enclosed are the results of analyses for samples received by the laboratory on 06/05/23 11:35.

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/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited 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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is fluid and cursive, with the first name "Celey" and last name "Keene" clearly distinguishable.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ELITE ENVIRONMENTAL SERVICES
 MIKE HOLDER
 P.O. BOX 735
 GAINSVILLE TX, 76241
 Fax To:

Received: 06/05/2023
 Reported: 06/07/2023
 Project Name: STATE E 10 STRAWN
 Project Number: PENROC
 Project Location: LEA COUNTY, NM

Sampling Date: 06/05/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP - 1 - 2' (H232827-01)

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	06/06/2023	ND	191	95.4	200	8.18	
DRO >C10-C28*	<10.0	10.0	06/06/2023	ND	183	91.4	200	4.11	
EXT DRO >C28-C36	<10.0	10.0	06/06/2023	ND					
Surrogate: 1-Chlorooctane	84.2 %	48.2-134							
Surrogate: 1-Chlorooctadecane	92.4 %	49.1-148							

Sample ID: SP - 1 - 3' (H232827-02)

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	06/05/2023	ND	191	95.4	200	8.18	
DRO >C10-C28*	<10.0	10.0	06/05/2023	ND	183	91.4	200	4.11	
EXT DRO >C28-C36	<10.0	10.0	06/05/2023	ND					
Surrogate: 1-Chlorooctane	81.5 %	48.2-134							
Surrogate: 1-Chlorooctadecane	87.2 %	49.1-148							

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Analytical Results For:

ELITE ENVIRONMENTAL SERVICES
 MIKE HOLDER
 P.O. BOX 735
 GAINSVILLE TX, 76241
 Fax To:

Received: 06/05/2023
 Reported: 06/07/2023
 Project Name: STATE E 10 STRAWN
 Project Number: PENROC
 Project Location: LEA COUNTY, NM

Sampling Date: 06/05/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP - 2 - 2' (H232827-03)

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	06/05/2023	ND	191	95.4	200	8.18	
DRO >C10-C28*	<10.0	10.0	06/05/2023	ND	183	91.4	200	4.11	
EXT DRO >C28-C36	<10.0	10.0	06/05/2023	ND					
Surrogate: 1-Chlorooctane	77.4 %	48.2-134							
Surrogate: 1-Chlorooctadecane	89.1 %	49.1-148							

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ELITE ENVIRONMENTAL SERVICES
 MIKE HOLDER
 P.O. BOX 735
 GAINSVILLE TX, 76241
 Fax To:

Received: 06/05/2023
 Reported: 06/07/2023
 Project Name: STATE E 10 STRAWN
 Project Number: PENROC
 Project Location: LEA COUNTY, NM

Sampling Date: 06/05/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SW - 1 (H232827-04)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/05/2023	ND	2.05	103	2.00	1.95		
Toluene*	<0.050	0.050	06/05/2023	ND	2.04	102	2.00	1.86		
Ethylbenzene*	<0.050	0.050	06/05/2023	ND	1.97	98.4	2.00	0.638		
Total Xylenes*	<0.150	0.150	06/05/2023	ND	5.97	99.6	6.00	0.409		
Total BTEx	<0.300	0.300	06/05/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	06/06/2023	ND	432	108	400	0.00	

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	06/05/2023	ND	191	95.4	200	8.18	
DRO >C10-C28*	<10.0	10.0	06/05/2023	ND	183	91.4	200	4.11	
EXT DRO >C28-C36	<10.0	10.0	06/05/2023	ND					

Surrogate: 1-Chlorooctane 84.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 89.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ELITE ENVIRONMENTAL SERVICES
 MIKE HOLDER
 P.O. BOX 735
 GAINSVILLE TX, 76241
 Fax To:

Received: 06/05/2023
 Reported: 06/07/2023
 Project Name: STATE E 10 STRAWN
 Project Number: PENROC
 Project Location: LEA COUNTY, NM

Sampling Date: 06/05/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SW - 2 (H232827-05)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/05/2023	ND	2.05	103	2.00	1.95		
Toluene*	<0.050	0.050	06/05/2023	ND	2.04	102	2.00	1.86		
Ethylbenzene*	<0.050	0.050	06/05/2023	ND	1.97	98.4	2.00	0.638		
Total Xylenes*	<0.150	0.150	06/05/2023	ND	5.97	99.6	6.00	0.409		
Total BTX	<0.300	0.300	06/05/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	06/06/2023	ND	432	108	400	0.00	

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	06/05/2023	ND	191	95.4	200	8.18	
DRO >C10-C28*	<10.0	10.0	06/05/2023	ND	183	91.4	200	4.11	
EXT DRO >C28-C36	<10.0	10.0	06/05/2023	ND					

Surrogate: 1-Chlorooctane 81.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ELITE ENVIRONMENTAL SERVICES
 MIKE HOLDER
 P.O. BOX 735
 GAINSVILLE TX, 76241
 Fax To:

Received: 06/05/2023
 Reported: 06/07/2023
 Project Name: STATE E 10 STRAWN
 Project Number: PENROC
 Project Location: LEA COUNTY, NM

Sampling Date: 06/05/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SW - 3 (H232827-06)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/05/2023	ND	2.05	103	2.00	1.95	
Toluene*	<0.050	0.050	06/05/2023	ND	2.04	102	2.00	1.86	
Ethylbenzene*	<0.050	0.050	06/05/2023	ND	1.97	98.4	2.00	0.638	
Total Xylenes*	<0.150	0.150	06/05/2023	ND	5.97	99.6	6.00	0.409	
Total BTEX	<0.300	0.300	06/05/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

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	06/06/2023	ND	432	108	400	0.00		

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	06/05/2023	ND	191	95.4	200	8.18	
DRO >C10-C28*	<10.0	10.0	06/05/2023	ND	183	91.4	200	4.11	
EXT DRO >C28-C36	<10.0	10.0	06/05/2023	ND					

Surrogate: 1-Chlorooctane 82.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ELITE ENVIRONMENTAL SERVICES
 MIKE HOLDER
 P.O. BOX 735
 GAINSVILLE TX, 76241
 Fax To:

Received: 06/05/2023
 Reported: 06/07/2023
 Project Name: STATE E 10 STRAWN
 Project Number: PENROC
 Project Location: LEA COUNTY, NM

Sampling Date: 06/05/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SW - 4 (H232827-07)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/05/2023	ND	2.05	103	2.00	1.95	
Toluene*	<0.050	0.050	06/05/2023	ND	2.04	102	2.00	1.86	
Ethylbenzene*	<0.050	0.050	06/05/2023	ND	1.97	98.4	2.00	0.638	
Total Xylenes*	<0.150	0.150	06/05/2023	ND	5.97	99.6	6.00	0.409	
Total BTEx	<0.300	0.300	06/05/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500CI-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	06/06/2023	ND	432	108	400	0.00		

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	06/05/2023	ND	213	106	200	27.1	
DRO >C10-C28*	<10.0	10.0	06/05/2023	ND	204	102	200	17.6	
EXT DRO >C28-C36	<10.0	10.0	06/05/2023	ND					

Surrogate: 1-Chlorooctane 85.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 86.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ELITE ENVIRONMENTAL SERVICES
 MIKE HOLDER
 P.O. BOX 735
 GAINSVILLE TX, 76241
 Fax To:

Received: 06/05/2023
 Reported: 06/07/2023
 Project Name: STATE E 10 STRAWN
 Project Number: PENROC
 Project Location: LEA COUNTY, NM

Sampling Date: 06/05/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SW - 5 (H232827-08)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/05/2023	ND	2.05	103	2.00	1.95		
Toluene*	<0.050	0.050	06/05/2023	ND	2.04	102	2.00	1.86		
Ethylbenzene*	<0.050	0.050	06/05/2023	ND	1.97	98.4	2.00	0.638		
Total Xylenes*	<0.150	0.150	06/05/2023	ND	5.97	99.6	6.00	0.409		
Total BTEx	<0.300	0.300	06/05/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	06/06/2023	ND	432	108	400	0.00	

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	06/07/2023	ND	213	106	200	27.1	
DRO >C10-C28*	<10.0	10.0	06/07/2023	ND	204	102	200	17.6	
EXT DRO >C28-C36	<10.0	10.0	06/07/2023	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 110 % 49.1-148

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ELITE ENVIRONMENTAL SERVICES
 MIKE HOLDER
 P.O. BOX 735
 GAINSVILLE TX, 76241
 Fax To:

Received: 06/05/2023
 Reported: 06/07/2023
 Project Name: STATE E 10 STRAWN
 Project Number: PENROC
 Project Location: LEA COUNTY, NM

Sampling Date: 06/05/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SW - 6 (H232827-09)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/05/2023	ND	2.05	103	2.00	1.95	
Toluene*	<0.050	0.050	06/05/2023	ND	2.04	102	2.00	1.86	
Ethylbenzene*	<0.050	0.050	06/05/2023	ND	1.97	98.4	2.00	0.638	
Total Xylenes*	<0.150	0.150	06/05/2023	ND	5.97	99.6	6.00	0.409	
Total BTEx	<0.300	0.300	06/05/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500CI-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	06/06/2023	ND	432	108	400	0.00	

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	06/05/2023	ND	213	106	200	27.1	
DRO >C10-C28*	<10.0	10.0	06/05/2023	ND	204	102	200	17.6	
EXT DRO >C28-C36	<10.0	10.0	06/05/2023	ND					

Surrogate: 1-Chlorooctane 79.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 82.4 % 49.1-148

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Notes and Definitions

QR-04	The RPD for the BS/BSD was outside of historical limits.
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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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: <u>Elite Environmental</u>		BILL TO		ANALYSIS REQUEST			
Project Manager: <u>Mike Holder</u>		P.O. #:					
Address: <u>P.O. Box 735</u>		Company: <u>Elite</u>					
City: <u>Gainesville</u>		Attn:					
State: <u>TX</u> Zip: <u>76241</u>		Address:					
Phone #: <u>918-740-2766</u> Fax #:		City:					
Project #: <u> </u>		State:					
Project Name: <u>State E 10 slumw</u>		Zip:					
Project Location: <u>Lea County, NM</u>		Phone #:					
Sampler Name: <u>Holder</u>		Fax #:					

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.			DATE	TIME	TPH	BTEX	Chlorides	EPA 4500
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :						
<u>H333837</u>	<u>SP-1-2'</u>	<u>C</u>	<u>1</u>	<u>X</u>								<u>6-5-23</u>	<u>10:00</u>	<u>X</u>				
	<u>SP-1-3'</u>	<u>C</u>	<u>1</u>	<u>X</u>								<u>6-5-23</u>	<u>10:09</u>	<u>X</u>				
	<u>SP-2-2'</u>	<u>C</u>	<u>1</u>	<u>X</u>								<u>6-5-23</u>	<u>10:08</u>	<u>X</u>				
	<u>SW-1</u>	<u>C</u>	<u>1</u>	<u>X</u>								<u>6-5-23</u>	<u>10:10</u>	<u>X</u>				
	<u>SW-2</u>	<u>C</u>	<u>1</u>	<u>X</u>								<u>6-5-23</u>	<u>10:15</u>	<u>X</u>				
	<u>SW-3</u>	<u>C</u>	<u>1</u>	<u>X</u>								<u>6-5-23</u>	<u>10:18</u>	<u>X</u>				
	<u>SW-4</u>	<u>C</u>	<u>1</u>	<u>X</u>								<u>6-5-23</u>	<u>10:22</u>	<u>X</u>				
	<u>SW-5</u>	<u>C</u>	<u>1</u>	<u>X</u>								<u>6-5-23</u>	<u>10:28</u>	<u>X</u>				
	<u>SW-6</u>	<u>C</u>	<u>1</u>	<u>X</u>								<u>6-5-23</u>	<u>10:30</u>	<u>X</u>				

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Relinquished By: <u>[Signature]</u>	Date: <u>6-5-23</u>	Received By: <u>[Signature]</u>	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #:
Relinquished By: <u>[Signature]</u>	Date: <u>6-5-23</u>	Received By: <u>[Signature]</u>	All Results are emailed. Please provide Email address:
REMARKS:			

Delivered By: (Circle One)	Observed Temp. °C	Sample Condition	CHECKED BY: (Initials)	Turnaround Time:	Standard	Bacteria (only)	Sample Condition
Sampler - UPS - Bus - Other:	Corrected Temp. °C	Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<u>Yes</u>	Thermometer ID #113	<u>Rush</u>	<input checked="" type="checkbox"/> Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No	Observed Temp. °C
PORT#000 K 5 3 077 18 22	<u>4.5</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<u>Yes</u>	Correction Factor -0.5°C	<u>2 DAY</u>	<input type="checkbox"/> Yes <input type="checkbox"/> No	Corrected Temp. °C

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



Appendix D: Photographic Documentation

Appendix D
Penroc Oil Corporation
State E 10 Strawn Tank Battery



Well sign 11/9/22.



View to S of test hole SP-1 installation (11/9/22).



View to E of test hole SP-2 installation (11/9/22).



View to W of test hole SP-3 installation (11/9/22).



View to W of test hole SP-4 installation (11/9/22).



View to E of treatment (5/8/23).

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

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

CONDITIONS

Action 232701

CONDITIONS

Operator: PENROC OIL CORP P.O. Box 2769 Hobbs, NM 882412769	OGRID: 17213
	Action Number: 232701
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	None	9/20/2023