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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	nAPP2310024728
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	>50 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☒ Yes ☐ No

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

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

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

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Page 2

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2310024728
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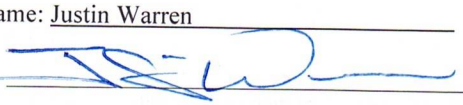
Facility ID	
Application ID	

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.

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: Justin Warren Title: Vice President of Operations

Signature:  Date: 5/1/23

email: jwarren@hpcnm.com Telephone: 575-703-3918

OCD Only

Received by: Jocelyn Harimon Date: 05/16/2023

Form C-141
Page 3

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2310024728
District RP	
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: Justin Warren Title: Vice President of Operations

Signature: [signature] Date: 5/1/23

Email: jwarren@hpcnm.com Telephone: 575-703-3918

OCD Only

Received by: Jocelyn Harimon Date: 05/16/2023

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

See text box below - NV

Signature: Nelson Velez Date: 08/04/2023

1. No further BTEX laboratory analysis is required from this point forward.
2. Soils removed and transported to an approved landfarm facility must be identified.
3. Site characterization supporting documentation to be submitted within the final closure report.
4. Submittal of final closure report must be completed within 60 days (October 3, 2023).

Harvard Petroleum Company, LLC

3737 Buffalo Speedway, Suite 1600
Houston, Texas 77098
Phone Number: 575-703-3918
Authorized Representative: Justin Warren
Incident Number: nAPP2310024728

Tom Cat 16, State 2

Site Assessment – Characterization & Remediation Plan
Lea County, New Mexico
Latitude: N 32.299038°
Longitude: W 103.685944°

1.0 FACILITY OR SPILL SITE CHARACTERIZATION

Water District #2	UNIT LETTER	SECTION	TOWNSHIP	RANGE	COUNTY
Roswell, NM	H	16	23S	32E	LEA

LOCATION AND ACCESS TO FACILITY		
	Responsible Party:	Harvard Petroleum Company, LLC
	Land Owner:	Unknown
	GPS coordinate of oil & chloride spill:	N 32.299038°
	GPS coordinate of oil & chloride spill:	W 103.685944°
	Facility GPS coordinate production well Tom Cat 16, State #2:	N 32.299150°
	Facility GPS coordinate production well Tom Cat 16, State #2:	W 103.686034°
	Driving directions from nearest city to spill:	Jal, New Mexico: From the intersection of Highway 128 and Highway 18 in Jal, New Mexico, travel west by northwest 31 miles on Highway 128. At entrance GPS coordinates listed below, exit right, and proceed northeast on lease road for approximately 3.8 miles, turn left and travel due north 1.8 miles to tank battery and well #2.
	Spill physical location from Highway 128:	The spill is located 4.6 miles from the center of Highway 128 to production facility.
	County, State:	Lea County, New Mexico
	Type of facility or site description:	Onshore oil and natural gas production well.
	What is the main access road to facility?	Highway 128
	Where is the closest marked intersection?	Highway 206 and Highway 18
	What is the composition of lease road?	Earthen Material & Caliche
	What is the condition of lease road?	Fair
	Is there a gate at the entrance?	No
	Is the gate open or locked?	N/A
	If locked, key or combination; list #	N/A
	Gate Entrance GPS Latitude:	N 32.240786°
	Gate Entrance GPS Longitude:	W 103.725189°
	Is there signage at the gate or entrance?	No
	What is the condition of the signage?	N/A
	Facility Elevation:	4065’
	How was the spill caused?	Flow line break from the gun-barrel to the storage tanks; oil spray area due to high winds.

	Spill area description:	The spill area is approximately 95-feet long and 54-feet wide.
	Adjacent land to this facility is used for:	Open Land & Oil Production
	The terrain for this facility is:	Flat to Moderate
	Spillage direction of flow:	South
	LOCATION AND FACILITY NOTES:	None

2.0 FACILITY OR SPILL SITE ASSESSMENT

On April 26th, 2023, COMM Engineering conducted an initial site assessment. The inspector found the spill area to be cleared of all heavy oil and produced water on the surface. Further investigation through boring and soil sampling revealed no wet soil containing visible oil or produced water from 0-inches to 15-inches under the surface. However, through on-site field testing, the inspector found chloride levels exceeding 3,000 ppm continuously over the spill area down to 6-inches in depth, and 12-inches in multiple areas within the spill site.

PHOTO #1; SPILL AREA:

2.0 FIELD TESTING AND SOIL SAMPLING

The assessment team completed (5) field test from 0-inches to 6-inches with the spill area and (2) field test from 7-inches to 12-inches; Google Earth image of the spill area below.

Chloride test showed readings in excess of 3,000 ppm. Further testing in select areas under the soil found native soil also containing chloride in excess of 3,000 ppm. Hand-augured soil bores were completed (TC-T1 to TC-T6 & (1) BG Sample within the release spill area was collected and taken to Cardinal Labs in Hobbs, New Mexico for analytical testing. Soil sampling purposes is for the development of the remediation plan only. After remediation composite confirmation samples will be collected from the bottom and sidewalls of the excavation from areas representing no more than two hundred (200) square feet. Those samples will be documented in the final closure report.

Google Earth Image #1; Tom Cat Soil Sample Area:

TOM CAT LEASE – SOIL SAMPLE AREA & GPS COORDINATES			
TEST BORE #	TEST BORE DEPTH	GPS LOCATION N	GPS LOCATION W
TC-T1	0 - 6-Inches	32.299285	-103.686431
TC-T1	7 - 12-Inches	32.299285	-103.686431
TC-T2	0-6-Inches	32.299329	-103.686389
TC-T3	0 - 6-Inches	32.299288	-103.686355
TC-T4	0 - 6-Inches	32.299334	-103.686324
TC-T5	0 - 6-Inches	32.299322	-103.686278
TC-T6	7 - 12-Inches	32.299290	-103.686829
BG=Background	0 – 3 Inches	32.299290	-103.686829

TOM CAT LEASE – REMEDIAITON PLAN CERTIFIED ANALYTICAL RESULTS										
SAMPLE ID	**DATE**	**DEPTH**	**BENZENE (mg/kg)**	**BTEX (mg/kg)**	**Chloride (mg/kg)**	**TPH C6-C36 (mg/kg)**	**GRO C6-C10 (mg/kg)**	**DRO C10-C28 (mg/kg)**	**GRO + DRO C6-C28 (mg/kg)**	**EXT DRO C28-C36 (mg/kg)**
TC-T1	9-13-2022	0 – 6”	<0.050	<0.300	1380	34.8	<10.0	34.8	34.8	<10.0
TC-T1	9-13-2022	7 – 12”	<0.050	<0.300	800	523.1	11.6	425	436.6	86.5
TC-T2	9-13-2022	0 – 6”	<0.050	<0.300	3800	3,254	<50	2790	2790	464
TC-T3	9-13-2022	0 – 6”	<0.050	<0.300	1040	<10.0	<10.0	<10.0	<10.0	<10.0
TC-T4	9-13-2022	0 – 6”	<0.050	<0.300	1200	1,102	<10.0	920	920	182
TC-T5	9-13-2022	0 – 6”	<0.050	<0.300	1040	554.9	12.7	468	480.7	74.2
TC-T6	9-13-2022	7 – 12”	<0.050	<0.300	3120	<10.0	<10.0	<10.0	<10.0	<10.0
BG	9-13-2022	0 – 3”	<0.050	<0.300	32	<10.0	<10.0	<10.0	<10.0	<10.0

PHOTO #2; TEST BORE EXAMPLE:

3.0 GROUND WATER DEPTH NEAR SPILL SITE

A search of groundwater and water depth databases maintained by the New Mexico Office of the State Engineer (NMOSE) and United States Geological Survey (USGS) was conducted to determine the horizontal distance to known water sources within a half-mile radius of the site. Probable groundwater depth was determined using data generated by numeric models based on available water well data and published information. Depth to groundwater information is provided in the attachments. However, due to off pad remediation we will be using the standards of Closure Criteria for Soil Impacted by Release, where the water table is < 50 feet, as defined in Table 1; 19.15.29 NMAC.

Minimum depth below any point within the horizontal boundary of the release to ground water less than 10,000 mg/1 TDS	Constituent	Method*	Limit**
< 50 feet	Chloride***	EPA 300.0 orSM4500Cl B	600 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	100 mg/kg
	BTEX	EPA SW-846Method8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846Method8021B or 8260B	10 mg/kg

4.0 PROPOSED REMEDIATION PLAN

Based on laboratory analytical results, site characteristics and field observations made during the initial site assessment, Harvard Petroleum Company, LLC proposes the following remediation activities designed to advance the Site toward an approved

- Utilizing heavy equipment and labor to excavate and remove the contaminated soil from the area north and northeast of the release point.
- Remove the surface oil spray in all areas impacted by wind-blown oil spillage.
- All excavated contaminated soil will be removed from the spill site and transported to a licensed soil disposal facility. No contaminated soil will be stockpiled at the location after final remediation.
- After excavation, the impacted area will be sampled to determine all NMOCD thresholds have been adhered to, with the ability to collect soil samples every 200 square feet.
- If side walls are created after excavating or trenching, all side walls will follow the same collection standards of every 200 square feet.

5.0 BACKFILL, RESTORATION, AND REVEGATATION PLAN

- After the contaminated areas have been fully tested and remediated, native soil only or similar base product will be used to backfill all excavated areas within containment.
- All excavated areas outside containment will be compacted and prepared for re-seeding the affected areas.
- No contaminated soil will be left on site and no stockpiles of caliche will be stored.

6.0 SOIL TESTING & ANALYSIS

- All field testing will be completed by on-site field personnel from COMM Engineering.
- All certified soil analysis will be completed by an approved and certified lab listed within the approved laboratories of the State of New Mexico.
- For the purpose of this remediation COMM Engineering will be utilizing the lab services of Cardinal Labs located in Hobbs, New Mexico.

6.0 CONFINES

COMM Engineering, to be known as COMM has prepared this Site Assessment Report and Proposed Remediation Plan to the best of its ability. No other warranty, expressed or implied, is made or intended. COMM has examined and relied upon documents reference in the report and on oral statements made by certain individuals. COMM has not conducted an independent examination of the facts contained in referenced materials and statements. COMM has presumed the genuineness of these documents and statements and that the information provided therein is true and accurate. COMM notes that the facts and conditions referenced in this report may change over time, and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report. This report has been prepared for the benefit of Harvard Petroleum Company, LLC. Use of the information contained in this report is prohibited without the consent of COMM and/or Harvard Petroleum Company, LLC.

This Site Assessment-Characteristic and Remediation Plan will be kept at the office for a minimum of five (5) years.

Plan completed on April 28, 2023.
Inspected, sampled, and survey performed by:

Signature
Kevin L. Robinson, CESCO, ESP-E, FLIR1, NORM CERTIFIED
Field Inspector

ATTACHMENTS:

1) Cardinal Labs – Analytical Soil Data
   101 E. Marland Street
   Hobbs, New Mexico 88240
   PH: 575-393-2326
2) Topographic Map
3) Aerial Proximity Map
4) Depth to Groundwater Information

CARDINAL Laboratories

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

May 02, 2023

KEVIN ROBINSON

COMM ENGINEERING

1319 W. PINHOOK, SUITE 400

LAFAYETTE, LA 70503

RE: TOM CAT #1

Enclosed are the results of analyses for samples received by the laboratory on 04/26/23 13:48.

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

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

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

COMM ENGINEERING
KEVIN ROBINSON
1319 W. PINHOOK, SUITE 400
LAFAYETTE LA, 70503
Fax To:

Received:	04/26/2023	Sampling Date:	04/25/2023
Reported:	05/02/2023	Sampling Type:	Soil
Project Name:	TOM CAT #1	Sampling Condition:	** (See Notes)
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EUNICE NM		

Sample ID: BH-TC-T-1 0-3' (H232042-01)

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	04/28/2023	ND	1.94	97.2	2.00	0.543	
Toluene*	<0.050	0.050	04/28/2023	ND	1.97	98.3	2.00	1.81	
Ethylbenzene*	<0.050	0.050	04/28/2023	ND	1.99	99.6	2.00	1.45	
Total Xylenes*	<0.150	0.150	04/28/2023	ND	6.06	101	6.00	0.0531	
Total BTEX	<0.300	0.300	04/28/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *102 %* *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	**1380**	16.0	04/28/2023	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	04/27/2023	ND	168	84.0	200	0.871	
DRO >C10-C28*	**34.8**	10.0	04/27/2023	ND	160	79.9	200	6.09	
EXT DRO >C28-C36	<10.0	10.0	04/27/2023	ND					

Surrogate: 1-Chlorooctane *88.1 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *88.8 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

COMM ENGINEERING
KEVIN ROBINSON
1319 W. PINHOOK, SUITE 400
LAFAYETTE LA, 70503
Fax To:

Received:	04/26/2023	Sampling Date:	04/25/2023
Reported:	05/02/2023	Sampling Type:	Soil
Project Name:	TOM CAT #1	Sampling Condition:	** (See Notes)
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EUNICE NM		

Sample ID: BH-TC-T-2 0-3' (H232042-02)

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	04/28/2023	ND	1.94	97.2	2.00	0.543	
Toluene*	<0.050	0.050	04/28/2023	ND	1.97	98.3	2.00	1.81	
Ethylbenzene*	<0.050	0.050	04/28/2023	ND	1.99	99.6	2.00	1.45	
Total Xylenes*	<0.150	0.150	04/28/2023	ND	6.06	101	6.00	0.0531	
Total BTEX	<0.300	0.300	04/28/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *109 %* *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	**3800**	16.0	04/28/2023	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*	<50.0	50.0	04/28/2023	ND	168	84.0	200	0.871	
DRO >C10-C28*	**2790**	50.0	04/28/2023	ND	160	79.9	200	6.09	
EXT DRO >C28-C36	**464**	50.0	04/28/2023	ND					

Surrogate: 1-Chlorooctane *92.3 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *96.2 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

COMM ENGINEERING
KEVIN ROBINSON
1319 W. PINHOOK, SUITE 400
LAFAYETTE LA, 70503
Fax To:

Received:	04/26/2023	Sampling Date:	04/25/2023
Reported:	05/02/2023	Sampling Type:	Soil
Project Name:	TOM CAT #1	Sampling Condition:	** (See Notes)
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EUNICE NM		

Sample ID: BH-TC-T-3 0-3' (H232042-03)

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	04/28/2023	ND	1.94	97.2	2.00	0.543	
Toluene*	<0.050	0.050	04/28/2023	ND	1.97	98.3	2.00	1.81	
Ethylbenzene*	<0.050	0.050	04/28/2023	ND	1.99	99.6	2.00	1.45	
Total Xylenes*	<0.150	0.150	04/28/2023	ND	6.06	101	6.00	0.0531	
Total BTEX	<0.300	0.300	04/28/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *101 %* *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	**1040**	16.0	04/28/2023	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	04/27/2023	ND	168	84.0	200	0.871	
DRO >C10-C28*	<10.0	10.0	04/27/2023	ND	160	79.9	200	6.09	
EXT DRO >C28-C36	<10.0	10.0	04/27/2023	ND					

Surrogate: 1-Chlorooctane *105 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *106 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

COMM ENGINEERING
KEVIN ROBINSON
1319 W. PINHOOK, SUITE 400
LAFAYETTE LA, 70503
Fax To:

Received:	04/26/2023	Sampling Date:	04/25/2023
Reported:	05/02/2023	Sampling Type:	Soil
Project Name:	TOM CAT #1	Sampling Condition:	** (See Notes)
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EUNICE NM		

Sample ID: BH-TC-T-4 0-3' (H232042-04)

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	04/28/2023	ND	1.94	97.2	2.00	0.543	
Toluene*	<0.050	0.050	04/28/2023	ND	1.97	98.3	2.00	1.81	
Ethylbenzene*	<0.050	0.050	04/28/2023	ND	1.99	99.6	2.00	1.45	
Total Xylenes*	<0.150	0.150	04/28/2023	ND	6.06	101	6.00	0.0531	
Total BTEX	<0.300	0.300	04/28/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *103 %* *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	**1200**	16.0	04/28/2023	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	04/27/2023	ND	168	84.0	200	0.871	
DRO >C10-C28*	**920**	10.0	04/27/2023	ND	160	79.9	200	6.09	
EXT DRO >C28-C36	**182**	10.0	04/27/2023	ND					

Surrogate: 1-Chlorooctane *91.1 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *89.3 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

COMM ENGINEERING
KEVIN ROBINSON
1319 W. PINHOOK, SUITE 400
LAFAYETTE LA, 70503
Fax To:

Received:	04/26/2023	Sampling Date:	04/25/2023
Reported:	05/02/2023	Sampling Type:	Soil
Project Name:	TOM CAT #1	Sampling Condition:	** (See Notes)
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EUNICE NM		

Sample ID: BH-TC-T-5 0-3' (H232042-05)

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	04/28/2023	ND	1.94	97.2	2.00	0.543	
Toluene*	<0.050	0.050	04/28/2023	ND	1.97	98.3	2.00	1.81	
Ethylbenzene*	<0.050	0.050	04/28/2023	ND	1.99	99.6	2.00	1.45	
Total Xylenes*	<0.150	0.150	04/28/2023	ND	6.06	101	6.00	0.0531	
Total BTEX	<0.300	0.300	04/28/2023	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	**1040**	16.0	04/28/2023	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*	**12.7**	10.0	04/28/2023	ND	168	84.0	200	0.871	
DRO >C10-C28*	**468**	10.0	04/28/2023	ND	160	79.9	200	6.09	
EXT DRO >C28-C36	**74.2**	10.0	04/28/2023	ND					

Surrogate: 1-Chlorooctane *113 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *103 %* *49.1-148*

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

COMM ENGINEERING
KEVIN ROBINSON
1319 W. PINHOOK, SUITE 400
LAFAYETTE LA, 70503
Fax To:

Received:	04/26/2023	Sampling Date:	04/25/2023
Reported:	05/02/2023	Sampling Type:	Soil
Project Name:	TOM CAT #1	Sampling Condition:	** (See Notes)
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EUNICE NM		

Sample ID: BH-TC-T-6 0-3' (H232042-06)

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	04/28/2023	ND	1.94	97.2	2.00	0.543	
Toluene*	<0.050	0.050	04/28/2023	ND	1.97	98.3	2.00	1.81	
Ethylbenzene*	<0.050	0.050	04/28/2023	ND	1.99	99.6	2.00	1.45	
Total Xylenes*	<0.150	0.150	04/28/2023	ND	6.06	101	6.00	0.0531	
Total BTEX	<0.300	0.300	04/28/2023	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	**3120**	16.0	04/28/2023	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	04/28/2023	ND	168	84.0	200	0.871	
DRO >C10-C28*	<10.0	10.0	04/28/2023	ND	160	79.9	200	6.09	
EXT DRO >C28-C36	<10.0	10.0	04/28/2023	ND					

Surrogate: 1-Chlorooctane *86.6 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *90.6 %* *49.1-148*

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

COMM ENGINEERING
KEVIN ROBINSON
1319 W. PINHOOK, SUITE 400
LAFAYETTE LA, 70503
Fax To:

Received:	04/26/2023	Sampling Date:	04/25/2023
Reported:	05/02/2023	Sampling Type:	Soil
Project Name:	TOM CAT #1	Sampling Condition:	** (See Notes)
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EUNICE NM		

Sample ID: BH-TC-T-BACKGROUND (H232042-07)

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	04/28/2023	ND	1.94	97.2	2.00	0.543	
Toluene*	<0.050	0.050	04/28/2023	ND	1.97	98.3	2.00	1.81	
Ethylbenzene*	<0.050	0.050	04/28/2023	ND	1.99	99.6	2.00	1.45	
Total Xylenes*	<0.150	0.150	04/28/2023	ND	6.06	101	6.00	0.0531	
Total BTEX	<0.300	0.300	04/28/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *102 %* *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	04/28/2023	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	04/28/2023	ND	168	84.0	200	0.871	
DRO >C10-C28*	<10.0	10.0	04/28/2023	ND	160	79.9	200	6.09	
EXT DRO >C28-C36	<10.0	10.0	04/28/2023	ND					

Surrogate: 1-Chlorooctane *108 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *112 %* *49.1-148*

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

COMM ENGINEERING
KEVIN ROBINSON
1319 W. PINHOOK, SUITE 400
LAFAYETTE LA, 70503
Fax To:

Received:	04/26/2023	Sampling Date:	04/25/2023
Reported:	05/02/2023	Sampling Type:	Soil
Project Name:	TOM CAT #1	Sampling Condition:	** (See Notes)
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EUNICE NM		

Sample ID: BH-TC-T-1 6-9' (H232042-08)

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	04/28/2023	ND	1.94	97.2	2.00	0.543	
Toluene*	<0.050	0.050	04/28/2023	ND	1.97	98.3	2.00	1.81	
Ethylbenzene*	<0.050	0.050	04/28/2023	ND	1.99	99.6	2.00	1.45	
Total Xylenes*	<0.150	0.150	04/28/2023	ND	6.06	101	6.00	0.0531	
Total BTEX	<0.300	0.300	04/28/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *108 %* *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	**800**	16.0	04/28/2023	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*	**11.6**	10.0	04/28/2023	ND	168	84.0	200	0.871	
DRO >C10-C28*	**425**	10.0	04/28/2023	ND	160	79.9	200	6.09	
EXT DRO >C28-C36	**86.5**	10.0	04/28/2023	ND					

Surrogate: 1-Chlorooctane *89.7 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *87.5 %* *49.1-148*

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Comm Engineering
Project Manager:	K. Robinson
Address:	
City:	State: Zip:
Phone #:	Fax #:
Project #:	Project Owner:
Project Name:	TOM CAT #1
Project Location:	Eunice NM
Sampler Name:	Kevin Robinson

BILL TO

P.O. #:	
Company:	
Attn:	
Address:	
City:	
State: Zip:	
Phone #:	
Fax #:	

FOR LAB USE ONLY: H232042

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	ANALYSIS REQUEST: Full Btex TPH-Cl + Before
1	BH-TC-T-1 0-3'		1			X									X
2	" " T-2		1			X									X
3	" " T-3		1			X									X
4	BH-TC-T-4		1			X									X
5	BH-TC-T-5		1			X									X
6	BH-TC-T-6		1			X									X
7	BH-TC-BACKgrnd		1			X									X
* 8	BH-TC-T-1 6-9		1			X									X

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

Relinquished By: [signature]	Date: 4/26/23 Time: 1348	Received By: Tamara Oldaker
Relinquished By:	Date: Time:	Received By:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C 15.5 Corrected Temp. °C 14.9	Sample Condition Cool Intact ☐ Yes ☑ Yes ☑ No ☐ No
CHECKED BY: (Initials) TO		

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

REMARKS: * added extra recieved Sample TO 4/26/23

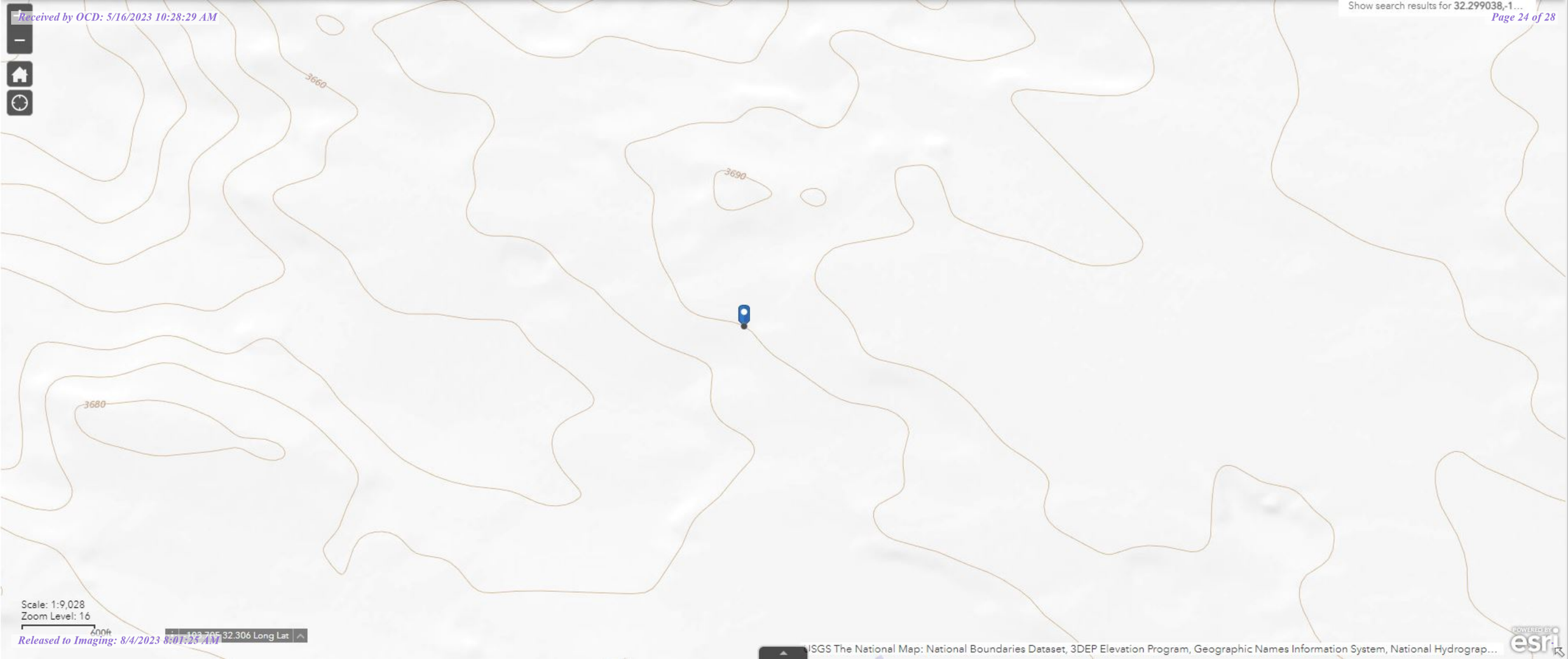
Turnaround Time: Standard ☑ Rush ☐

Thermometer ID #113
Correction Factor -0.6°C

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

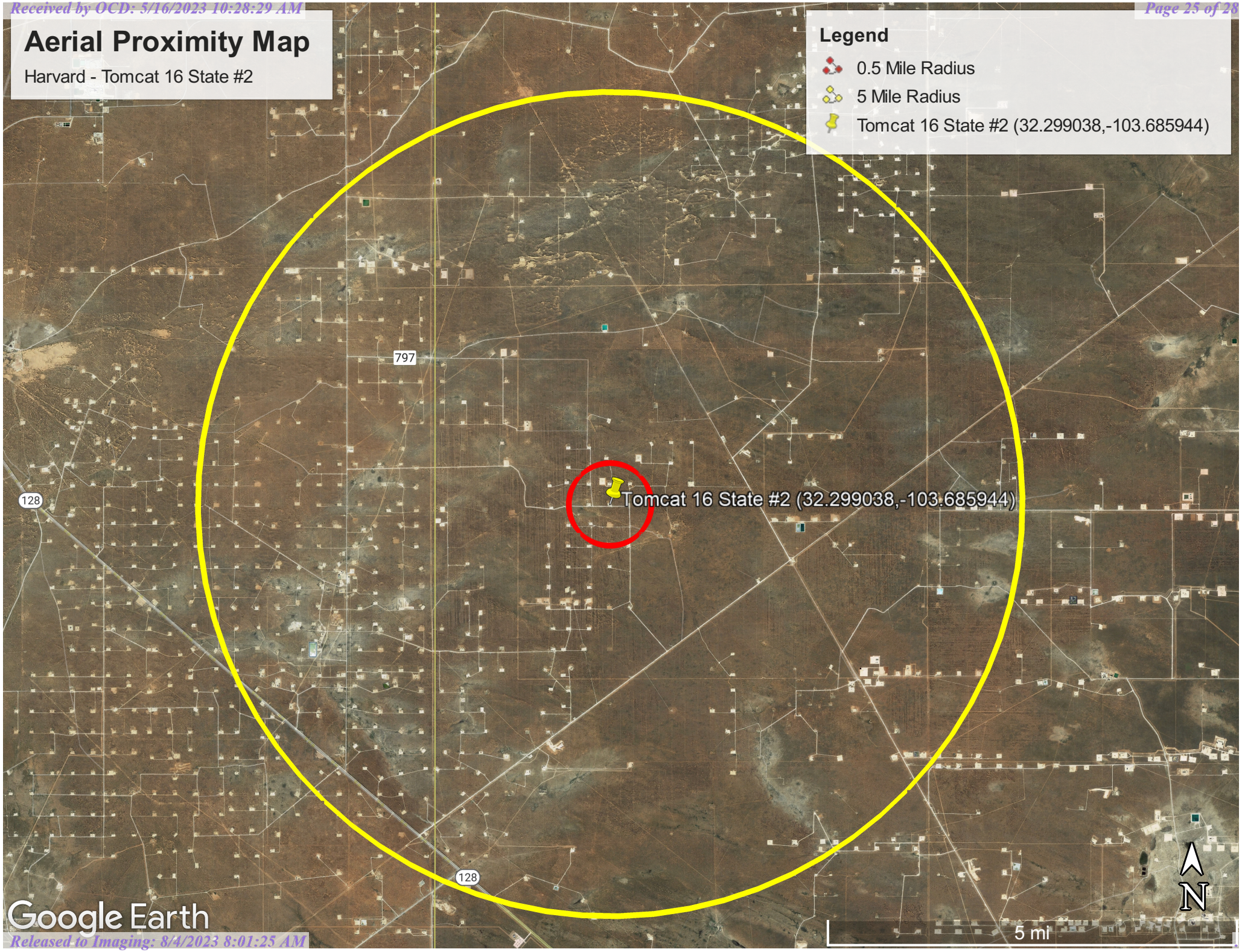
FORM-006 R 3.3 07/18/22

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


Show search results for 32.299038,-1...
3660
3690
3680
Scale: 1:9,028
Zoom Level: 16
200ft
103.705 32.306 Long Lat
USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrograp...
esri

Aerial Proximity Map

Harvard - Tomcat 16 State #2



New Mexico Office of the State Engineer
Wells with Well Log Information

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(in feet)

POD Number	POD Sub-basin Code	County	Source	q 6416	q 4	q	Sec	Tws	Rng	X	Y	Distance	Start Date	Finish Date	Log File Date	Depth Well	Depth Water	Driller	License Number
C 04712 POD2	CUB	LE		4	4	4	17	23S	32E	623332	3574331	387	03/09/2023	03/09/2023	04/04/2023	55		JASON MALEY	1833
C 03851 POD1	CUB	LE	Artesian	3	3	4	20	23S	32E	622880	3572660	1879	08/19/2015	10/02/2015	11/10/2015	1392	713	STEWART, RANDAL P.	1723
C 04712 POD3	CUB	ED		4	1	2	24	23S	31E	619651	3573877	4095	03/09/2023	03/09/2023	04/04/2023	55		JASON MALEY	1833
C 04712 POD1	CUB	LE		1	4	1	31	23S	32E	620917	3570289	4926	03/09/2023	03/09/2023	04/04/2023	55		JASON MALEY	1833
C 03555 POD1	C	LE	Shallow	2	2	1	05	24S	32E	622748	3569233	5198	10/20/2013	10/21/2013	11/07/2013	600	380	JOHN SIRMAN	1654
C 04712 POD4	CUB	ED		1	4	3	14	23S	31E	617535	3574316	6184	03/09/2023	03/09/2023	04/04/2023	55		JASON MALEY	1833
C 02258	C	ED			3	2	26	23S	31E	618055	3571853*	6186	09/18/1992	09/18/1992	09/25/1992	662		CORKY GLENN	421
C 04663 POD1	CUB	LE		3	1	2	31	22S	32E	621181	3580341	6515	09/01/2022	09/01/2022	09/20/2022	110		RUSSELL SOUTHERLAND	1184
C 03749 POD1	CUB	ED	Shallow		2	2	15	23S	31E	616974	3575662	6874	07/10/2014	08/06/2014	09/11/2014	865	639	RANDY STEWART	331
C 02348	C	ED	Shallow	1	4	3	26	23S	31E	617648	3571068	6898	10/31/2013	11/01/2013	11/07/2013	700	430	JOHN SIRMAN	1654
C 04672 POD 1	CUB	ED		2	1	4	01	24S	31E	619762	3568286	7233	09/01/2022	09/01/2022	09/26/2022	110		RUSSELL SOUTHERLAND	1184
C 04598 POD1	CUB	LE		2	3	1	29	22S	32E	622069	3581570	7415	03/30/2022	03/30/2022	04/08/2022	56		JACKIE D ATKINS	1249

Record Count: 12

UTMNAD83 Radius Search (in meters):

Easting (X): 623719.77 **Northing (Y):** 3574340.75 **Radius:** 8046.7

***UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer
Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
NA	C 04712 POD2	4	4	4	17	23S	32E	623332	3574331

Driller License:	1833	**Driller Company:**	VISION RESOURCES, INC		
Driller Name:	JASON MALEY				
Drill Start Date:	03/09/2023	**Drill Finish Date:**	03/09/2023	**Plug Date:**	03/14/2023
Log File Date:	04/04/2023	**PCW Rcv Date:**		**Source:**	
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:		**Depth Well:**	55 feet	**Depth Water:**	

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 217244

CONDITIONS

Operator:	OGRID:
HARVARD PETROLEUM COMPANY, LLC P.O. Box 936 Roswell, NM 88202	10155
	Action Number: 217244
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	1. No further BTEX laboratory analysis is required from this point forward. 2. Soils removed and transported to an approved landfarm facility must be identified. 3. Site characterization supporting documentation to be submitted within the final closure report. 4. Submittal of final closure report must be completed within 60 days (October 3, 2023).	8/4/2023