



May 13, 2020

Oil Conservation Division, District 1  
1625 N. French Dr.  
Hobbs, NM 88240

Kelsey Wade  
Bureau of Land Management, CFO  
620 E. Green Street  
Carlsbad, NM 88220

**Closure Report**  
**Black Pearl 1 Federal #002H**  
**API#: 30-015-42293**  
**Tracking#: NCS2003551447**  
**DOR: December 15, 2019**  
**GPS: 32.60912 -103.50884**  
**Unit Letter A, Section 01, Township 20 South, Range 34 East**  
**Lea County, New Mexico**

To Whom It May Concern,

COG Operating, LLC (COG) is pleased to submit the following closure report in response to a release that occurred at the Black Pearl 1 Federal #002H. The release was located in Unit Letter A, Section 01, Township 20 South and Range 34 East in Eddy County, New Mexico. More specifically the latitude and longitude for the release are 32.60912 North and -103.50884 West.

## **BACKGROUND**

The release was discovered on December 15, 2016 and a C-141 initial report was submitted to the New Mexico Oil Conservation Division (NMOCD) and the Bureau of Land Management (BLM). The failure of a valve on the well head resulted in light overspray of oil and produced water onto the well pad. The release consisted of approximately five (5) barrels (bbls) of produced water and five (5) bbls of oil.

Immediately following the release, a backhoe was utilized to scrape the impacted area for site stabilization and containment.

## GROUNDWATER AND REGULATORY FRAMEWORK

According to the United States Geological Survey (USGS) groundwater in the project vicinity is approximately fifty-six (56) feet below ground surface (BGS). The water well information is shown in Appendix B.

A risk based evaluation and site determinations were performed in accordance to the New Mexico Oil Conservation Division (NMOCD) Rule (Title 19 Chapter 15 Part 29) for releases on oil and gas development and production in New Mexico (effective August 14, 2018). According to the site characterization evaluation the affected area no receptors (water wells, karst playas, water course, lake beds or ordinance boundaries) were located within each specific boundaries or distance from the site. The groundwater data and the site characterization evaluation data is summarized in Appendix B. The delineation and closure criteria are listed below:

### General Site Characterization and Groundwater:

Site Characterization	Average Groundwater Depth (ft.)
None	56

### Delineation and Closure Criteria:

Recommended Remedial Action Levels (RRALs)	
Chlorides	10,000 mg/kg
TPH (GRO and DRO and MRO)	2,500 mg/kg
Benzene	10 mg/kg
Total BTEX	50 mg/kg

## REMEDIAL ACTIONS

- The impacted area was scraped as part of the initial response, site stabilization efforts as directed in 19.15.29.8.
- All of the material from the initial response activities was hauled to an NMOCD approved solid waste disposal facility.
- A site assessment was conducted in order to investigate possible soil impacts from the release. Based on the analytical results from the site assessment it was determined that all of the impacted soil above Table 1 closure criteria was removed during the site stabilization efforts.

**SITE RECLAMATION AND RESTORATION**

All of the fluid remained on the well pad. No reclamation activities will be required at this site.

**CLOSURE REQUEST**

COG Operating, LLC respectfully requests that the New Mexico Oil Conservation Division and the Bureau of Land Management grant closure approval for the Black Pearl 1 Federal #002H incident that occurred on December 15, 2019.

Should you have any questions or concerns please do not hesitate to contact me.

Sincerely,



Sheldon L. Hitchcock  
HSE Coordinator  
[shitchcock@concho.com](mailto:shitchcock@concho.com)

# FIGURES

December 16, 2019

# Black Peral 1 Federal #002H



**Legend**

-  Overspray Area
-  Sample Location

Black Peral #1 Federal #002H



# TABLES

**Table 1**  
**COG Operating LLC.**  
**Black Peral 1 Federal #002H**  
**Lea County, New Mexico**

Sample ID	Sample Depth (ft)	Sample Date	Soil Status		TPH (mg/kg)						Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	
			In-Situ	Removed	GRO	DRO	MRO	Total	GRO	DRO				Total
<b>NMOCD RRAL Limits (mg/kg)</b>					<b>-</b>	<b>-</b>	<b>-</b>	<b>2,500</b>	<b>-</b>	<b>-</b>	<b>1,000</b>	<b>10</b>	<b>50</b>	<b>20,000</b>
S-1	0-0.5	1/15/2020	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.50	<0.300	64
S-1	1-1.5	1/15/2020	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.50	<0.300	32
S-1	2-2.5	1/15/2020	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.50	<0.300	16
S-1	3-3.5	1/15/2020	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.50	<0.300	192
S-2	0-0.5	1/15/2020	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.50	<0.300	224
S-2	1-1.5	1/15/2020	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.50	<0.300	464
S-2	2-2.5	1/15/2020	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.50	<0.300	320
S-2	3-3.5	1/15/2020	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.50	<0.300	480
S-3	0-0.5	1/15/2020	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.50	<0.300	208
S-3	1-1.5	1/15/2020	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.50	<0.300	352
S-3	2-2.5	1/15/2020	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.50	<0.300	480
S-3	3-3.5	1/15/2020	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.50	<0.300	496
S-3	4-4.5	1/15/2020	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.50	<0.300	480

# APPENDIX A

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	
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

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

### Location of Release Source

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
(NAD 83 in decimal degrees to 5 decimal places)

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

Unit Letter	Section	Township	Range	County

Surface Owner:  State  Federal  Tribal  Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

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

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

Cause of Release

State of New Mexico  
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

### Initial Response

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

<input type="checkbox"/> The source of the release has been stopped. <input type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.
If all the actions described above have <u>not</u> been undertaken, explain why:
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.
Printed Name: _____ Title: _____ Signature: <u>Sheldon Nitam</u> Date: _____ email: _____ Telephone: _____
<b><u>OCD Only</u></b> Received by: _____ Date: _____

Incident ID	
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?	_____ (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input 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 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 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 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 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 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 type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input 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.

State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	
District RP	
Facility ID	
Application ID	

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

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

Signature: Sheldon Nitan Date: \_\_\_\_\_

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

**OCD Only**

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

Incident ID	
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: \_\_\_\_\_ Title: \_\_\_\_\_

Signature: Sheldon Nitan Date: \_\_\_\_\_

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

**OCD Only**

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

- Approved       Approved with Attached Conditions of Approval       Denied       Deferral Approved

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

Incident ID	
District RP	
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: \_\_\_\_\_ Title: \_\_\_\_\_

Signature: Sheldon Hittman Date: \_\_\_\_\_

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

**OCD Only**

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

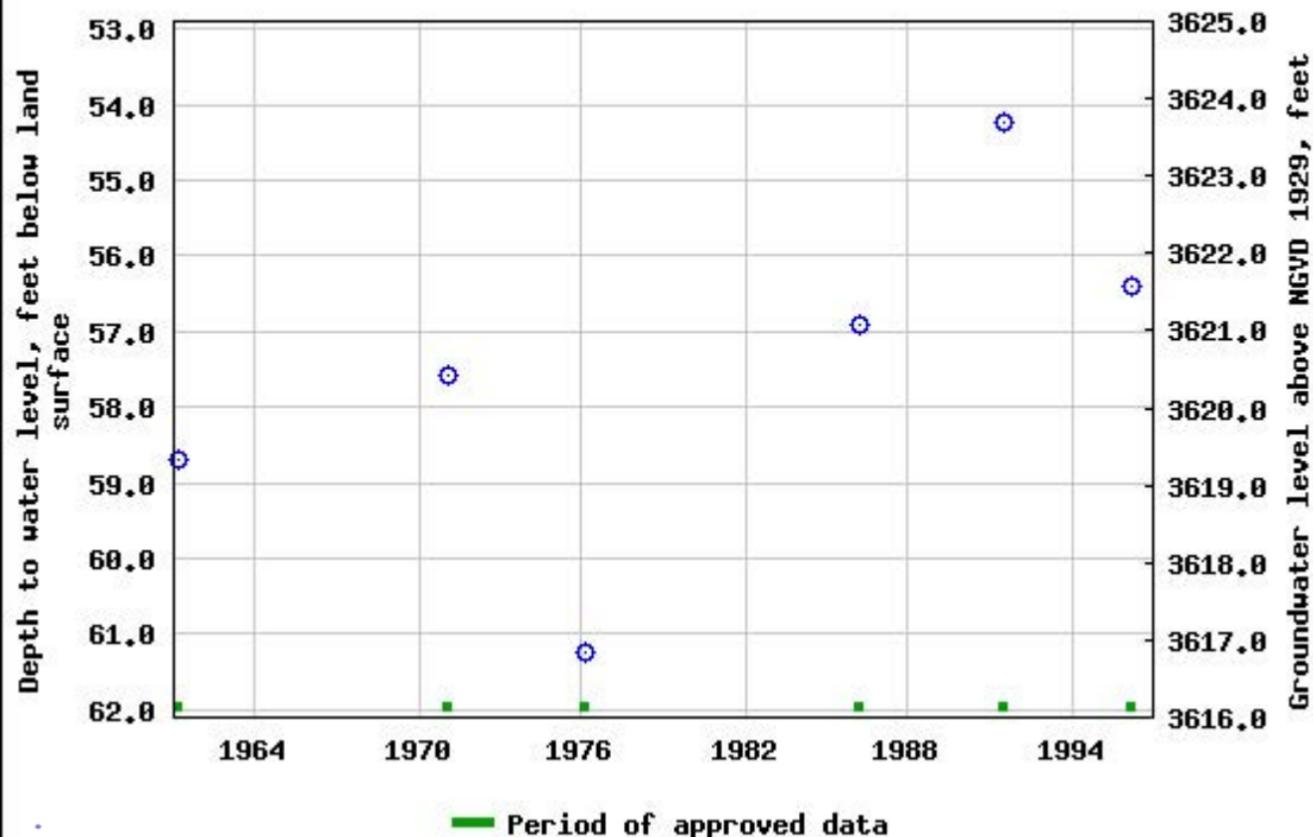
Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance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

Closure Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

# APPENDIX B

## USGS 323536103301101 20S.35E.06.331332





# APPENDIX C



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

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January 21, 2020

SHELDON HITCHCOCK  
COG OPERATING  
P. O. BOX 1630  
ARTESIA, NM 88210

RE: BLACK PEARL 1 FED #2

Enclosed are the results of analyses for samples received by the laboratory on 01/15/20 12:55.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. 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](http://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 style.

Celey D. Keene  
Lab Director/Quality Manager



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

**Analytical Results For:**

COG OPERATING  
SHELDON HITCHCOCK  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received:	01/15/2020	Sampling Date:	01/15/2020
Reported:	01/21/2020	Sampling Type:	Soil
Project Name:	BLACK PEARL 1 FED #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

**Sample ID: S- 1 0-0.5' (H000139-01)**

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	01/16/2020	ND	1.72	86.0	2.00	16.1	
Toluene*	<0.050	0.050	01/16/2020	ND	1.75	87.7	2.00	15.4	
Ethylbenzene*	<0.050	0.050	01/16/2020	ND	1.77	88.3	2.00	16.8	
Total Xylenes*	<0.150	0.150	01/16/2020	ND	5.15	85.9	6.00	16.9	
Total BTEX	<0.300	0.300	01/16/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.2 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	01/16/2020	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	01/17/2020	ND	219	110	200	0.276	
DRO >C10-C28*	<10.0	10.0	01/17/2020	ND	236	118	200	0.947	
EXT DRO >C28-C36	<10.0	10.0	01/17/2020	ND					

Surrogate: 1-Chlorooctane 98.8 % 41-142

Surrogate: 1-Chlorooctadecane 102 % 37.6-147

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.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

COG OPERATING  
 SHELDON HITCHCOCK  
 P. O. BOX 1630  
 ARTESIA NM, 88210  
 Fax To: NONE

Received:	01/15/2020	Sampling Date:	01/15/2020
Reported:	01/21/2020	Sampling Type:	Soil
Project Name:	BLACK PEARL 1 FED #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

**Sample ID: S- 1 1-1.5' (H000139-02)**

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	01/16/2020	ND	1.72	86.0	2.00	16.1		
Toluene*	<0.050	0.050	01/16/2020	ND	1.75	87.7	2.00	15.4		
Ethylbenzene*	<0.050	0.050	01/16/2020	ND	1.77	88.3	2.00	16.8		
Total Xylenes*	<0.150	0.150	01/16/2020	ND	5.15	85.9	6.00	16.9		
Total BTEX	<0.300	0.300	01/16/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.6 % 73.3-129

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	01/16/2020	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	01/17/2020	ND	219	110	200	0.276		
DRO >C10-C28*	<10.0	10.0	01/17/2020	ND	236	118	200	0.947		
EXT DRO >C28-C36	<10.0	10.0	01/17/2020	ND						

Surrogate: 1-Chlorooctane 96.4 % 41-142

Surrogate: 1-Chlorooctadecane 98.8 % 37.6-147

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.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

COG OPERATING  
 SHELDON HITCHCOCK  
 P. O. BOX 1630  
 ARTESIA NM, 88210  
 Fax To: NONE

Received:	01/15/2020	Sampling Date:	01/15/2020
Reported:	01/21/2020	Sampling Type:	Soil
Project Name:	BLACK PEARL 1 FED #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

**Sample ID: S- 1 2-2.5' (H000139-03)**

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	01/16/2020	ND	1.72	86.0	2.00	16.1		
Toluene*	<0.050	0.050	01/16/2020	ND	1.75	87.7	2.00	15.4		
Ethylbenzene*	<0.050	0.050	01/16/2020	ND	1.77	88.3	2.00	16.8		
Total Xylenes*	<0.150	0.150	01/16/2020	ND	5.15	85.9	6.00	16.9		
Total BTEX	<0.300	0.300	01/16/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.6 % 73.3-129

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	01/16/2020	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	01/17/2020	ND	219	110	200	0.276		
DRO >C10-C28*	<10.0	10.0	01/17/2020	ND	236	118	200	0.947		
EXT DRO >C28-C36	<10.0	10.0	01/17/2020	ND						

Surrogate: 1-Chlorooctane 99.2 % 41-142

Surrogate: 1-Chlorooctadecane 103 % 37.6-147

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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:**

COG OPERATING  
 SHELDON HITCHCOCK  
 P. O. BOX 1630  
 ARTESIA NM, 88210  
 Fax To: NONE

Received:	01/15/2020	Sampling Date:	01/15/2020
Reported:	01/21/2020	Sampling Type:	Soil
Project Name:	BLACK PEARL 1 FED #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

**Sample ID: S- 1 3-3.5' (H000139-04)**

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	01/16/2020	ND	1.72	86.0	2.00	16.1		
Toluene*	<0.050	0.050	01/16/2020	ND	1.75	87.7	2.00	15.4		
Ethylbenzene*	<0.050	0.050	01/16/2020	ND	1.77	88.3	2.00	16.8		
Total Xylenes*	<0.150	0.150	01/16/2020	ND	5.15	85.9	6.00	16.9		
Total BTEX	<0.300	0.300	01/16/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	192	16.0	01/16/2020	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	01/17/2020	ND	219	110	200	0.276		
DRO >C10-C28*	<10.0	10.0	01/17/2020	ND	236	118	200	0.947		
EXT DRO >C28-C36	<10.0	10.0	01/17/2020	ND						

Surrogate: 1-Chlorooctane 100 % 41-142

Surrogate: 1-Chlorooctadecane 103 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

COG OPERATING  
 SHELDON HITCHCOCK  
 P. O. BOX 1630  
 ARTESIA NM, 88210  
 Fax To: NONE

Received:	01/15/2020	Sampling Date:	01/15/2020
Reported:	01/21/2020	Sampling Type:	Soil
Project Name:	BLACK PEARL 1 FED #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

**Sample ID: S- 2 0-0.5' (H000139-05)**

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	01/16/2020	ND	1.72	86.0	2.00	16.1		
Toluene*	<0.050	0.050	01/16/2020	ND	1.75	87.7	2.00	15.4		
Ethylbenzene*	<0.050	0.050	01/16/2020	ND	1.77	88.3	2.00	16.8		
Total Xylenes*	<0.150	0.150	01/16/2020	ND	5.15	85.9	6.00	16.9		
Total BTEX	<0.300	0.300	01/16/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.5 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	224	16.0	01/16/2020	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	01/17/2020	ND	219	110	200	0.276		
DRO >C10-C28*	<10.0	10.0	01/17/2020	ND	236	118	200	0.947		
EXT DRO >C28-C36	<10.0	10.0	01/17/2020	ND						

Surrogate: 1-Chlorooctane 94.7 % 41-142

Surrogate: 1-Chlorooctadecane 98.0 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

COG OPERATING  
SHELDON HITCHCOCK  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received:	01/15/2020	Sampling Date:	01/15/2020
Reported:	01/21/2020	Sampling Type:	Soil
Project Name:	BLACK PEARL 1 FED #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

**Sample ID: S- 2 1-1.5' (H000139-06)**

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	01/20/2020	ND	2.03	101	2.00	6.41	
Toluene*	<0.050	0.050	01/20/2020	ND	1.99	99.5	2.00	6.82	
Ethylbenzene*	<0.050	0.050	01/20/2020	ND	2.02	101	2.00	6.58	
Total Xylenes*	<0.150	0.150	01/20/2020	ND	5.85	97.5	6.00	5.67	
Total BTEX	<0.300	0.300	01/20/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.6 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	464	16.0	01/16/2020	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	01/17/2020	ND	219	110	200	0.276	
DRO >C10-C28*	<10.0	10.0	01/17/2020	ND	236	118	200	0.947	
EXT DRO >C28-C36	<10.0	10.0	01/17/2020	ND					

Surrogate: 1-Chlorooctane 93.6 % 41-142

Surrogate: 1-Chlorooctadecane 97.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

COG OPERATING  
SHELDON HITCHCOCK  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received:	01/15/2020	Sampling Date:	01/15/2020
Reported:	01/21/2020	Sampling Type:	Soil
Project Name:	BLACK PEARL 1 FED #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

**Sample ID: S- 2 2-2.5' (H000139-07)**

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	01/20/2020	ND	2.03	101	2.00	6.41		
Toluene*	<0.050	0.050	01/20/2020	ND	1.99	99.5	2.00	6.82		
Ethylbenzene*	<0.050	0.050	01/20/2020	ND	2.02	101	2.00	6.58		
Total Xylenes*	<0.150	0.150	01/20/2020	ND	5.85	97.5	6.00	5.67		
Total BTEX	<0.300	0.300	01/20/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.3 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	320	16.0	01/16/2020	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	01/17/2020	ND	219	110	200	0.276		
DRO >C10-C28*	<10.0	10.0	01/17/2020	ND	236	118	200	0.947		
EXT DRO >C28-C36	<10.0	10.0	01/17/2020	ND						

Surrogate: 1-Chlorooctane 97.4 % 41-142

Surrogate: 1-Chlorooctadecane 102 % 37.6-147

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**Analytical Results For:**

COG OPERATING  
SHELDON HITCHCOCK  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received:	01/15/2020	Sampling Date:	01/15/2020
Reported:	01/21/2020	Sampling Type:	Soil
Project Name:	BLACK PEARL 1 FED #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

**Sample ID: S- 2 3-3.5' (H000139-08)**

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	01/20/2020	ND	2.03	101	2.00	6.41		
Toluene*	<0.050	0.050	01/20/2020	ND	1.99	99.5	2.00	6.82		
Ethylbenzene*	<0.050	0.050	01/20/2020	ND	2.02	101	2.00	6.58		
Total Xylenes*	<0.150	0.150	01/20/2020	ND	5.85	97.5	6.00	5.67		
Total BTEX	<0.300	0.300	01/20/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.4 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	480	16.0	01/16/2020	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	01/17/2020	ND	219	110	200	0.276		
DRO >C10-C28*	<10.0	10.0	01/17/2020	ND	236	118	200	0.947		
EXT DRO >C28-C36	<10.0	10.0	01/17/2020	ND						

Surrogate: 1-Chlorooctane 99.7 % 41-142

Surrogate: 1-Chlorooctadecane 103 % 37.6-147

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**Analytical Results For:**

COG OPERATING  
SHELDON HITCHCOCK  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received:	01/15/2020	Sampling Date:	01/15/2020
Reported:	01/21/2020	Sampling Type:	Soil
Project Name:	BLACK PEARL 1 FED #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

**Sample ID: S- 3 0-0.5' (H000139-09)**

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	01/20/2020	ND	2.03	101	2.00	6.41		
Toluene*	<0.050	0.050	01/20/2020	ND	1.99	99.5	2.00	6.82		
Ethylbenzene*	<0.050	0.050	01/20/2020	ND	2.02	101	2.00	6.58		
Total Xylenes*	<0.150	0.150	01/20/2020	ND	5.85	97.5	6.00	5.67		
Total BTEX	<0.300	0.300	01/20/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.7 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	208	16.0	01/16/2020	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	01/18/2020	ND	219	110	200	0.276		
DRO >C10-C28*	<10.0	10.0	01/18/2020	ND	236	118	200	0.947		
EXT DRO >C28-C36	<10.0	10.0	01/18/2020	ND						

Surrogate: 1-Chlorooctane 96.0 % 41-142

Surrogate: 1-Chlorooctadecane 98.9 % 37.6-147

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**Analytical Results For:**

COG OPERATING  
 SHELDON HITCHCOCK  
 P. O. BOX 1630  
 ARTESIA NM, 88210  
 Fax To: NONE

Received:	01/15/2020	Sampling Date:	01/15/2020
Reported:	01/21/2020	Sampling Type:	Soil
Project Name:	BLACK PEARL 1 FED #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

**Sample ID: S- 3 1-1.5' (H000139-10)**

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	01/20/2020	ND	2.03	101	2.00	6.41		
Toluene*	<0.050	0.050	01/20/2020	ND	1.99	99.5	2.00	6.82		
Ethylbenzene*	<0.050	0.050	01/20/2020	ND	2.02	101	2.00	6.58		
Total Xylenes*	<0.150	0.150	01/20/2020	ND	5.85	97.5	6.00	5.67		
Total BTEX	<0.300	0.300	01/20/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.2 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	352	16.0	01/16/2020	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	01/18/2020	ND	219	110	200	0.276		
DRO >C10-C28*	<10.0	10.0	01/18/2020	ND	236	118	200	0.947		
EXT DRO >C28-C36	<10.0	10.0	01/18/2020	ND						

Surrogate: 1-Chlorooctane 100 % 41-142

Surrogate: 1-Chlorooctadecane 104 % 37.6-147

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**Analytical Results For:**

COG OPERATING  
 SHELDON HITCHCOCK  
 P. O. BOX 1630  
 ARTESIA NM, 88210  
 Fax To: NONE

Received:	01/15/2020	Sampling Date:	01/15/2020
Reported:	01/21/2020	Sampling Type:	Soil
Project Name:	BLACK PEARL 1 FED #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

**Sample ID: S- 3 2-2.5' (H000139-11)**

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	01/20/2020	ND	2.03	101	2.00	6.41		
Toluene*	<0.050	0.050	01/20/2020	ND	1.99	99.5	2.00	6.82		
Ethylbenzene*	<0.050	0.050	01/20/2020	ND	2.02	101	2.00	6.58		
Total Xylenes*	<0.150	0.150	01/20/2020	ND	5.85	97.5	6.00	5.67		
Total BTEX	<0.300	0.300	01/20/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.1 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	480	16.0	01/16/2020	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	01/18/2020	ND	224	112	200	0.417		
DRO >C10-C28*	<10.0	10.0	01/18/2020	ND	229	115	200	2.47		
EXT DRO >C28-C36	<10.0	10.0	01/18/2020	ND						

Surrogate: 1-Chlorooctane 97.3 % 41-142

Surrogate: 1-Chlorooctadecane 98.2 % 37.6-147

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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:**

COG OPERATING  
 SHELDON HITCHCOCK  
 P. O. BOX 1630  
 ARTESIA NM, 88210  
 Fax To: NONE

Received:	01/15/2020	Sampling Date:	01/15/2020
Reported:	01/21/2020	Sampling Type:	Soil
Project Name:	BLACK PEARL 1 FED #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

**Sample ID: S- 3 3-3.5' (H000139-12)**

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	01/20/2020	ND	2.03	101	2.00	6.41		
Toluene*	<0.050	0.050	01/20/2020	ND	1.99	99.5	2.00	6.82		
Ethylbenzene*	<0.050	0.050	01/20/2020	ND	2.02	101	2.00	6.58		
Total Xylenes*	<0.150	0.150	01/20/2020	ND	5.85	97.5	6.00	5.67		
Total BTEX	<0.300	0.300	01/20/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.1 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	496	16.0	01/16/2020	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	01/18/2020	ND	224	112	200	0.417		
DRO >C10-C28*	<10.0	10.0	01/18/2020	ND	229	115	200	2.47		
EXT DRO >C28-C36	<10.0	10.0	01/18/2020	ND						

Surrogate: 1-Chlorooctane 97.1 % 41-142

Surrogate: 1-Chlorooctadecane 100 % 37.6-147

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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:**

COG OPERATING  
SHELDON HITCHCOCK  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received:	01/15/2020	Sampling Date:	01/15/2020
Reported:	01/21/2020	Sampling Type:	Soil
Project Name:	BLACK PEARL 1 FED #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

**Sample ID: S- 3 4-4.5' (H000139-13)**

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	01/20/2020	ND	2.03	101	2.00	6.41		
Toluene*	<0.050	0.050	01/20/2020	ND	1.99	99.5	2.00	6.82		
Ethylbenzene*	<0.050	0.050	01/20/2020	ND	2.02	101	2.00	6.58		
Total Xylenes*	<0.150	0.150	01/20/2020	ND	5.85	97.5	6.00	5.67		
Total BTEX	<0.300	0.300	01/20/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.2 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	480	16.0	01/16/2020	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	01/18/2020	ND	224	112	200	0.417		
DRO >C10-C28*	<10.0	10.0	01/18/2020	ND	229	115	200	2.47		
EXT DRO >C28-C36	<10.0	10.0	01/18/2020	ND						

Surrogate: 1-Chlorooctane 102 % 41-142

Surrogate: 1-Chlorooctadecane 107 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

- QR-02            The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
  
- 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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\*=Accredited Analyte

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

---

Celey D. Keene, Lab Director/Quality Manager



One Concho Center/600 Illinois Avenue/Midland, Texas  
Tel (432) 683-7443

Analysis Request of Chain of Custody Record

Client Name: COG-Artesia Site Manager: Sheldon Hitchcock

Project Name: Black Pearl Feed #2

Project Location: (county, state) Lea, NM

Invoice to: Sheldon Hitchcock

Receiving Laboratory: Cardinal Sampler Name: Sheldon Hitchcock

Comments:

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX		PRESERVATIVE METHOD			# CONTAINERS	(C)omposite/(G)rab
		YEAR: 2020	DATE	TIME	WATER	SOIL	HCL	HNO <sub>3</sub>		
1	5-1 0-0.5	1/15	11:00	X					1	G
2	5-1 1-1.5		11:02						1	G
3	5-1 2-2.5		11:04						1	G
4	5-1 3-3.5		11:06						1	G
5	5-2 0-0.5		11:10						1	G
6	5-2 1-1.5		11:12						1	G
7	5-2 2-2.5		11:14						1	G
8	5-2 3-3.5		11:17						1	G
9	5-3 0-0.5		11:30						1	G
10	5-3 1-1.5		11:32						1	G

Relinquished by: Sheldon Aciri Date: 5/15/20 Time: 12:55

Relinquished by: Received by: Date: Time:

**ANALYSIS REQUEST**  
(Circle or Specify Method No.)

TPH 8015M (GRO - DRO - MRO)	X
BTEX 8021B	X
Chloride	X
Hold	

**LAB USE ONLY**  
Sample Temperature: #113  
3.0°C

**REMARKS:**  
 RUSH: Same Day 24 hr 48 hr 72 hr  
 Rush Charges Authorized  
 Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking # \_\_\_\_\_

ORIGINAL COPY

Analysis Request of Chain of Custody Record



One Concho Center/600/111011  
Avenue/Midland, Texas  
Tel (432) 693-7443

Client Name: COG-Artesia Site Manager: Sheldon Hitchcock

Project Name: Black Pearl Fed #2

Project Location: (county, state) Leary, NM Project #:

Invoice to: Sheldon Hitchcock

Receiving Laboratory: Cardinal Sampler Name: Sheldon Hitchcock

Comments:

LAB USE ONLY  
H000139  
LAB #

SAMPLE IDENTIFICATION	SAMPLING		MATRIX		PRESERVATIVE METHOD			# CONTAINERS	(C)omposite/(G)rab
	YEAR: 2020	DATE	TIME	WATER	SOIL	HCL	HNO <sub>3</sub>		
11 5-3 2-2.5	1/15	11:39	X					1	G
12 5-3 3-3.5	1/15	11:30	X					1	G
13 5-3 4-4.5	1/15	11:38	X					1	G

Relinquished by: *Sheldon Hitchcock* Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Relinquished by: *Sheldon Hitchcock* Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

ANALYSIS REQUEST  
(Circle or Specify Method No.)

TPH 8015M ( GRO - DRO - MRO)	<input checked="" type="checkbox"/>
BTEX 8021B	<input checked="" type="checkbox"/>
Chloride	<input checked="" type="checkbox"/>
Hold	<input type="checkbox"/>

LAB USE ONLY  
 Sample Temperature: #113  
 3.0°C  
 REMARKS:  
 RUSH: Same Day 24 hr 48 hr 72 hr  
 Rush Charges Authorized  
 Special Report Limits or TRRP Report

ORIGINAL COPY

# APPENDIX D

SW

240

W

270

NW

300

330

☉ 286°W (T) ☉ 32°36'32"N, 103°30'31"W ±16ft ▲ 3698ft

**DANGER**

EXIT STARTS  
AUTOMATICALLY  
ANY TIME

**DANGER**

**NO  
SMOKING**

**DANGER**

UNAUTHORIZED  
PERSONNEL ALLOWED  
AT ANY TIME

**COG OPERATING LLC**  
BLACK PEARL 1 FEDERAL #2H  
UL B SEC.1-T20S-R34E  
190' FNL & 1090' FEL  
LEA COUNTY, NM  
API #30-025-42293  
NMNM-128366

13 May 2020, 14:49:30

SW

W

NW

210

240

270

300

330

☉ 276°W (T) ● 32°36'33"N, 103°30'29"W ±16ft ▲ 3698ft



13 May 2020, 14:49:11