



DELINEATION WORKPLAN

PREMIER OIL AND GAS – PARKE A TRACT 1 #16 (Leak Date: 3/16/17)

**RP # 2RP-4264
API NO. 30-015-30457**

This delineation workplan and remediation proposal addresses the release associated with RP # 2RP-4264.

The following information includes:

1. Scaled digital site map with spill area demarcated and leak point identified along with sample point locations and areas of remediation at appropriate depths.
2. GPS information for sample points and sample methodology
3. Depth to groundwater information (i.e., pdf of OSE search results and/or copy of Chevron groundwater trend map).
4. Laboratory analysis results summary table and original laboratory analysis reports
5. A copy of the initial C-141
6. Potentially other pertinent information as necessary for site specific purposes.

Based on the information included in this package and the NMOCD guidelines, the following remediation is proposed:

Premier Oil and Gas will excavate the spill area as depicted on the following site diagram. The area near SP1 and SP2 (blue shade on diagram) will be excavated to a depth of 3 feet. The area near SP3 – SP5 (pink shade on diagram) will require zero remediation activities.

The entire site will then be backfilled with clean soil and revegetated (if warranted) to the standards of the appropriate regulatory agency or private surface owner.

All excavated materials will be disposed of at an NMOCD-approved disposal facility.

Premier Oil & Gas, Parke A Tract 1 #16

Leak date: 03/16/2017
Eddy County, NM
API# 30-015-30457
2RP-4264

Legend

- 3 ft Excavation
- Cardinal sample points
- Sample points
- Leak Area
- No remediation necessary



Premier Oil & Gas, Parke A Tract 1 #16

Sample points, hand auger/backhoe

SP1, N 32.81733 W-103.96745

SP2, N 32.81739 W-103.96744

SP3, N 32.81736 W-103.96751

SP4, N 32.81745 W-103.96745

SP5, N 32.81751 W-103.96747

NORTH, N 32.81755 W-103.96748

SOUTH, N 32.81728 W-103.96750

EAST, N 32.81740 W-103.96736

WEST, N 32.81737 W-103.96755

Premier Oil & Gas, Parke A Tract 1 #16

U/L L, Section 22, T17S, R30E

Groundwater: 300'





New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

(quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

UTMNAD83 Radius Search (in meters):

Easting (X): 596766

Northing (Y): 3631603

Radius: 1700

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

11/9/17 10:30 AM

WATER COLUMN/ AVERAGE
DEPTH TO WATER

Public Land Survey System (PLSS)

☐

Q64:

Q16:

NW

Q4:

SW

Sec:

22

Tws:

17S

Rng:

30E

State Plane Coordinate System - NAD27

☐

X:

0

ft

Y:

0

ft

Zone:

State Plane Coordinate System - NAD83

☐

X:

0

ft

Y:

0

ft

Zone:

Degrees/Minutes/Seconds

☐

Longitude (X):

Degrees:

0

°

Minutes:

0

'

Seconds:

0

"

Latitude (Y):

Degrees:

0

°

Minutes:

0

'

Seconds:

0

"

UTM - NAD27

☐

Easting (X):

0

mtrs

Northing (Y):

0

mtrs

Zone:

SUBMIT

All Conversion Results are displayed as NAD 1983 UTM Zone 13

Easting (X):

596766.0

mtrs

Northing (Y):

3631603.0

mtrs

~~ Please keep screen open to copy UTM values for Reports. ~~

Laboratory Analytical Results Summary
Parke A Tract 1 #16

Analyte	Method	Sample ID Date	SP1 @ SURFACE mg/kg	SP1 @ 1' mg/kg	SP1 @ 2' mg/kg	SP1 @ 3' mg/kg	SP1 @ 4' mg/kg	SP1 @ 5' mg/kg	SP1 @ 10' mg/kg
Benzene	BTEX 8021B		mg/kg	11/2/17	11/2/17	11/2/17	11/2/17	11/2/17	11/2/17
			mg/kg	11/2/17	11/2/17	11/2/17	11/2/17	11/2/17	11/2/17
Benzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	n/a	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	n/a	n/a	n/a	n/a	n/a
Chloride	SM4500C-B		6000	1920	1680	1280	496	160	240
GRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a	n/a	n/a
DRO	TPH 8015M		531	14.3	n/a	n/a	n/a	n/a	n/a
EXT DRO	TPH 8015M		212	19.8	n/a	n/a	n/a	n/a	n/a

Analyte	Method	Sample ID Date	SP2 @ SURFACE mg/kg	SP2 @ 1' mg/kg	SP2 @ 2' mg/kg	SP2 @ 3' mg/kg	SP2 @ 4' mg/kg	SP2 @ 5' mg/kg	SP2 @ 10' mg/kg
Benzene	BTEX 8021B		mg/kg	11/2/17	11/2/17	11/2/17	11/2/17	11/2/17	11/3/17
			mg/kg	11/2/17	11/2/17	11/2/17	11/2/17	11/2/17	11/3/17
Benzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	n/a	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	n/a	n/a	n/a	n/a	n/a
Chloride	SM4500C-B		432	2600	1330	1090	992	176	192
GRO	TPH 8015M		12.9	<10.0	n/a	n/a	n/a	n/a	n/a
DRO	TPH 8015M		338	<10.0	n/a	n/a	n/a	n/a	n/a
EXT DRO	TPH 8015M		149	18.8	n/a	n/a	n/a	n/a	n/a

Analyte	Method	Sample ID Date	SP3 @ SURFACE mg/kg	SP3 @ 1' mg/kg	SP3 @ 6' mg/kg
Benzene	BTEX 8021B		mg/kg	11/3/17	11/3/17
			mg/kg	11/3/17	11/3/17
Benzene	BTEX 8021B		<0.050	<0.050	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	n/a
Chloride	SM4500C-B		80	64	48
GRO	TPH 8015M		<10.0	<10.0	n/a
DRO	TPH 8015M		<10.0	<10.0	n/a
EXT DRO	TPH 8015M		<10.0	<10.0	n/a

Analyte	Method	Sample ID Date	SP4 @ SURFACE mg/kg	SP4 @ 5' mg/kg
Benzene	BTEX 8021B		mg/kg	11/3/17
			mg/kg	11/3/17
Benzene	BTEX 8021B		<0.050	<0.050
Toluene	BTEX 8021B		0.054	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<0.050
Total Xylenes	BTEX 8021B		<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	<0.300
Chloride	SM4500C-B		32	32
GRO	TPH 8015M		<10.0	<10.0
DRO	TPH 8015M		<10.0	<10.0
EXT DRO	TPH 8015M		<10.0	<10.0

Analyte	Method	Sample ID Date	SP5 @ SURFACE mg/kg	SP5 @ 5' mg/kg
Benzene	BTEX 8021B		mg/kg	11/3/17
			mg/kg	11/3/17
Benzene	BTEX 8021B		<0.050	<0.050
Toluene	BTEX 8021B		<0.050	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<0.050
Total Xylenes	BTEX 8021B		<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	<0.300
Chloride	SM4500C-B		<16.0	48
GRO	TPH 8015M		<10.0	<10.0
DRO	TPH 8015M		<10.0	<10.0
EXT DRO	TPH 8015M		<10.0	<10.0

Cardinal points	Sample ID Date	NORTH @ SURFACE mg/kg	EAST @ SURFACE mg/kg	WEST @ SURFACE mg/kg	SOUTH @ SURFACE mg/kg
Analyte		11/3/17	11/3/17	11/3/17	11/3/17
		mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B	<0.050	<0.050	<0.050	<0.050
Toluene	BTEX 8021B	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	BTEX 8021B	<0.050	<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B	<0.150	<0.150	<0.150	<0.150
Total BTEX	BTEX 8021B	<0.300	<0.300	<0.300	<0.300
Chloride	SM4500C-B	32	256	48	32
GRO	TPH 8015M	<10.0	<10.0	<10.0	<10.0
DRO	TPH 8015M	<10.0	<10.0	<10.0	<10.0
EXT DRO	TPH 8015M	<10.0	<10.0	10.2	<10.0

November 14, 2017

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: PARKE A TRACT 1 #16

Enclosed are the results of analyses for samples received by the laboratory on 11/07/17 14:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. 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,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received:	11/07/2017	Sampling Date:	11/02/2017
Reported:	11/14/2017	Sampling Type:	Soil
Project Name:	PARKE A TRACT 1 #16	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PREMIER OIL - LOCO HILLS NM		

Sample ID: SP 1 @ SURFACE (H703094-01)

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	11/10/2017	ND	2.00	99.8	2.00	0.460	
Toluene*	<0.050	0.050	11/10/2017	ND	2.02	101	2.00	0.775	
Ethylbenzene*	<0.050	0.050	11/10/2017	ND	1.97	98.4	2.00	0.492	
Total Xylenes*	<0.150	0.150	11/10/2017	ND	6.24	104	6.00	0.154	
Total BTX	<0.300	0.300	11/10/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6000	16.0	11/09/2017	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	11/09/2017	ND	188	93.9	200	5.29	
DRO >C10-C28	531	10.0	11/09/2017	ND	200	100	200	0.964	
EXT DRO >C28-C36	212	10.0	11/09/2017	ND					

Surrogate: 1-Chlorooctane 63.2 % 28.3-164

Surrogate: 1-Chlorooctadecane 95.5 % 34.7-157

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

Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received:	11/07/2017	Sampling Date:	11/02/2017
Reported:	11/14/2017	Sampling Type:	Soil
Project Name:	PARKE A TRACT 1 #16	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PREMIER OIL - LOCO HILLS NM		

Sample ID: SP 1 @ 1 (H703094-02)

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	11/11/2017	ND	1.92	95.8	2.00	0.207		
Toluene*	<0.050	0.050	11/11/2017	ND	1.92	96.1	2.00	0.438		
Ethylbenzene*	<0.050	0.050	11/11/2017	ND	1.88	94.2	2.00	0.927		
Total Xylenes*	<0.150	0.150	11/11/2017	ND	5.97	99.4	6.00	0.622		
Total BTEX	<0.300	0.300	11/11/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1920	16.0	11/09/2017	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	11/09/2017	ND	188	93.9	200	5.29	
DRO >C10-C28	14.3	10.0	11/09/2017	ND	200	100	200	0.964	
EXT DRO >C28-C36	19.8	10.0	11/09/2017	ND					

Surrogate: 1-Chlorooctane 83.8 % 28.3-164

Surrogate: 1-Chlorooctadecane 83.2 % 34.7-157

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

Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received:	11/07/2017	Sampling Date:	11/02/2017
Reported:	11/14/2017	Sampling Type:	Soil
Project Name:	PARKE A TRACT 1 #16	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PREMIER OIL - LOCO HILLS NM		

Sample ID: SP 1 @ 2 (H703094-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1680	16.0	11/09/2017	ND	416	104	400	0.00		

Sample ID: SP 1 @ 3 (H703094-04)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1280	16.0	11/09/2017	ND	432	108	400	0.00	

Sample ID: SP 1 @ 4 (H703094-05)

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	11/09/2017	ND	432	108	400	0.00	

Sample ID: SP 1 @ 5 (H703094-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	11/09/2017	ND	432	108	400	0.00		

Sample ID: SP 1 @ 10 (H703094-07)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	11/09/2017	ND	432	108	400	0.00	

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

Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received:	11/07/2017	Sampling Date:	11/02/2017
Reported:	11/14/2017	Sampling Type:	Soil
Project Name:	PARKE A TRACT 1 #16	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PREMIER OIL - LOCO HILLS NM		

Sample ID: SP 2 @ SURFACE (H703094-08)

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	11/11/2017	ND	1.92	95.8	2.00	0.207	
Toluene*	<0.050	0.050	11/11/2017	ND	1.92	96.1	2.00	0.438	
Ethylbenzene*	<0.050	0.050	11/11/2017	ND	1.88	94.2	2.00	0.927	
Total Xylenes*	<0.150	0.150	11/11/2017	ND	5.97	99.4	6.00	0.622	
Total BTEX	<0.300	0.300	11/11/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	432	16.0	11/09/2017	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	12.9	10.0	11/12/2017	ND	189	94.3	200	0.353	
DRO >C10-C28	338	10.0	11/12/2017	ND	189	94.5	200	1.29	
EXT DRO >C28-C36	149	10.0	11/12/2017	ND					

Surrogate: 1-Chlorooctane 43.6 % 28.3-164

Surrogate: 1-Chlorooctadecane 50.8 % 34.7-157

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

Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received:	11/07/2017	Sampling Date:	11/02/2017
Reported:	11/14/2017	Sampling Type:	Soil
Project Name:	PARKE A TRACT 1 #16	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PREMIER OIL - LOCO HILLS NM		

Sample ID: SP 2 @ 1 (H703094-09)

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	11/11/2017	ND	1.92	95.8	2.00	0.207		
Toluene*	<0.050	0.050	11/11/2017	ND	1.92	96.1	2.00	0.438		
Ethylbenzene*	<0.050	0.050	11/11/2017	ND	1.88	94.2	2.00	0.927		
Total Xylenes*	<0.150	0.150	11/11/2017	ND	5.97	99.4	6.00	0.622		
Total BTEX	<0.300	0.300	11/11/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2600	16.0	11/09/2017	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	11/12/2017	ND	189	94.3	200	0.353	
DRO >C10-C28	<10.0	10.0	11/12/2017	ND	189	94.5	200	1.29	
EXT DRO >C28-C36	18.8	10.0	11/12/2017	ND					

Surrogate: 1-Chlorooctane 105 % 28.3-164

Surrogate: 1-Chlorooctadecane 106 % 34.7-157

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

Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received:	11/07/2017	Sampling Date:	11/02/2017
Reported:	11/14/2017	Sampling Type:	Soil
Project Name:	PARKE A TRACT 1 #16	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PREMIER OIL - LOCO HILLS NM		

Sample ID: SP 2 @ 2 (H703094-10)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1330	16.0	11/09/2017	ND	432	108	400	0.00	

Sample ID: SP 2 @ 3 (H703094-11)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1090	16.0	11/09/2017	ND	432	108	400	0.00	

Sample ID: SP 2 @ 4 (H703094-12)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	992	16.0	11/09/2017	ND	432	108	400	0.00		

Sample ID: SP 2 @ 5 (H703094-13)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	11/09/2017	ND	432	108	400	0.00	

Sample ID: SP 2 @ 10 (H703094-14)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	11/09/2017	ND	432	108	400	0.00	

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

Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received: 11/07/2017
Reported: 11/14/2017
Project Name: PARKE A TRACT 1 #16
Project Number: NONE GIVEN
Project Location: PREMIER OIL - LOCO HILLS NM

Sampling Date: 11/03/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ SURFACE (H703094-15)

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	11/11/2017	ND	1.92	95.8	2.00	0.207		
Toluene*	<0.050	0.050	11/11/2017	ND	1.92	96.1	2.00	0.438		
Ethylbenzene*	<0.050	0.050	11/11/2017	ND	1.88	94.2	2.00	0.927		
Total Xylenes*	<0.150	0.150	11/11/2017	ND	5.97	99.4	6.00	0.622		
Total BTX	<0.300	0.300	11/11/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	11/09/2017	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	11/12/2017	ND	189	94.3	200	0.353	
DRO >C10-C28	<10.0	10.0	11/12/2017	ND	189	94.5	200	1.29	
EXT DRO >C28-C36	<10.0	10.0	11/12/2017	ND					

Surrogate: 1-Chlorooctane 96.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 91.2 % 34.7-157

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

Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received: 11/07/2017
Reported: 11/14/2017
Project Name: PARKE A TRACT 1 #16
Project Number: NONE GIVEN
Project Location: PREMIER OIL - LOCO HILLS NM

Sampling Date: 11/03/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ 1 (H703094-16)

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	11/11/2017	ND	1.92	95.8	2.00	0.207		
Toluene*	<0.050	0.050	11/11/2017	ND	1.92	96.1	2.00	0.438		
Ethylbenzene*	<0.050	0.050	11/11/2017	ND	1.88	94.2	2.00	0.927		
Total Xylenes*	<0.150	0.150	11/11/2017	ND	5.97	99.4	6.00	0.622		
Total BTEx	<0.300	0.300	11/11/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 72-148

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	11/09/2017	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	11/12/2017	ND	189	94.3	200	0.353	
DRO >C10-C28	<10.0	10.0	11/12/2017	ND	189	94.5	200	1.29	
EXT DRO >C28-C36	<10.0	10.0	11/12/2017	ND					

Surrogate: 1-Chlorooctane 108 % 28.3-164

Surrogate: 1-Chlorooctadecane 102 % 34.7-157

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

Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received: 11/07/2017
Reported: 11/14/2017
Project Name: PARKE A TRACT 1 #16
Project Number: NONE GIVEN
Project Location: PREMIER OIL - LOCO HILLS NM

Sampling Date: 11/03/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ 6 (H703094-17)**Chloride, SM4500Cl-B****mg/kg****Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	11/09/2017	ND	432	108	400	0.00	

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

Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received: 11/07/2017
Reported: 11/14/2017
Project Name: PARKE A TRACT 1 #16
Project Number: NONE GIVEN
Project Location: PREMIER OIL - LOCO HILLS NM

Sampling Date: 11/03/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 4 @ SURFACE (H703094-18)

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	11/11/2017	ND	1.92	95.8	2.00	0.207	
Toluene*	0.054	0.050	11/11/2017	ND	1.92	96.1	2.00	0.438	
Ethylbenzene*	<0.050	0.050	11/11/2017	ND	1.88	94.2	2.00	0.927	
Total Xylenes*	<0.150	0.150	11/11/2017	ND	5.97	99.4	6.00	0.622	
Total BTEX	<0.300	0.300	11/11/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 72-148

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	11/09/2017	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	11/12/2017	ND	189	94.3	200	0.353	
DRO >C10-C28	<10.0	10.0	11/12/2017	ND	189	94.5	200	1.29	
EXT DRO >C28-C36	<10.0	10.0	11/12/2017	ND					

Surrogate: 1-Chlorooctane 99.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 93.6 % 34.7-157

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

Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received:	11/07/2017	Sampling Date:	11/03/2017
Reported:	11/14/2017	Sampling Type:	Soil
Project Name:	PARKE A TRACT 1 #16	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PREMIER OIL - LOCO HILLS NM		

Sample ID: SP 4 @ 5 (H703094-19)

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	11/11/2017	ND	1.92	95.8	2.00	0.207		
Toluene*	<0.050	0.050	11/11/2017	ND	1.92	96.1	2.00	0.438		
Ethylbenzene*	<0.050	0.050	11/11/2017	ND	1.88	94.2	2.00	0.927		
Total Xylenes*	<0.150	0.150	11/11/2017	ND	5.97	99.4	6.00	0.622		
Total BTEx	<0.300	0.300	11/11/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 72-148

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	11/09/2017	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	11/12/2017	ND	189	94.3	200	0.353	
DRO >C10-C28	<10.0	10.0	11/12/2017	ND	189	94.5	200	1.29	
EXT DRO >C28-C36	<10.0	10.0	11/12/2017	ND					

Surrogate: 1-Chlorooctane 97.4 % 28.3-164

Surrogate: 1-Chlorooctadecane 90.2 % 34.7-157

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

Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received: 11/07/2017
Reported: 11/14/2017
Project Name: PARKE A TRACT 1 #16
Project Number: NONE GIVEN
Project Location: PREMIER OIL - LOCO HILLS NM

Sampling Date: 11/03/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 5 @ SURFACE (H703094-20)

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	11/11/2017	ND	1.92	95.8	2.00	0.207		
Toluene*	<0.050	0.050	11/11/2017	ND	1.92	96.1	2.00	0.438		
Ethylbenzene*	<0.050	0.050	11/11/2017	ND	1.88	94.2	2.00	0.927		
Total Xylenes*	<0.150	0.150	11/11/2017	ND	5.97	99.4	6.00	0.622		
Total BTX	<0.300	0.300	11/11/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 72-148

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	11/09/2017	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	11/12/2017	ND	189	94.3	200	0.353	
DRO >C10-C28	<10.0	10.0	11/12/2017	ND	189	94.5	200	1.29	
EXT DRO >C28-C36	<10.0	10.0	11/12/2017	ND					

Surrogate: 1-Chlorooctane 90.4 % 28.3-164

Surrogate: 1-Chlorooctadecane 86.2 % 34.7-157

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

Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received:	11/07/2017	Sampling Date:	11/03/2017
Reported:	11/14/2017	Sampling Type:	Soil
Project Name:	PARKE A TRACT 1 #16	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PREMIER OIL - LOCO HILLS NM		

Sample ID: SP 5 @ 5 (H703094-21)

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	11/11/2017	ND	1.92	95.8	2.00	0.207		
Toluene*	<0.050	0.050	11/11/2017	ND	1.92	96.1	2.00	0.438		
Ethylbenzene*	<0.050	0.050	11/11/2017	ND	1.88	94.2	2.00	0.927		
Total Xylenes*	<0.150	0.150	11/11/2017	ND	5.97	99.4	6.00	0.622		
Total BTX	<0.300	0.300	11/11/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	11/09/2017	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	11/12/2017	ND	189	94.3	200	0.353	
DRO >C10-C28	<10.0	10.0	11/12/2017	ND	189	94.5	200	1.29	
EXT DRO >C28-C36	<10.0	10.0	11/12/2017	ND					

Surrogate: 1-Chlorooctane 101 % 28.3-164

Surrogate: 1-Chlorooctadecane 93.2 % 34.7-157

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

Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received:	11/07/2017	Sampling Date:	11/03/2017
Reported:	11/14/2017	Sampling Type:	Soil
Project Name:	PARKE A TRACT 1 #16	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PREMIER OIL - LOCO HILLS NM		

Sample ID: NORTH @ SURFACE (H703094-22)

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	11/11/2017	ND	1.92	95.8	2.00	0.207		
Toluene*	<0.050	0.050	11/11/2017	ND	1.92	96.1	2.00	0.438		
Ethylbenzene*	<0.050	0.050	11/11/2017	ND	1.88	94.2	2.00	0.927		
Total Xylenes*	<0.150	0.150	11/11/2017	ND	5.97	99.4	6.00	0.622		
Total BTEx	<0.300	0.300	11/11/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 72-148

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	11/09/2017	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	11/14/2017	ND	193	96.4	200	6.35	
DRO >C10-C28	<10.0	10.0	11/14/2017	ND	195	97.5	200	0.353	
EXT DRO >C28-C36	<10.0	10.0	11/14/2017	ND					

Surrogate: 1-Chlorooctane 107 % 28.3-164

Surrogate: 1-Chlorooctadecane 102 % 34.7-157

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

Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received: 11/07/2017
Reported: 11/14/2017
Project Name: PARKE A TRACT 1 #16
Project Number: NONE GIVEN
Project Location: PREMIER OIL - LOCO HILLS NM

Sampling Date: 11/03/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: EAST @ SURFACE (H703094-23)

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	11/11/2017	ND	1.92	95.8	2.00	0.207		
Toluene*	<0.050	0.050	11/11/2017	ND	1.92	96.1	2.00	0.438		
Ethylbenzene*	<0.050	0.050	11/11/2017	ND	1.88	94.2	2.00	0.927		
Total Xylenes*	<0.150	0.150	11/11/2017	ND	5.97	99.4	6.00	0.622		
Total BTX	<0.300	0.300	11/11/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	256	16.0	11/09/2017	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	11/14/2017	ND	193	96.4	200	6.35	
DRO >C10-C28	<10.0	10.0	11/14/2017	ND	195	97.5	200	0.353	
EXT DRO >C28-C36	<10.0	10.0	11/14/2017	ND					

Surrogate: 1-Chlorooctane 86.8 % 28.3-164

Surrogate: 1-Chlorooctadecane 82.9 % 34.7-157

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

Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received: 11/07/2017
Reported: 11/14/2017
Project Name: PARKE A TRACT 1 #16
Project Number: NONE GIVEN
Project Location: PREMIER OIL - LOCO HILLS NM

Sampling Date: 11/03/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: WEST @ SURFACE (H703094-24)

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	11/11/2017	ND	1.92	95.8	2.00	0.207	
Toluene*	<0.050	0.050	11/11/2017	ND	1.92	96.1	2.00	0.438	
Ethylbenzene*	<0.050	0.050	11/11/2017	ND	1.88	94.2	2.00	0.927	
Total Xylenes*	<0.150	0.150	11/11/2017	ND	5.97	99.4	6.00	0.622	
Total BTEX	<0.300	0.300	11/11/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	11/09/2017	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	11/14/2017	ND	193	96.4	200	6.35	
DRO >C10-C28	<10.0	10.0	11/14/2017	ND	195	97.5	200	0.353	
EXT DRO >C28-C36	10.2	10.0	11/14/2017	ND					

Surrogate: 1-Chlorooctane 102 % 28.3-164

Surrogate: 1-Chlorooctadecane 98.2 % 34.7-157

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

Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received: 11/07/2017
Reported: 11/14/2017
Project Name: PARKE A TRACT 1 #16
Project Number: NONE GIVEN
Project Location: PREMIER OIL - LOCO HILLS NM

Sampling Date: 11/03/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SOUTH @ SURFACE (H703094-25)

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	11/11/2017	ND	1.92	95.8	2.00	0.207	
Toluene*	<0.050	0.050	11/11/2017	ND	1.92	96.1	2.00	0.438	
Ethylbenzene*	<0.050	0.050	11/11/2017	ND	1.88	94.2	2.00	0.927	
Total Xylenes*	<0.150	0.150	11/11/2017	ND	5.97	99.4	6.00	0.622	
Total BTX	<0.300	0.300	11/11/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 72-148

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	11/09/2017	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	11/14/2017	ND	193	96.4	200	6.35	
DRO >C10-C28	<10.0	10.0	11/14/2017	ND	195	97.5	200	0.353	
EXT DRO >C28-C36	<10.0	10.0	11/14/2017	ND					

Surrogate: 1-Chlorooctane 98.6 % 28.3-164

Surrogate: 1-Chlorooctadecane 98.6 % 34.7-157

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

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

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

101 East Marland, Hobbs, NM 88240
(505) 393-2326 FAX (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

(505) 393-2326 FAX (505) 393-2416

BILL TO

ANALYSIS REQUEST

Company Name: BBC International, Inc.

Project Manager: Cliff Brunson

Address: P.O. Box 805

City: Hobbs

State: NM Zip: 88241

Phone #: 575-397-6388

Fax #: 575-397-0397

Project #:

Project Owner: Frontier

Project Name: Park A Tract 1 #16

Project Location: Log Halls

Sample Name: L-0

FOR LAB USE ONLY

Lab I.D.

Sample I.D.

H03094

sp1e5vk

sp1e5vk

sp1e5vk

sp1e5vk

sp1e5vk

sp1e5vk

sp1e5vk

sp1e5vk

sp1e5vk

sp1e5vk

sp1e5vk

sp1e5vk

sp1e5vk

sp1e5vk

P.O. #:

Company:

Attn:

Address:

City:

State: Zip:

Phone #:

Fax #:

MATRIX

PRESERV

SAMPLING

(G)RAB OR (C)OMP.

CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

TPH Extended
BTEX
CI-

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 analysis. 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 interruption, 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 remedies or otherwise.

Relinquished By: Jeff Crank

Date: 7-17

Time: 2:15

Received By: Jennifer Williams

CHECKED BY: (Initials)

REMARKS:

Phone Result: Yes No Add'l Phone #:

Fax Result: Yes No Add'l Fax #:

Sample Condition Cool Intact Yes No

Delivered By: (Circle One) 1.42

Sampler - UPS - Bus - Other: Corrupted 1152

ORDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240
(505) 393-2326 FAX (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2/3

Company Name: BBC International, Inc. Project Manager: Cliff Brunson Address: P.O. Box 805 City: Hobbs Phone #: 575-397-6388 Project #: Project Name: Park A Tract / #12 Project Location: Loc H-115 Sampler Name: V.O.		P.O. #: Company: Attn: Address: City: State: NM Zip: 88241 Fax #: 575-397-0397 Project Owner: Premier State: Zip: Phone #: Fax #: Project Location:	
Lab I.D. H703041 Sample I.D. SP 203 11 12 13 14 15 16 17 18 19 20 SP 305 SP 405 SP 505		(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER: ACID/BASE: ICE / COOL OTHER:	
Date: 7-2-97 Time: 8:15 Date: 8-15 Time: 		MATRIX PRESERV SAMPLING	
Relinquished By: W. S. Charles Received By: Benjamin A. Charles Date: 7-2-97 Time: 8:15 Date: 8-15 Time: 		DATE TIME 7-2 2:30 7-3 3:11 7-3 3:30 7-3 3:35 7-3 3:40 7-3 3:45 7-3 3:50 7-3 3:55 7-3 4:00 7-3 4:05 7-3 4:10 7-3 4:15 7-3 4:20 7-3 4:25 7-3 4:30 7-3 4:35 7-3 4:40 7-3 4:45 7-3 4:50 7-3 4:55 7-3 5:00 7-3 5:05 7-3 5:10 7-3 5:15 7-3 5:20 7-3 5:25 7-3 5:30 7-3 5:35 7-3 5:40 7-3 5:45 7-3 5:50 7-3 5:55 7-3 6:00 7-3 6:05 7-3 6:10 7-3 6:15 7-3 6:20 7-3 6:25 7-3 6:30 7-3 6:35 7-3 6:40 7-3 6:45 7-3 6:50 7-3 6:55 7-3 7:00 7-3 7:05 7-3 7:10 7-3 7:15 7-3 7:20 7-3 7:25 7-3 7:30 7-3 7:35 7-3 7:40 7-3 7:45 7-3 7:50 7-3 7:55 7-3 8:00 7-3 8:05 7-3 8:10 7-3 8:15 7-3 8:20 7-3 8:25 7-3 8:30 7-3 8:35 7-3 8:40 7-3 8:45 7-3 8:50 7-3 8:55 7-3 9:00 7-3 9:05 7-3 9:10 7-3 9:15 7-3 9:20 7-3 9:25 7-3 9:30 7-3 9:35 7-3 9:40 7-3 9:45 7-3 9:50 7-3 9:55 7-3 10:00 7-3 10:05 7-3 10:10 7-3 10:15 7-3 10:20 7-3 10:25 7-3 10:30 7-3 10:35 7-3 10:40 7-3 10:45 7-3 10:50 7-3 10:55 7-3 11:00 7-3 11:05 7-3 11:10 7-3 11:15 7-3 11:20 7-3 11:25 7-3 11:30 7-3 11:35 7-3 11:40 7-3 11:45 7-3 11:50 7-3 11:55 7-3 12:00 7-3 12:05 7-3 12:10 7-3 12:15 7-3 12:20 7-3 12:25 7-3 12:30 7-3 12:35 7-3 12:40 7-3 12:45 7-3 12:50 7-3 12:55 7-3 1:00 7-3 1:05 7-3 1:10 7-3 1:15 7-3 1:20 7-3 1:25 7-3 1:30 7-3 1:35 7-3 1:40 7-3 1:45 7-3 1:50 7-3 1:55 7-3 2:00 7-3 2:05 7-3 2:10 7-3 2:15 7-3 2:20 7-3 2:25 7-3 2:30 7-3 2:35 7-3 2:40 7-3 2:45 7-3 2:50 <	



CARDINAL LABORATORIES
101 East Marland, Hobbs, NM 88240
(505) 393-2326 FAX (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

3/3

Company Name: BBC International, Inc.

BILL TO

ANALYSIS REQUEST

Project Manager: Cliff Brunson

Address: P.O. Box 805

City: Hobbs

Phone #: 575-397-6388

Project #:

Project Name:

Project Location:

Sampler Name:

P.O. #:

Company:

Attn:

Address:

City:

State: Zip:

Phone #:

Fax #:

FOR LAB USE ONLY

Lab I.D.

Sample I.D.

HT03094

SP505
21 North @ Suk
22 East @ Suk
23 West @ Suk
24 South @ Suk
25

(G)RAB OR (C)OMP.

CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

TPH Extended
BTEX
CT

Relinquished By:

Date: 7-7-98 Received By:

Relinquished By: [Signature]

Date: 8-15-98 Received By: [Signature]

Delivered By: (Circle One) 1.48

Sampler - UPS - Bus - Other: Corrupted 1.452

Sample Condition

Cool Intact
☐ Yes ☐ No

CHECKED BY: (Initials)

T.O.

Phone Result:

☐ Yes ☐ No

Add'l Phone #:

Fax Result:

☐ Yes ☐ No

Add'l Fax #:

REMARKS:

* Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

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

NM OIL CONSERVATION
ARTESIA DISTRICT
State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

JUN 26 2017
RECEIVED

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

NA B1718027627

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Premier Oil & Gas, Inc. 17985	Contact: Daniel Jones	
Address: 901 Waterfall Way Suite 201, Richardson, TX 75080	Telephone No.: 972-470-0228	
Facility Name: Parke A Tract 1 #16	Facility Type: Water Disposal, Fluid Storage	
Surface Owner: Federal	Mineral Owner: Federal	API No.: 30-015-30457

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
L	22	17S	30E	1650	SOUTH	430	WEST	EDDY

Latitude 32.8173561 Longitude -103.9670105 NAD83

NATURE OF RELEASE

Type of Release: Oil Production Fluid Release	Volume of Release: 50 bbls	Volume Recovered: 40 bbls
Source of Release: Storage Tank	Date and Hour of Occurrence: 3/16/2017 6:30 Am	Date and Hour of Discovery: 3/16/2017 7:00 AM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? OCD Representative, BLM	
By Whom? Mark Hope (Field Man)	Date and Hour: 3/16/2017 8:00 AM	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

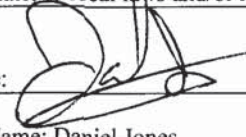

Describe Cause of Problem and Remedial Action Taken.*

Water leg plugged off on Gun barrel, all fluid then got shipped over to Oil Tank, causing an overflow of fluid. Fixed Gun barrel so it divided the fluid properly to water and

Describe Area Affected and Cleanup Action Taken.*

Recovered 40 bbls out of dyke. Removed 2-1/2 gravel truck loads down to the liner and put down new gravel.

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: Daniel Jones	Signed By:  Approved by Environmental Specialist:	
Title: Vice President	Approval Date: 6/28/17	Expiration Date: N/A
E-mail Address: dan.jones@premieroilgas.com	Conditions of Approval: See attached	Attached <input type="checkbox"/>
Date: 6/21/2017	Phone: 974-470-0228	

* Attach Additional Sheets If Necessary

2RP-4264

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 6/26/17 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP-4264 has been assigned. **Please refer to this case number in all future correspondence.**

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC. [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District 2 office in ARTESIA on or before 7/26/17. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

The goals of a 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.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must 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. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.
- Vertical delineation of soil impacts. Adsorbed soil contamination must 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. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.
- Nominal detection limits for field and laboratory analyses must be provided.
- Composite sampling is not generally allowed.
- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

- Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

- If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

- Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold

OCD Environmental Bureau Chief

1220 South St. Francis Drive

Santa Fe, New Mexico 87505

505-476-3465

jim.griswold@state.nm.us