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DELINEATION WORKPLAN

COG – NM DW STATE #003 (Leak Date: 4/30/18)

RP # 1RP-5038
API # 30-025-32955

This delineation workplan and remediation proposal addresses the release associated with RP # 1RP-5038.

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:

COG will excavate the spill area as depicted on the following site diagram. The entire leak area (blue shade on diagram) will be excavated to a depth of 1 foot.

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.

APPROVED





By Olivia Yu at 4:49 pm, Jul 19, 2018

NMOCD approves of the delineation completed for 1RP-5038. For the proposed remediation, bottom and sidewall samples are required at no greater than 50 ft. apart.

COG, NM DW State #003

Leak date: 04/30/18
Lea County, NM
API# 30-025-32955
1RP-5038

Legend

-  1 ft Excavation across entire leak area
-  Cardinal sample points
-  Leak Area
-  Sample points



Google Earth

© 2018 Google



50 ft

COG, NM DW State #003

Sample points

SP1, N 32.42646 W-103.41287

SP2, N 32.42643 W-103.41290

SP3, N 32.42643 W-103.41282

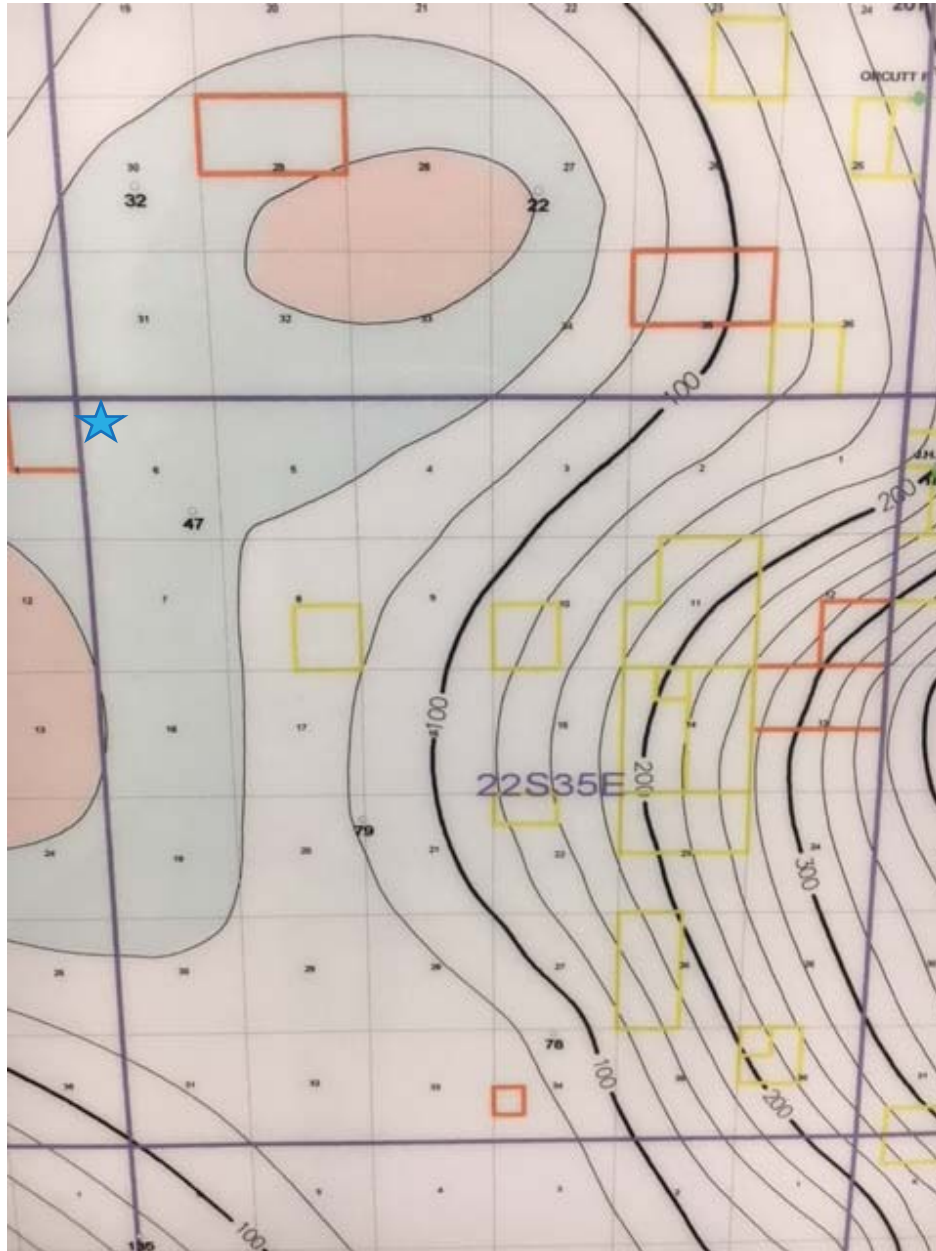
NORTH, N 32.42649 W-103.41287

SOUTH, N 32.42638 W-103.41286

EAST, N 32.42644 W-103.41279

WEST, N 32.42643 W-103.41293

COG, NM DW State #003
U/L D, Section 6, T22S, R35E
Groundwater: <50'





New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

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

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

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

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
CP 00934		CP	LE	2	1	2	01	22S	34E	648682	3588822	551	60	42	18
CP 00604		CP	LE	1	4	4	01	22S	34E	648743	3587666*	1214	135		
CC 00212 POD3		CU	CU	3	4	2	07	02N	34E	649365	3587386	1397	368		
CP 00593 POD1		CP	LE		4	4	06	22S	35E	650422	3587591*	1680	62		

Average Depth to Water: **42 feet**

Minimum Depth: **42 feet**

Maximum Depth: **42 feet**

Record Count: 4

UTMNAD83 Radius Search (in meters):

Easting (X): 649232

Northing (Y): 3588778

Radius: 1700

*UTM location was derived from PLSS - see Help

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.

5/4/18 9:22 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

Public Land Survey System (PLSS)

☒ Q64: Q16: NW Q4: NW Sec: 06 Tws: 22S Rng: 35E

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): 649232.0 mtrsNorthing (Y): 3588778.0 mtrs**~~ Please keep screen open to copy UTM values for Reports. ~~**

Laboratory Analytical Results Summary
NM DW State #003 (4/30/18)

		Sample ID	SP1 @ SURFACE	SP1 @ 1'	SP1 @ 2'	SP1 @ 7'
Analyte	Method	Date	5/24/18	5/24/18	5/24/18	5/24/18
			mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	<0.050	n/a
Toluene	BTEX 8021B		<0.050	<0.050	<0.050	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	<0.050	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	<0.150	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	<0.300	n/a
Chloride	SM4500Cl-B		592	672	128	160
GRO	TPH 8015M		<50.0	<10.0	<10.0	n/a
DRO	TPH 8015M		402	20.9	<10.0	n/a
EXT DRO	TPH 8015M		76.7	<10.0	<10.0	n/a

		Sample ID	SP2 @ SURFACE	SP2 @ 1'	SP2 @ 2'	SP2 @ 7'
Analyte	Method	Date	5/24/18	5/24/18	5/24/18	5/24/18
			mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	<0.050	n/a
Toluene	BTEX 8021B		<0.050	<0.050	<0.050	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	<0.050	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	<0.150	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	<0.300	n/a
Chloride	SM4500Cl-B		640	2000	64	128
GRO	TPH 8015M		<50.0	<10.0	<10.0	n/a
DRO	TPH 8015M		150	<10.0	<10.0	n/a
EXT DRO	TPH 8015M		<50.0	<10.0	<10.0	n/a

		Sample ID	SP3 @ SURFACE	SP3 @ 1'	SP3 @ 2'	SP3 @ 7'
Analyte	Method	Date	5/24/18	5/24/18	5/24/18	5/24/18
			mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	<0.050	n/a
Toluene	BTEX 8021B		<0.050	<0.050	<0.050	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	<0.050	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	<0.150	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	<0.300	n/a
Chloride	SM4500Cl-B		608	656	112	144
GRO	TPH 8015M		<10.0	<10.0	<10.0	n/a
DRO	TPH 8015M		284	45.9	<10.0	n/a
EXT DRO	TPH 8015M		103	<10.0	<10.0	n/a

		Sample ID	NORTH
Analyte	Method	Date	5/24/18
			mg/kg
Benzene	BTEX 8021B		<0.050
Toluene	BTEX 8021B		<0.050
Ethylbenzene	BTEX 8021B		<0.050
Total Xylenes	BTEX 8021B		<0.150
Total BTEX	BTEX 8021B		<0.300
Chloride	SM4500Cl-B		64
GRO	TPH 8015M		<10.0
DRO	TPH 8015M		<10.0
EXT DRO	TPH 8015M		<10.0

		Sample ID	EAST
Analyte	Method	Date	5/24/18
			mg/kg
Benzene	BTEX 8021B		<0.050
Toluene	BTEX 8021B		<0.050
Ethylbenzene	BTEX 8021B		<0.050
Total Xylenes	BTEX 8021B		<0.150
Total BTEX	BTEX 8021B		<0.300
Chloride	SM4500Cl-B		48
GRO	TPH 8015M		<10.0
DRO	TPH 8015M		<10.0
EXT DRO	TPH 8015M		<10.0

		Sample ID	SOUTH
Analyte	Method	Date	5/24/18
			mg/kg
Benzene	BTEX 8021B		<0.050
Toluene	BTEX 8021B		<0.050
Ethylbenzene	BTEX 8021B		<0.050
Total Xylenes	BTEX 8021B		<0.150
Total BTEX	BTEX 8021B		<0.300
Chloride	SM4500Cl-B		48
GRO	TPH 8015M		<10.0
DRO	TPH 8015M		<10.0
EXT DRO	TPH 8015M		<10.0

		Sample ID	WEST
Analyte	Method	Date	5/24/18
			mg/kg
Benzene	BTEX 8021B		<0.050
Toluene	BTEX 8021B		<0.050
Ethylbenzene	BTEX 8021B		<0.050
Total Xylenes	BTEX 8021B		<0.150
Total BTEX	BTEX 8021B		<0.300
Chloride	SM4500Cl-B		32
GRO	TPH 8015M		<10.0
DRO	TPH 8015M		<10.0
EXT DRO	TPH 8015M		<10.0

May 31, 2018

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: NM DW STATE #003

Enclosed are the results of analyses for samples received by the laboratory on 05/25/18 14:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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: 05/25/2018
Reported: 05/31/2018
Project Name: NM DW STATE #003
Project Number: (4/30/18)
Project Location: COG- LEA CO NM

Sampling Date: 05/24/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ SURFACE (H801447-01)

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	05/29/2018	ND	1.77	88.4	2.00	2.90	
Toluene*	<0.050	0.050	05/29/2018	ND	1.76	87.8	2.00	3.80	
Ethylbenzene*	<0.050	0.050	05/29/2018	ND	1.74	87.1	2.00	3.02	
Total Xylenes*	<0.150	0.150	05/29/2018	ND	5.45	90.8	6.00	2.86	
Total BTEX	<0.300	0.300	05/29/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	592	16.0	05/29/2018	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*	<50.0	50.0	05/26/2018	ND	210	105	200	2.66	
DRO >C10-C28*	402	50.0	05/26/2018	ND	205	103	200	4.92	
EXT DRO >C28-C36	76.7	50.0	05/26/2018	ND					

Surrogate: 1-Chlorooctane 98.6 % 41-142

Surrogate: 1-Chlorooctadecane 130 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Cliff Brunson
P.O. Box 805
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Fax To: (575) 397-0397

Received: 05/25/2018
Reported: 05/31/2018
Project Name: NM DW STATE #003
Project Number: (4/30/18)
Project Location: COG- LEA CO NM

Sampling Date: 05/24/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ 1' (H801447-02)

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	05/29/2018	ND	1.77	88.4	2.00	2.90		
Toluene*	<0.050	0.050	05/29/2018	ND	1.76	87.8	2.00	3.80		
Ethylbenzene*	<0.050	0.050	05/29/2018	ND	1.74	87.1	2.00	3.02		
Total Xylenes*	<0.150	0.150	05/29/2018	ND	5.45	90.8	6.00	2.86		
Total BTX	<0.300	0.300	05/29/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	672	16.0	05/29/2018	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/26/2018	ND	210	105	200	2.66	
DRO >C10-C28*	20.9	10.0	05/26/2018	ND	205	103	200	4.92	
EXT DRO >C28-C36	<10.0	10.0	05/26/2018	ND					

Surrogate: 1-Chlorooctane 83.2 % 41-142

Surrogate: 1-Chlorooctadecane 83.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

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

Received: 05/25/2018
Reported: 05/31/2018
Project Name: NM DW STATE #003
Project Number: (4/30/18)
Project Location: COG- LEA CO NM

Sampling Date: 05/24/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ 2' (H801447-03)

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	05/29/2018	ND	1.77	88.4	2.00	2.90		
Toluene*	<0.050	0.050	05/29/2018	ND	1.76	87.8	2.00	3.80		
Ethylbenzene*	<0.050	0.050	05/29/2018	ND	1.74	87.1	2.00	3.02		
Total Xylenes*	<0.150	0.150	05/29/2018	ND	5.45	90.8	6.00	2.86		
Total BTX	<0.300	0.300	05/29/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	05/29/2018	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/26/2018	ND	210	105	200	2.66	
DRO >C10-C28*	<10.0	10.0	05/26/2018	ND	205	103	200	4.92	
EXT DRO >C28-C36	<10.0	10.0	05/26/2018	ND					

Surrogate: 1-Chlorooctane 77.2 % 41-142

Surrogate: 1-Chlorooctadecane 74.9 % 37.6-147

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P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received: 05/25/2018
Reported: 05/31/2018
Project Name: NM DW STATE #003
Project Number: (4/30/18)
Project Location: COG- LEA CO NM

Sampling Date: 05/24/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ 7' (H801447-04)**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	05/29/2018	ND	416	104	400	0.00	

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Fax To: (575) 397-0397

Received: 05/25/2018
Reported: 05/31/2018
Project Name: NM DW STATE #003
Project Number: (4/30/18)
Project Location: COG- LEA CO NM

Sampling Date: 05/24/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ SURFACE (H801447-05)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/29/2018	ND	1.77	88.4	2.00	2.90		
Toluene*	<0.050	0.050	05/29/2018	ND	1.76	87.8	2.00	3.80		
Ethylbenzene*	<0.050	0.050	05/29/2018	ND	1.74	87.1	2.00	3.02		
Total Xylenes*	<0.150	0.150	05/29/2018	ND	5.45	90.8	6.00	2.86		
Total BTX	<0.300	0.300	05/29/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	640	16.0	05/29/2018	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*	<50.0	50.0	05/26/2018	ND	210	105	200	2.66	
DRO >C10-C28*	150	50.0	05/26/2018	ND	205	103	200	4.92	
EXT DRO >C28-C36	<50.0	50.0	05/26/2018	ND					

Surrogate: 1-Chlorooctane 95.7 % 41-142

Surrogate: 1-Chlorooctadecane 93.0 % 37.6-147

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P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received: 05/25/2018
Reported: 05/31/2018
Project Name: NM DW STATE #003
Project Number: (4/30/18)
Project Location: COG- LEA CO NM

Sampling Date: 05/24/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ 1' (H801447-06)

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	05/29/2018	ND	1.77	88.4	2.00	2.90		
Toluene*	<0.050	0.050	05/29/2018	ND	1.76	87.8	2.00	3.80		
Ethylbenzene*	<0.050	0.050	05/29/2018	ND	1.74	87.1	2.00	3.02		
Total Xylenes*	<0.150	0.150	05/29/2018	ND	5.45	90.8	6.00	2.86		
Total BTX	<0.300	0.300	05/29/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2000	16.0	05/29/2018	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/26/2018	ND	210	105	200	2.66	
DRO >C10-C28*	<10.0	10.0	05/26/2018	ND	205	103	200	4.92	
EXT DRO >C28-C36	<10.0	10.0	05/26/2018	ND					

Surrogate: 1-Chlorooctane 90.2 % 41-142

Surrogate: 1-Chlorooctadecane 86.3 % 37.6-147

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Analytical Results For:

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Hobbs NM, 88241
Fax To: (575) 397-0397

Received: 05/25/2018
Reported: 05/31/2018
Project Name: NM DW STATE #003
Project Number: (4/30/18)
Project Location: COG- LEA CO NM

Sampling Date: 05/24/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ 2' (H801447-07)

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	05/29/2018	ND	1.77	88.4	2.00	2.90		
Toluene*	<0.050	0.050	05/29/2018	ND	1.76	87.8	2.00	3.80		
Ethylbenzene*	<0.050	0.050	05/29/2018	ND	1.74	87.1	2.00	3.02		
Total Xylenes*	<0.150	0.150	05/29/2018	ND	5.45	90.8	6.00	2.86		
Total BTEX	<0.300	0.300	05/29/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 69.8-142

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	05/29/2018	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/26/2018	ND	210	105	200	2.66	
DRO >C10-C28*	<10.0	10.0	05/26/2018	ND	205	103	200	4.92	
EXT DRO >C28-C36	<10.0	10.0	05/26/2018	ND					

Surrogate: 1-Chlorooctane 88.9 % 41-142

Surrogate: 1-Chlorooctadecane 83.8 % 37.6-147

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Received: 05/25/2018
Reported: 05/31/2018
Project Name: NM DW STATE #003
Project Number: (4/30/18)
Project Location: COG- LEA CO NM

Sampling Date: 05/24/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ 7' (H801447-08)**Chloride, SM4500Cl-B****mg/kg****Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	05/29/2018	ND	416	104	400	0.00	

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Received: 05/25/2018
Reported: 05/31/2018
Project Name: NM DW STATE #003
Project Number: (4/30/18)
Project Location: COG- LEA CO NM

Sampling Date: 05/24/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ SURFACE (H801447-09)

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	05/29/2018	ND	1.77	88.4	2.00	2.90	
Toluene*	<0.050	0.050	05/29/2018	ND	1.76	87.8	2.00	3.80	
Ethylbenzene*	<0.050	0.050	05/29/2018	ND	1.74	87.1	2.00	3.02	
Total Xylenes*	<0.150	0.150	05/29/2018	ND	5.45	90.8	6.00	2.86	
Total BTX	<0.300	0.300	05/29/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	608	16.0	05/29/2018	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/30/2018	ND	222	111	200	1.89	
DRO >C10-C28*	284	10.0	05/30/2018	ND	227	113	200	1.75	
EXT DRO >C28-C36	103	10.0	05/30/2018	ND					

Surrogate: 1-Chlorooctane 86.5 % 41-142

Surrogate: 1-Chlorooctadecane 108 % 37.6-147

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Received: 05/25/2018
Reported: 05/31/2018
Project Name: NM DW STATE #003
Project Number: (4/30/18)
Project Location: COG- LEA CO NM

Sampling Date: 05/24/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ 1' (H801447-10)

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	05/29/2018	ND	1.87	93.5	2.00	3.60	
Toluene*	<0.050	0.050	05/29/2018	ND	1.85	92.7	2.00	2.94	
Ethylbenzene*	<0.050	0.050	05/29/2018	ND	1.85	92.5	2.00	4.30	
Total Xylenes*	<0.150	0.150	05/29/2018	ND	5.74	95.7	6.00	4.85	
Total BTX	<0.300	0.300	05/29/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	656	16.0	05/29/2018	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/29/2018	ND	222	111	200	1.89	
DRO >C10-C28*	45.9	10.0	05/29/2018	ND	227	113	200	1.75	
EXT DRO >C28-C36	<10.0	10.0	05/29/2018	ND					

Surrogate: 1-Chlorooctane 74.9 % 41-142

Surrogate: 1-Chlorooctadecane 82.2 % 37.6-147

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Received: 05/25/2018
Reported: 05/31/2018
Project Name: NM DW STATE #003
Project Number: (4/30/18)
Project Location: COG- LEA CO NM

Sampling Date: 05/24/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ 2' (H801447-11)

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	05/29/2018	ND	1.87	93.5	2.00	3.60		
Toluene*	<0.050	0.050	05/29/2018	ND	1.85	92.7	2.00	2.94		
Ethylbenzene*	<0.050	0.050	05/29/2018	ND	1.85	92.5	2.00	4.30		
Total Xylenes*	<0.150	0.150	05/29/2018	ND	5.74	95.7	6.00	4.85		
Total BTX	<0.300	0.300	05/29/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	05/29/2018	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/29/2018	ND	222	111	200	1.89	
DRO >C10-C28*	<10.0	10.0	05/29/2018	ND	227	113	200	1.75	
EXT DRO >C28-C36	<10.0	10.0	05/29/2018	ND					

Surrogate: 1-Chlorooctane 81.4 % 41-142

Surrogate: 1-Chlorooctadecane 83.7 % 37.6-147

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Received: 05/25/2018
Reported: 05/31/2018
Project Name: NM DW STATE #003
Project Number: (4/30/18)
Project Location: COG- LEA CO NM

Sampling Date: 05/24/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ 7' (H801447-12)**Chloride, SM4500Cl-B****mg/kg****Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	05/29/2018	ND	416	104	400	0.00	

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Received: 05/25/2018
Reported: 05/31/2018
Project Name: NM DW STATE #003
Project Number: (4/30/18)
Project Location: COG- LEA CO NM

Sampling Date: 05/24/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: NORTH (H801447-13)

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	05/29/2018	ND	1.87	93.5	2.00	3.60		
Toluene*	<0.050	0.050	05/29/2018	ND	1.85	92.7	2.00	2.94		
Ethylbenzene*	<0.050	0.050	05/29/2018	ND	1.85	92.5	2.00	4.30		
Total Xylenes*	<0.150	0.150	05/29/2018	ND	5.74	95.7	6.00	4.85		
Total BTX	<0.300	0.300	05/29/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.8-142

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	05/29/2018	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/29/2018	ND	222	111	200	1.89	
DRO >C10-C28*	<10.0	10.0	05/29/2018	ND	227	113	200	1.75	
EXT DRO >C28-C36	<10.0	10.0	05/29/2018	ND					

Surrogate: 1-Chlorooctane 81.7 % 41-142

Surrogate: 1-Chlorooctadecane 85.3 % 37.6-147

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Received: 05/25/2018
Reported: 05/31/2018
Project Name: NM DW STATE #003
Project Number: (4/30/18)
Project Location: COG- LEA CO NM

Sampling Date: 05/24/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: EAST (H801447-14)

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	05/29/2018	ND	1.87	93.5	2.00	3.60	
Toluene*	<0.050	0.050	05/29/2018	ND	1.85	92.7	2.00	2.94	
Ethylbenzene*	<0.050	0.050	05/29/2018	ND	1.85	92.5	2.00	4.30	
Total Xylenes*	<0.150	0.150	05/29/2018	ND	5.74	95.7	6.00	4.85	
Total BTX	<0.300	0.300	05/29/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 69.8-142

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	05/29/2018	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/29/2018	ND	222	111	200	1.89	
DRO >C10-C28*	<10.0	10.0	05/29/2018	ND	227	113	200	1.75	
EXT DRO >C28-C36	<10.0	10.0	05/29/2018	ND					

Surrogate: 1-Chlorooctane 88.2 % 41-142

Surrogate: 1-Chlorooctadecane 89.4 % 37.6-147

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Received: 05/25/2018
Reported: 05/31/2018
Project Name: NM DW STATE #003
Project Number: (4/30/18)
Project Location: COG- LEA CO NM

Sampling Date: 05/24/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SOUTH (H801447-15)

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	05/29/2018	ND	1.87	93.5	2.00	3.60		
Toluene*	<0.050	0.050	05/29/2018	ND	1.85	92.7	2.00	2.94		
Ethylbenzene*	<0.050	0.050	05/29/2018	ND	1.85	92.5	2.00	4.30		
Total Xylenes*	<0.150	0.150	05/29/2018	ND	5.74	95.7	6.00	4.85		
Total BTX	<0.300	0.300	05/29/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 69.8-142

Chloride, SM4500CI-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	05/29/2018	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/29/2018	ND	222	111	200	1.89	
DRO >C10-C28*	<10.0	10.0	05/29/2018	ND	227	113	200	1.75	
EXT DRO >C28-C36	<10.0	10.0	05/29/2018	ND					

Surrogate: 1-Chlorooctane 77.5 % 41-142

Surrogate: 1-Chlorooctadecane 73.2 % 37.6-147

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Received: 05/25/2018
Reported: 05/31/2018
Project Name: NM DW STATE #003
Project Number: (4/30/18)
Project Location: COG- LEA CO NM

Sampling Date: 05/24/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: WEST (H801447-16)

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	05/29/2018	ND	1.87	93.5	2.00	3.60		
Toluene*	<0.050	0.050	05/29/2018	ND	1.85	92.7	2.00	2.94		
Ethylbenzene*	<0.050	0.050	05/29/2018	ND	1.85	92.5	2.00	4.30		
Total Xylenes*	<0.150	0.150	05/29/2018	ND	5.74	95.7	6.00	4.85		
Total BTEx	<0.300	0.300	05/29/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	05/29/2018	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/29/2018	ND	222	111	200	1.89	
DRO >C10-C28*	<10.0	10.0	05/29/2018	ND	227	113	200	1.75	
EXT DRO >C28-C36	<10.0	10.0	05/29/2018	ND					

Surrogate: 1-Chlorooctane 80.0 % 41-142

Surrogate: 1-Chlorooctadecane 77.4 % 37.6-147

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager



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[illegible]

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Relinquished By: <i>Pnz B...</i>		Date: <i>3/24/18</i>	Received By: <i>[Signature]</i>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #: _____
		Time: <i>3:00pm</i>		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #: _____
Relinquished By: <i>[Signature]</i>		Date: <i>3-25-18</i>	Received By: <i>[Signature]</i>	REMARKS:	
		Time: <i>2:15</i>			
Delivered By: (Circle One) <i>-6.6c</i>		Sample Condition Cool <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	CHECKED BY: (Initials) <i>re #15</i>	<i>4 has some head space</i>	
Sampler - UPS - Bus - Other: <i>Corrected -6.65c</i>					

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

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2 of 2

[illegible]

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Relinquished By: <i>Duc Bunas</i>		Date: <i>5-24-18</i>	Received By: <i>[Signature]</i>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
		Time: <i>5:00pm</i>		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By: <i>[Signature]</i>		Date: <i>5-25-18</i>	Received By: <i>[Signature]</i>	REMARKS:	
		Time: <i>2:15</i>			
Delivered By: (Circle One) <i>-6.6c</i>		Sample Condition		CHECKED BY:	
Sampler - UPS - Bus - Other: <i>Corrected - 6.65</i>		Cool <input type="checkbox"/> Intact <input type="checkbox"/>		(Initials)	
		Yes <input type="checkbox"/> No <input type="checkbox"/>		<i>10-#75</i>	
		Yes <input type="checkbox"/> No <input type="checkbox"/>		<i>Has some head space</i>	

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating LLC (OGRID# 229137)	Contact: Robert McNeill	
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-683-7443	
Facility Name: New Mexico DW State #003	Facility Type: Wellhead	
Surface Owner: State	Mineral Owner: State	API No. 30-025-32955

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	06	22S	35E	660	North	660	West	Lea

Latitude 32.4263496 Longitude -103.4127045 NAD83

NATURE OF RELEASE

Type of Release: Oil and Produced Water	Volume of Release: 2 bbl. Oil 3 bbl. Produced Water	Volume Recovered: 0 bbl.
Source of Release: Stuffing Box Leak	Date and Hour of Occurrence: April 30, 2018 8:30am	Date and Hour of Discovery: April 30, 2018 8:30am
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.*		

RECEIVED

By Olivia Yu at 7:57 am, May 02, 2018

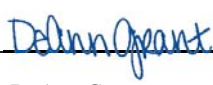

Describe Cause of Problem and Remedial Action Taken.*

The release was caused by a stuffing box leak. Packing in stuffing box has been replaced.

Describe Area Affected and Cleanup Action Taken.*

The release occurred on location. A vacuum truck was dispatched to remove all freestanding fluids. Concho will have the spill area sampled to delineate any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant 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 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: DeAnn Grant		Approved by Environmental Specialist: 	
Title: HSE Administrative Assistant	Approval Date: 5/2/2018	Expiration Date:	
E-mail Address: agrant@concho.com	Conditions of Approval: see attached directive	Attached <input checked="" type="checkbox"/>	
Date: May 2, 2018	Phone: 432-253-4513		

* Attach Additional Sheets If Necessary

1RP-5038

nOY1812228758

pOY1812228919

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 5/2/2018 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 1RP-5038 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 1 office in Hobbs on or before 6/2/2018. 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