

Closure Report

Site Description

APPROVED

By Olivia Yu at 7:19 am, Mar 14, 2018

Site Name:	Loco Hills SWD Pipeline
Company:	COG Operating
Legal Description:	U/L K, Section 34, T17S, R32E
County:	Lea County, NM
GPS Coordinates:	N 32.79031° W-103.75655°

NMOCD grants closure to 1RP-4493.

Release Data

Date of Release:	10/21/2016
Type of Release:	Produced water
Source of Release:	Compromised flow line
Volume of Release:	5 bbls
Volume Recovered:	0 bbls

Remediation Specifications

Remediation Parameters:	Excavate the entire leak area to a depth of 4 feet. Obtain confirmation sidewall samples and test for BTEX, CI, & TPH EXT. Place a liner in the excavation. Backfill the site with clean soil.	
Remediation Activities:	01/26/2018 to 01/31/2018	
Plan Sent to OCD:	11/16/2017	Email from Cliff Brunson to Olivia Yu
OCD Approval of Plan:	12/19/2017	Email from Olivia Yu to Cliff Brunson
Plan Sent to BLM:	11/16/2017	Email from Cliff Brunson to Arthur Arias
BLM Approval of Plan:	12/19/2017	Email from Arthur Arias to Cliff Brunson

Supporting Documentation

Initial C-141	Signed 10/28/2016
Final C-141	Signed 02/09/2018
Site Diagram	October 2017
Groundwater Plot	50'-75'
TOPO Maps	October 2017
Lab Summary	11/16/16, 12/21/16, 10/12/17, 10/23/17, and 01/30/18
Lab Analysis	11/16/16, 12/21/16, 10/12/17, 10/23/17, and 01/30/18
Correspondence	Request and approval of remediation plan via email

Request for Closure

Based on the completion of the remediation plan, BBC International requests closure approval from NMOCD.

Cliff Brunson, President, BBC International Inc.

02/15/2018

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 August 8, 2011

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	Contact: Robert McNeill	
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-230-0077	
Facility Name: Loco Hills SWD Pipeline	Facility Type: SWD system	
Surface Owner: Federal	Mineral Owner:	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	34	17S	32E	1650	South	2310	West	Lea

32.790375, -103.757048

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 5 bbls of PW	Volume Recovered: 0 bbls of PW
Source of Release: Flowline	Date and Hour of Occurrence: 10/21/2016 unknown	Date and Hour of Discovery: 10/21/2016 1:00 PM
Was Immediate Notice Given? <input type="checkbox"/> Yes <input 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.*


Describe Cause of Problem and Remedial Action Taken.*

The release was caused by a hole in the poly flowline. The line was isolated and the damaged portion of the flowline was removed and the line was fused back together.

Describe Area Affected and Cleanup Action Taken.*

This release occurred on the pipeline ROW and light mist impacted a small portion of the pasture adjacent to the ROW. Concho will have the spill site sampled to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation work.

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: Dakota Neel	Approved by Environmental Specialist:	
Title: Environmental Coordinator	Approval Date:	Expiration Date:
E-mail Address: dneel2@concho.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 10/28/2016 Phone: 575-748-6933		

* Attach Additional Sheets If Necessary

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 August 8, 2011

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	Contact: Robert McNeill	
Address: 600 West Illinois Avenue, Midland, TX 79701	Telephone No. 432-230-0077	
Facility Name: Loco Hills SWD Pipeline	Facility Type: SWD system	
Surface Owner: Federal	Mineral Owner:	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	34	17S	32E	1650	South	2310	West	Lea County, NM

Latitude N 32.79037° Longitude W 103.75704°

NATURE OF RELEASE

Type of Release: Produced water	Volume of Release: 5 bbls	Volume Recovered: 0 bbls
Source of Release: Flowline	Date and Hour of Occurrence: 10/21/16 unknown	Date and Hour of Discovery: 10/21/16 @ 1:00 pm
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.*		
<div>APPROVED By Olivia Yu at 7:18 am, Mar 14, 2018</div>		

Describe Cause of Problem and Remedial Action Taken.*

This release was caused by a hole in the poly flowline. The flowline was isolated and the damaged portion was removed and the line was fused back together.

Describe Area Affected and Cleanup Action Taken.*

This release occurred on the pipeline ROW and a light mist impacted a small portion of the pasture adjacent to the ROW. The site was delineated according to OCD standards and a remediation plan was created. Remediation was completed in accordance with the remediation plan approved by Olivia Yu of NMOCD via email on 12/19/2017 and approved by Arthur Arias of the BLM via email on 12/19/2017.

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: <i>Rebecca Haskell</i>	OIL CONSERVATION DIVISION	
Printed Name: Rebecca Haskell	Approved by Environmental Specialist: <i>[Signature]</i>	
Title: Senior HSE Coordinator	Approval Date: 3/14/2018	Expiration Date: xx/xx/xxxx
E-mail Address: rhaskell@concho.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: February 9, 2018	Phone: (432) 683-7443	







* Attach Additional Sheets If Necessary

1RP-4493

COG, Loco Hills SWD Pipeline

Leak date: 10/21/16, 1RP-4493
Lea County, NM

Legend

-  4 ft Excavation with liner
-  Cardinal sample points
-  Leak area
-  Leak point
-  Sample points
-  Sidewall confirmation sample points



Google Earth

©2018 Google



50 ft

COG, Loco Hills SWD Pipeline

Sample points, hang auger

AH1, N 32.79035 W-103.75660

T1, N 32.79036 W-103.75663

Drilling sample:

SB1, N 32.79034 W-103.75661

Cardinal points sample, hand auger:

NORTH, N 32.79041 W-103.75662

SOUTH, N 32.79029 W-103.75659

EAST, N 32.79033 W-103.75656

WEST, N 32.79036 W-103.75669

Sidewall confirmation samples, hand auger:

Sidewall 1, N 32.79039 W-103.75665

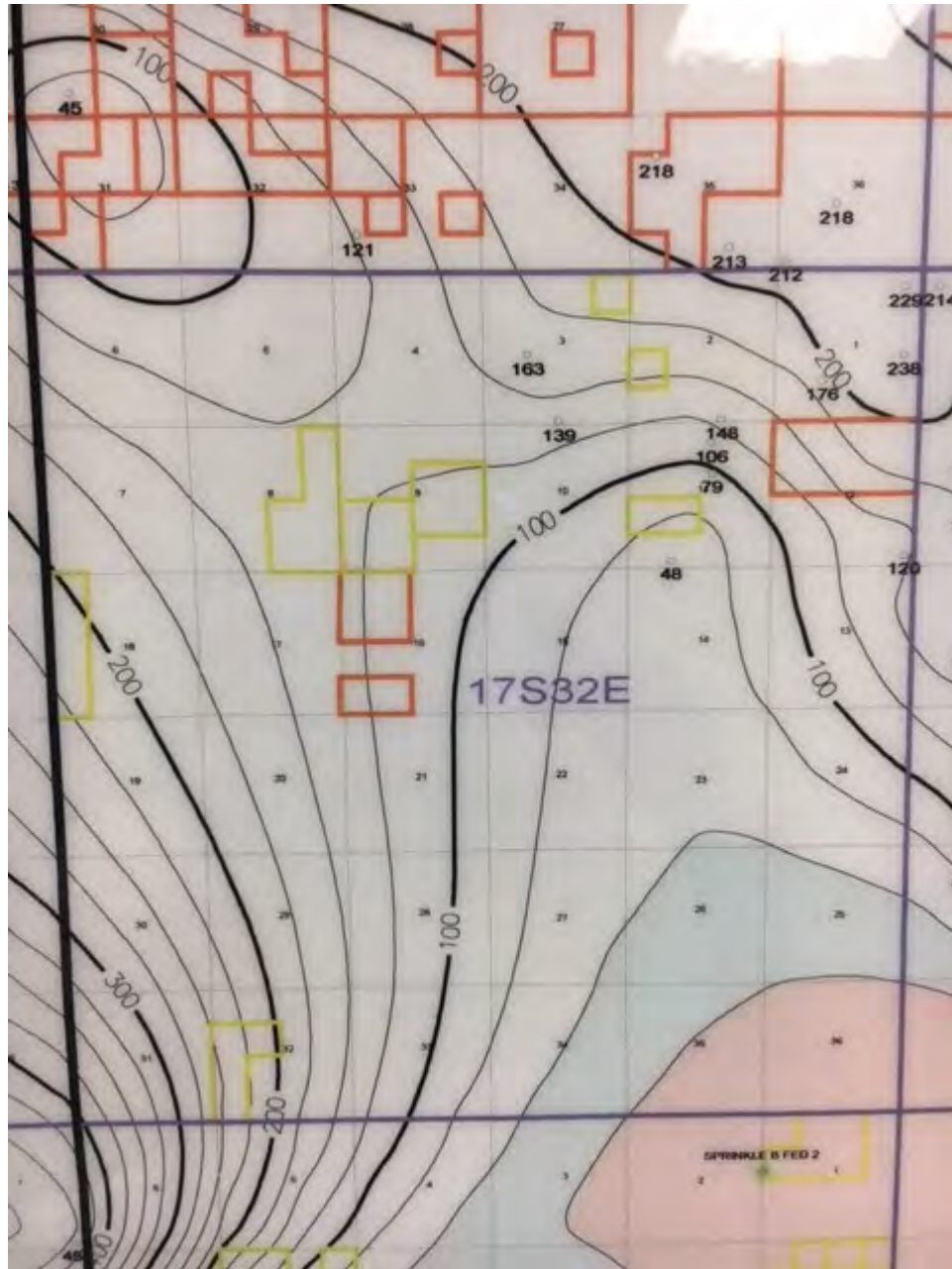
Sidewall 2, N 32.79037 W-103.75659

Sidewall 3, N 32.79031 W-103.75658

Sidewall 4, N 32.79033 W-103.75663

Leak point, N 32.79033 W-103.75661

**COG, Loco Hills SWD Pipeline
U/L K, Section 34, T 17S, R32E
Groundwater: 50'-75'**





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): 616454

Northing (Y): 3628606

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.

3/31/17 10:20 AM

WATER COLUMN/ AVERAGE
DEPTH TO WATER

Public Land Survey System (PLSS)

Q64:Q16: NEQ4: SWSec: 34Tws: 17SRng: 32E

State Plane Coordinate System - NAD27

X:ftY:ftZone:

State Plane Coordinate System - NAD83

X:ftY:ftZone:

Degrees/Minutes/Seconds

Longitude (X):Degrees: °Minutes: 'Seconds: "

Latitude (Y):Degrees: °Minutes: 'Seconds: "

UTM - NAD27

Easting (X):mtrs Northing (Y):mtrs Zone:

SUBMIT

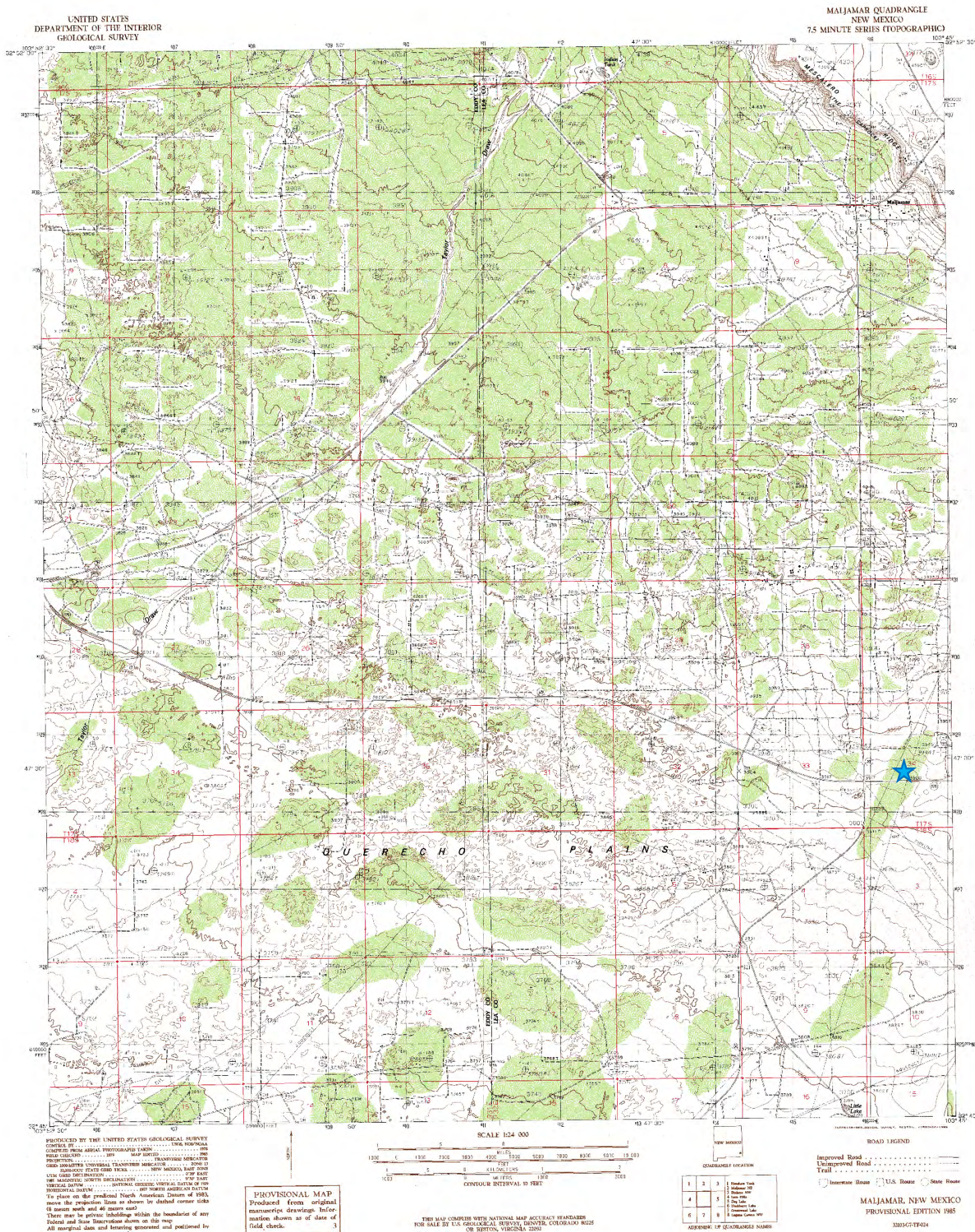
All Conversion Results are displayed as NAD 1983 UTM Zone 13

Easting (X):616454.0mtrsNorthing (Y):3628606.0mtrs

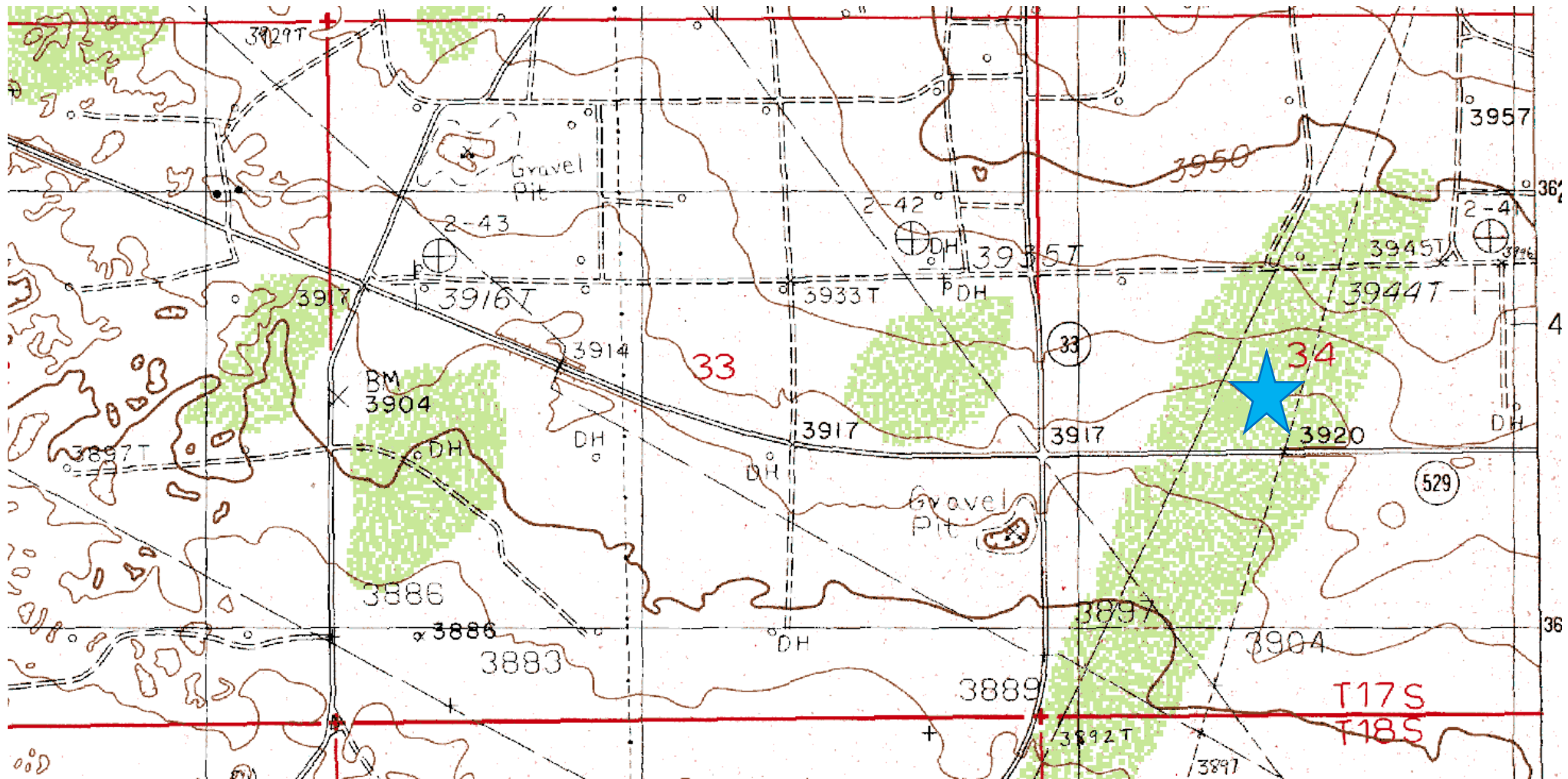
~~ Please keep screen open to copy UTM values for Reports. ~~

COG

Loco Hills SWD Pipeline



Loco Hills SWD Pipeline



**Laboratory Analytical Results Summary
Loco Hills SWD Pipeline**

		Sample	AH1 @ SURFACE	AH1 @ 1'	AH1 @ 2'	AH1 @ 3'	AH1 @ 4'	AH1 @ 5'
Analyte	Method	Date	11/16/16	11/16/16	11/16/16	11/16/16	11/16/16	11/16/16
			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Benzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B		<0.150	<0.150	<0.150	<0.150	<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	<0.300	<0.300	<0.300	<0.300	<0.300
Chloride	SM4500Cl-B		544	880	1280	8260	22800	11900
GRO	TPH 8015M		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
DRO	TPH 8015M		107	142	<10.0	<10.0	<10.0	<10.0

Laboratory Analytical Results Summary

Loco Hills SWD Pipeline

[illegible]

Laboratory Analytical Results Summary
Loco Hills SWD Pipeline

		Sample ID	SB1 @ 20'	SB1 @ 25'	SB1 @ 30'	SB1 @ 35'	SB1 @ 40'	SB1 @ 45'	SB1 @ 50'	SB1 @ 55'	SB1 @ 60'	SB1 @ 65'
Analyte	Method	Date	10/12/17	10/12/17	10/12/17	10/12/17	10/12/17	10/12/17	10/12/17	10/12/17	10/12/17	10/12/17
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Chloride	SM4500Cl-B		9060	6530	5920	1390	3840	5200	9200	128	64	64

Laboratory Analytical Results Summary
Loco Hills SWD Pipeline

<i>Cardinal points</i>		Sample ID	NORTH @ SURFACE	EAST @ SURFACE	WEST @ SURFACE	SOUTH @ SURFACE
Analyte	Method	Date	10/23/17	10/23/17	10/23/17	10/23/17
			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	SM4500Cl-B		112	112	112	144
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	<10.0	<10.0

Laboratory Analytical Results Summary
Loco Hills SWD Pipeline

		Sample ID	Sidewall 1
Analyte	Method	Date	1/30/18
			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	Sidewall 2
Analyte	Method	Date	1/30/18
			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

		Sample ID	Sidewall 3
Analyte	Method	Date	1/30/18
			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	Sidewall 4
Analyte	Method	Date	1/30/18
			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



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

December 01, 2016

AARON LIEB

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: LOCO HILLS SWD MAINLINE

Enclosed are the results of analyses for samples received by the laboratory on 11/30/16 11:34.

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:

 COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

 Received: 11/30/2016
 Reported: 12/01/2016
 Project Name: LOCO HILLS SWD MAINLINE
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 11/16/2016
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Angela Cabrera

Sample ID: AH 1 @ SURFACE (H602673-01)

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	11/30/2016	ND	2.10	105	2.00	1.81	
Toluene*	<0.050	0.050	11/30/2016	ND	2.16	108	2.00	1.71	
Ethylbenzene*	<0.050	0.050	11/30/2016	ND	2.12	106	2.00	1.69	
Total Xylenes*	<0.150	0.150	11/30/2016	ND	6.35	106	6.00	1.68	
Total BTX	<0.300	0.300	11/30/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID) 114 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	544	16.0	12/01/2016	ND	400	100	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	11/30/2016	ND	190	95.1	200	6.67	
DRO >C10-C28	107	10.0	11/30/2016	ND	198	99.2	200	11.3	

Surrogate: 1-Chlorooctane 88.2 % 35-147

Surrogate: 1-Chlorooctadecane 86.1 % 28-171

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:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 11/30/2016
Reported: 12/01/2016
Project Name: LOCO HILLS SWD MAINLINE
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 11/16/2016
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Angela Cabrera

Sample ID: AH 1 @ 1' (H602673-02)

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	11/30/2016	ND	2.10	105	2.00	1.81	
Toluene*	<0.050	0.050	11/30/2016	ND	2.16	108	2.00	1.71	
Ethylbenzene*	<0.050	0.050	11/30/2016	ND	2.12	106	2.00	1.69	
Total Xylenes*	<0.150	0.150	11/30/2016	ND	6.35	106	6.00	1.68	
Total BTEx	<0.300	0.300	11/30/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID) 113 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	880	16.0	12/01/2016	ND	400	100	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	11/30/2016	ND	190	95.1	200	6.67	
DRO >C10-C28	142	10.0	11/30/2016	ND	198	99.2	200	11.3	

Surrogate: 1-Chlorooctane 85.7 % 35-147

Surrogate: 1-Chlorooctadecane 90.0 % 28-171

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:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 11/30/2016
Reported: 12/01/2016
Project Name: LOCO HILLS SWD MAINLINE
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 11/16/2016
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Angela Cabrera

Sample ID: AH 1 @ 2' (H602673-03)

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	11/30/2016	ND	2.10	105	2.00	1.81	
Toluene*	<0.050	0.050	11/30/2016	ND	2.16	108	2.00	1.71	
Ethylbenzene*	<0.050	0.050	11/30/2016	ND	2.12	106	2.00	1.69	
Total Xylenes*	<0.150	0.150	11/30/2016	ND	6.35	106	6.00	1.68	
Total BTX	<0.300	0.300	11/30/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID) 113 % 73.6-140

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	12/01/2016	ND	400	100	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	11/30/2016	ND	190	95.1	200	6.67	
DRO >C10-C28	<10.0	10.0	11/30/2016	ND	198	99.2	200	11.3	

Surrogate: 1-Chlorooctane 91.5 % 35-147

Surrogate: 1-Chlorooctadecane 81.6 % 28-171

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:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 11/30/2016
Reported: 12/01/2016
Project Name: LOCO HILLS SWD MAINLINE
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 11/16/2016
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Angela Cabrera

Sample ID: AH 1 @ 3' (H602673-04)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/30/2016	ND	2.10	105	2.00	1.81	
Toluene*	<0.050	0.050	11/30/2016	ND	2.16	108	2.00	1.71	
Ethylbenzene*	<0.050	0.050	11/30/2016	ND	2.12	106	2.00	1.69	
Total Xylenes*	<0.150	0.150	11/30/2016	ND	6.35	106	6.00	1.68	
Total BTEx	<0.300	0.300	11/30/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	8260	16.0	12/01/2016	ND	400	100	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	11/30/2016	ND	190	95.1	200	6.67	
DRO >C10-C28	<10.0	10.0	11/30/2016	ND	198	99.2	200	11.3	

Surrogate: 1-Chlorooctane 88.1 % 35-147

Surrogate: 1-Chlorooctadecane 74.5 % 28-171

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:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 11/30/2016
Reported: 12/01/2016
Project Name: LOCO HILLS SWD MAINLINE
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 11/16/2016
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Angela Cabrera

Sample ID: AH 1 @ 4' (H602673-05)

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	11/30/2016	ND	2.10	105	2.00	1.81	
Toluene*	<0.050	0.050	11/30/2016	ND	2.16	108	2.00	1.71	
Ethylbenzene*	<0.050	0.050	11/30/2016	ND	2.12	106	2.00	1.69	
Total Xylenes*	<0.150	0.150	11/30/2016	ND	6.35	106	6.00	1.68	
Total BTX	<0.300	0.300	11/30/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID) 113 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	22800	16.0	12/01/2016	ND	400	100	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	11/30/2016	ND	190	95.1	200	6.67	
DRO >C10-C28	<10.0	10.0	11/30/2016	ND	198	99.2	200	11.3	

Surrogate: 1-Chlorooctane 92.8 % 35-147

Surrogate: 1-Chlorooctadecane 72.0 % 28-171

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:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 11/30/2016
Reported: 12/01/2016
Project Name: LOCO HILLS SWD MAINLINE
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 11/16/2016
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Angela Cabrera

Sample ID: AH 1 @ 5' (H602673-06)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/30/2016	ND	2.10	105	2.00	1.81	
Toluene*	<0.050	0.050	11/30/2016	ND	2.16	108	2.00	1.71	
Ethylbenzene*	<0.050	0.050	11/30/2016	ND	2.12	106	2.00	1.69	
Total Xylenes*	<0.150	0.150	11/30/2016	ND	6.35	106	6.00	1.68	
Total BTEx	<0.300	0.300	11/30/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID) 114 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	11900	16.0	12/01/2016	ND	400	100	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	11/30/2016	ND	190	95.1	200	6.67	
DRO >C10-C28	<10.0	10.0	11/30/2016	ND	198	99.2	200	11.3	

Surrogate: 1-Chlorooctane 93.9 % 35-147

Surrogate: 1-Chlorooctadecane 82.6 % 28-171

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

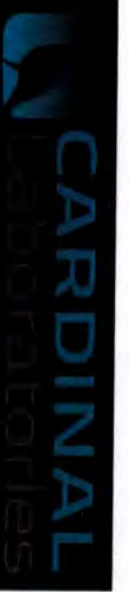
Cardinal Laboratories

*=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
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: COG Operating LLC

Project Manager: Aaron Lieb

Address: 2407 Pecos Avenue

City: Artesia

Phone #: 575-748-1553

Project #:

Project Name: Loco Hills SWD Main Line

Project Location:

Sampler Name: Aaron Lieb

BILL TO

P.O. #:

Company: COG Operating LLC

Attn: Robert McNeill

Address: 600 W Illinois

City: Midland

State: TX Zip: 79701

Phone #: (432) 221-0388

Fax #:

ANALYSIS REQUEST

FOR LAB USE ONLY

Lab I.D.

Sample I.D.

H60267

1
2
3
4
5
6

AH1 @ surface

AH1 @ 1'

AH1 @ 2'

AH1 @ 3'

AH1 @ 4'

AH1 @ 5'

(G)RAB OR (C)OMP.

CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE TIME

BTEX

TPH

Chloride

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

Relinquished By:

Date: 11-30-16

Received By:

Phone Result:

Fax Result:

Add'l Phone #:

Add'l Fax #:

Relinquished By:

Date: 11/30/16

Received By:

REMARKS:

Phone Result:

Fax Result:

Add'l Phone #:

Add'l Fax #:

Delivered By: (Circle One)

Sampler - UPS - Bus - Other: #75

5.20

Sample Condition

CHECKED BY:

FORM-006 R-2.0

BUSH TPH, BTEX



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

January 05, 2017

DAKOTA NEEL

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: LOCO HILLS SWD MAINLINE

Enclosed are the results of analyses for samples received by the laboratory on 12/29/16 12:05.

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:

COG OPERATING
DAKOTA NEEL
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 12/29/2016
Reported: 01/05/2017
Project Name: LOCO HILLS SWD MAINLINE
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 12/21/2016
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Angela Cabrera

Sample ID: T1 - SURFACE (H602892-01)

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	12/30/2016	ND	1.82	91.1	2.00	2.19	
Toluene*	<0.050	0.050	12/30/2016	ND	1.85	92.3	2.00	2.27	
Ethylbenzene*	<0.050	0.050	12/30/2016	ND	1.90	95.0	2.00	2.67	
Total Xylenes*	<0.150	0.150	12/30/2016	ND	5.54	92.3	6.00	2.61	
Total BTEX	<0.300	0.300	12/30/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.3 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1340	16.0	01/03/2017	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	12/30/2016	ND	184	92.0	200	3.90	
DRO >C10-C28	460	10.0	12/30/2016	ND	190	95.0	200	1.29	

Surrogate: 1-Chlorooctane 103 % 35-147

Surrogate: 1-Chlorooctadecane 124 % 28-171

Sample ID: T1 - 1' (H602892-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	960	16.0	01/03/2017	ND	416	104	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:

COG OPERATING
DAKOTA NEEL
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 12/29/2016
Reported: 01/05/2017
Project Name: LOCO HILLS SWD MAINLINE
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 12/21/2016
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Angela Cabrera

Sample ID: T1 - 2' (H602892-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	8130	16.0	01/03/2017	ND	400	100	400	0.00	

Sample ID: T1 - 3' (H602892-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	13600	16.0	01/03/2017	ND	400	100	400	0.00	QM-07

Sample ID: T1 - 4' (H602892-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	14000	16.0	01/03/2017	ND	400	100	400	0.00	

Sample ID: T1 - 5' (H602892-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	12000	16.0	01/03/2017	ND	400	100	400	0.00	

Sample ID: T1 - 6' (H602892-07)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	10400	16.0	01/03/2017	ND	400	100	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:

 COG OPERATING
 DAKOTA NEEL
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

 Received: 12/29/2016
 Reported: 01/05/2017
 Project Name: LOCO HILLS SWD MAINLINE
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 12/21/2016
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Angela Cabrera

Sample ID: T1 - 7' (H602892-08)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	9060	16.0	01/03/2017	ND	400	100	400	0.00	

Sample ID: T1 - 8' (H602892-09)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	12100	16.0	01/03/2017	ND	400	100	400	0.00	

Sample ID: T1 - 10' (H602892-10)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	12400	16.0	01/03/2017	ND	400	100	400	0.00	

Sample ID: T1 - 12' (H602892-11)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	12500	16.0	01/03/2017	ND	400	100	400	0.00	

Sample ID: T1 - 14' (H602892-12)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	9860	16.0	01/03/2017	ND	400	100	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:COG OPERATING
DAKOTA NEEL
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONEReceived: 12/29/2016
Reported: 01/05/2017
Project Name: LOCO HILLS SWD MAINLINE
Project Number: NONE GIVEN
Project Location: NOT GIVENSampling Date: 12/21/2016
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Angela Cabrera**Sample ID: T1 - 16' (H602892-13)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	11200	16.0	01/03/2017	ND	400	100	400	0.00	

Sample ID: T1 - 18' (H602892-14)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	11600	16.0	01/03/2017	ND	400	100	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

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
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2012

BILL TO

ANALYSIS REQUEST

Company Name: COG Operating LLC

Project Manager: Dakota Neel

Address: 2208 West Main

City: Artesia

State: NM Zip: 88210

Phone #: 432-215-2783 Fax #: Project Owner:

Project #: Project Name: LOCO HILLS SWD MAINLINE

Project Location:

Sampler Name: Dakota Neel & Aaron Lieb

FOR LAB USE ONLY

Lab I.D.

Sample I.D.

110612892

11 T1 - 12'
12 T1 - 14'
13 T1 - 16'
14 T1 - 18'

(G)RAB OR (C)OMP.

CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE TIME

12/21/16 1:00 PM

BTEX

TPH

Chloride

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

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

Relinquished By:

Date: 12-21-16 Received By:

Relinquished By:

Date: 12-21-16 Received By:

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

#75 5:22

Sample Condition
Cool ☒ Intact ☒
Yes ☒ No ☒

CHECKED BY: (Initials)

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS:
dneel2@concho.com
rgrubbs@concho.com

5. Please Fax written changes to 575-393-2476



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

October 19, 2017

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: LOCO HILLS SWD PIPELINE

Enclosed are the results of analyses for samples received by the laboratory on 10/13/17 13:33.

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,

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

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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

Received:	10/13/2017	Sampling Date:	10/12/2017
Reported:	10/19/2017	Sampling Type:	Soil
Project Name:	LOCO HILLS SWD PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: SB1 @ 20 (H702779-01)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	9060	16.0	10/17/2017	ND	432	108	400	0.00	

Sample ID: SB1 @ 25 (H702779-02)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6530	16.0	10/17/2017	ND	432	108	400	0.00	

Sample ID: SB1 @ 30 (H702779-03)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5920	16.0	10/17/2017	ND	432	108	400	0.00	

Sample ID: SB1 @ 35 (H702779-04)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1390	16.0	10/17/2017	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:	10/13/2017	Sampling Date:	10/12/2017
Reported:	10/19/2017	Sampling Type:	Soil
Project Name:	LOCO HILLS SWD PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: SB1 @ 40 (H702779-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3840	16.0	10/17/2017	ND	432	108	400	0.00	

Sample ID: SB1 @ 45 (H702779-06)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5200	16.0	10/17/2017	ND	416	104	400	3.77	QM-07

Sample ID: SB1 @ 50 (H702779-07)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	9200	16.0	10/17/2017	ND	416	104	400	3.77	

Sample ID: SB1 @ 55 (H702779-08)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	10/17/2017	ND	416	104	400	3.77	

Sample ID: SB1 @ 60 (H702779-09)

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	10/17/2017	ND	416	104	400	3.77	

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:	10/13/2017	Sampling Date:	10/12/2017
Reported:	10/19/2017	Sampling Type:	Soil
Project Name:	LOCO HILLS SWD PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: SB1 @ 65 (H702779-10)

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	10/17/2017	ND	416	104	400	3.77		

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



CARDINAL LABORATORIES

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: BBC International, Inc.		BILL TO		ANALYSIS REQUEST																							
Project Manager: Cliff Brunson		P.O. #:																									
Address: P.O. Box 805		Company:																									
City: Hobbs		Attn:																									
Phone #: 575-397-6388		Address:																									
State: NM Zip: 88241		City:																									
Fax #: 575-397-0397		State:																									
Project #:		Zip:																									
Project Name: LOCO HILLS SUD PIPELINE		Phone #:																									
Project Location: Lea County		Fax #:																									
Sampler Name: Jeff Ornelas																											
FOR LAB USE ONLY																											
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX			PRESERV	SAMPLING																			
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME													
H702779	SB 1 @ 20	✓	1	✓		✓							10:217	8:16	✓												
1	SB 1 @ 25	✓	1	✓		✓								8:25	✓												
2	SB 1 @ 30	✓	1	✓		✓								8:40	✓												
3	SB 1 @ 35	✓	1	✓		✓								8:55	✓												
4	SB 1 @ 40	✓	1	✓		✓								9:11	✓												
5	SB 1 @ 45	✓	1	✓		✓								9:21	✓												
6	SB 1 @ 50	✓	1	✓		✓								9:35	✓												
7	SB 1 @ 55	✓	1	✓		✓								9:56	✓												
8	SB 1 @ 60	✓	1	✓		✓								10:15	✓												
9	SB 1 @ 65	✓	1	✓		✓								10:40	✓												
10	SB 1 @ 70	✓	1	✓		✓																					

PLEASE NOTE: Liability and Damages: Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business 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 reasons or otherwise.

Relinquished By:	Date:	Received By:	Phone Result:	Fax Result:	REMARKS:
<i>Jeff Ornelas</i>		<i>Jeff Ornelas</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Relinquished By:	Date:	Received By:	Phone Result:	Fax Result:	REMARKS:
<i>Jeff Ornelas</i>		<i>Jeff Ornelas</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Delivered By: (Circle One)	Date:	Sample Condition	CHECKED BY:	Intact:	Initials
<i>Jeff Ornelas</i>		<i>Jeff Ornelas</i>	<i>Jeff Ornelas</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Sampler - UPS - Bus - Other:	Date:	Sample Condition	CHECKED BY:	Intact:	Initials
<i>Jeff Ornelas</i>		<i>Jeff Ornelas</i>	<i>Jeff Ornelas</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	

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

#75 corrected to 85°C



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

October 30, 2017

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: LOCO HILLS SWD PIPELINE

Enclosed are the results of analyses for samples received by the laboratory on 10/23/17 15:56.

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,

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

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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

Received:	10/23/2017	Sampling Date:	10/23/2017
Reported:	10/30/2017	Sampling Type:	Soil
Project Name:	LOCO HILLS SWD PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	529 - MALJAMAR		

Sample ID: NORTH @ SURFACE (H702900-01)

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	10/27/2017	ND	1.72	86.1	2.00	0.774	
Toluene*	<0.050	0.050	10/27/2017	ND	1.72	85.8	2.00	0.184	
Ethylbenzene*	<0.050	0.050	10/27/2017	ND	1.72	86.2	2.00	0.0198	
Total Xylenes*	<0.150	0.150	10/27/2017	ND	5.15	85.8	6.00	0.319	
Total BTEX	<0.300	0.300	10/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.7 % 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	112	16.0	10/26/2017	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	10/26/2017	ND	157	78.6	200	6.02	
DRO >C10-C28	<10.0	10.0	10/26/2017	ND	171	85.6	200	7.78	
EXT DRO >C28-C36	<10.0	10.0	10/26/2017	ND					

Surrogate: 1-Chlorooctane 60.6 % 28.3-164

Surrogate: 1-Chlorooctadecane 67.1 % 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:	10/23/2017	Sampling Date:	10/23/2017
Reported:	10/30/2017	Sampling Type:	Soil
Project Name:	LOCO HILLS SWD PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	529 - MALJAMAR		

Sample ID: EAST @ SURFACE (H702900-02)

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	10/27/2017	ND	1.72	86.1	2.00	0.774		
Toluene*	<0.050	0.050	10/27/2017	ND	1.72	85.8	2.00	0.184		
Ethylbenzene*	<0.050	0.050	10/27/2017	ND	1.72	86.2	2.00	0.0198		
Total Xylenes*	<0.150	0.150	10/27/2017	ND	5.15	85.8	6.00	0.319		
Total BTEX	<0.300	0.300	10/27/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 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	112	16.0	10/26/2017	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	10/26/2017	ND	157	78.6	200	6.02	
DRO >C10-C28	<10.0	10.0	10/26/2017	ND	171	85.6	200	7.78	
EXT DRO >C28-C36	<10.0	10.0	10/26/2017	ND					

Surrogate: 1-Chlorooctane 66.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 74.2 % 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:	10/23/2017	Sampling Date:	10/23/2017
Reported:	10/30/2017	Sampling Type:	Soil
Project Name:	LOCO HILLS SWD PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	529 - MALJAMAR		

Sample ID: WEST @ SURFACE (H702900-03)

BTEx 8021B			mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/27/2017	ND	1.72	86.1	2.00	0.774		
Toluene*	<0.050	0.050	10/27/2017	ND	1.72	85.8	2.00	0.184		
Ethylbenzene*	<0.050	0.050	10/27/2017	ND	1.72	86.2	2.00	0.0198		
Total Xylenes*	<0.150	0.150	10/27/2017	ND	5.15	85.8	6.00	0.319		
Total BTEx	<0.300	0.300	10/27/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.0 % 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	112	16.0	10/26/2017	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	10/26/2017	ND	157	78.6	200	6.02	
DRO >C10-C28	<10.0	10.0	10/26/2017	ND	171	85.6	200	7.78	
EXT DRO >C28-C36	<10.0	10.0	10/26/2017	ND					

Surrogate: 1-Chlorooctane 62.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 65.5 % 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:	10/23/2017	Sampling Date:	10/23/2017
Reported:	10/30/2017	Sampling Type:	Soil
Project Name:	LOCO HILLS SWD PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	529 - MALJAMAR		

Sample ID: SOUTH @ SURFACE (H702900-04)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/28/2017	ND	1.72	86.1	2.00	0.774	
Toluene*	<0.050	0.050	10/28/2017	ND	1.72	85.8	2.00	0.184	
Ethylbenzene*	<0.050	0.050	10/28/2017	ND	1.72	86.2	2.00	0.0198	
Total Xylenes*	<0.150	0.150	10/28/2017	ND	5.15	85.8	6.00	0.319	
Total BTEX	<0.300	0.300	10/28/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.0 % 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	144	16.0	10/26/2017	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	10/26/2017	ND	157	78.6	200	6.02	
DRO >C10-C28	<10.0	10.0	10/26/2017	ND	171	85.6	200	7.78	
EXT DRO >C28-C36	<10.0	10.0	10/26/2017	ND					

Surrogate: 1-Chlorooctane 77.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 82.4 % 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

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

Cardinal Laboratories

*=Accredited Analyte

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

ORDINAL LABORATORIES

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: BBC International, Inc.

Project Manager: Cliff Brunson

Address: P.O. Box 805

City: Hobbs

Phone #: 575-397-6388

Project #:

Project Name: L. Co. Hills JWD Pipeline

Project Location: S-25-103222

Sample Name: 10

FOR LAB USE ONLY

P.O. #:

Company:

Attn:

Address:

City:

State: NM **Zip:** 88241

Phone #:

Fax #:

State: NM **Zip:** 88241

Fax #:

Project Owner: Co G

Attn:

Address:

City:

State: NM **Zip:**

Phone #:

Fax #:

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV	SAMPLING	DATE	TIME	TPH Extended	BTX	c1-	
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :								
H102900																	
1	Northern SW		1			X						10-23	11:05	X	X	X	
2	East SW		1			X						10-23	11:20	X	X	X	
3	West SW		1			X						10-23	11:50	X	X	X	
4	South SW		1			X						10-23	12:30	X	X	X	

Relinquished By: *[Signature]* **Date:** 10-23-17 **Received By:** *[Signature]*

Time: 3:56 **Received By:** *[Signature]*

Relinquished By: *[Signature]* **Date:** 10-23-17 **Received By:** *[Signature]*

Time: 3:56 **Received By:** *[Signature]*

Delivered By: (Circle One) 3.46 **Sample Condition:** Cool ☒ Intact ☐

Sampler: UPS - Bus - Other: *[Signature]* **Checked By:** (Initials) *[Signature]*

REMARKS:

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



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

February 14, 2018

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: LOCO HILLS SWD

Enclosed are the results of analyses for samples received by the laboratory on 02/08/18 15:00.

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,

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

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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

Received:	02/08/2018	Sampling Date:	01/30/2018
Reported:	02/14/2018	Sampling Type:	Soil
Project Name:	LOCO HILLS SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	529 - MALJAMAR		

Sample ID: 1 (H800411-01)

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	02/09/2018	ND	1.75	87.4	2.00	23.7	
Toluene*	<0.050	0.050	02/09/2018	ND	1.77	88.5	2.00	22.3	
Ethylbenzene*	<0.050	0.050	02/09/2018	ND	1.76	87.9	2.00	23.4	
Total Xylenes*	<0.150	0.150	02/09/2018	ND	5.25	87.5	6.00	22.5	
Total BTEX	<0.300	0.300	02/09/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 115 % 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	02/12/2018	ND	416	104	400	3.77	

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	02/13/2018	ND	198	98.8	200	9.18	
DRO >C10-C28*	<10.0	10.0	02/13/2018	ND	199	99.3	200	11.2	
EXT DRO >C28-C36	<10.0	10.0	02/13/2018	ND					

Surrogate: 1-Chlorooctane 85.0 % 41-142

Surrogate: 1-Chlorooctadecane 84.2 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received:	02/08/2018	Sampling Date:	01/30/2018
Reported:	02/14/2018	Sampling Type:	Soil
Project Name:	LOCO HILLS SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	529 - MALJAMAR		

Sample ID: 2 (H800411-02)

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	02/10/2018	ND	1.75	87.4	2.00	23.7		
Toluene*	<0.050	0.050	02/10/2018	ND	1.77	88.5	2.00	22.3		
Ethylbenzene*	<0.050	0.050	02/10/2018	ND	1.76	87.9	2.00	23.4		
Total Xylenes*	<0.150	0.150	02/10/2018	ND	5.25	87.5	6.00	22.5		
Total BTEX	<0.300	0.300	02/10/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	02/12/2018	ND	416	104	400	3.77	

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	02/13/2018	ND	198	98.8	200	9.18	
DRO >C10-C28*	<10.0	10.0	02/13/2018	ND	199	99.3	200	11.2	
EXT DRO >C28-C36	<10.0	10.0	02/13/2018	ND					

Surrogate: 1-Chlorooctane 82.8 % 41-142

Surrogate: 1-Chlorooctadecane 82.4 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received:	02/08/2018	Sampling Date:	01/30/2018
Reported:	02/14/2018	Sampling Type:	Soil
Project Name:	LOCO HILLS SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	529 - MALJAMAR		

Sample ID: 3 (H800411-03)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/10/2018	ND	1.75	87.4	2.00	23.7		
Toluene*	<0.050	0.050	02/10/2018	ND	1.77	88.5	2.00	22.3		
Ethylbenzene*	<0.050	0.050	02/10/2018	ND	1.76	87.9	2.00	23.4		
Total Xylenes*	<0.150	0.150	02/10/2018	ND	5.25	87.5	6.00	22.5		
Total BTEX	<0.300	0.300	02/10/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 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	02/12/2018	ND	416	104	400	3.77	

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	02/13/2018	ND	198	98.8	200	9.18	
DRO >C10-C28*	<10.0	10.0	02/13/2018	ND	199	99.3	200	11.2	
EXT DRO >C28-C36	<10.0	10.0	02/13/2018	ND					

Surrogate: 1-Chlorooctane 81.8 % 41-142

Surrogate: 1-Chlorooctadecane 78.8 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received:	02/08/2018	Sampling Date:	01/30/2018
Reported:	02/14/2018	Sampling Type:	Soil
Project Name:	LOCO HILLS SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	529 - MALJAMAR		

Sample ID: 4 (H800411-04)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/10/2018	ND	1.75	87.4	2.00	23.7		
Toluene*	<0.050	0.050	02/10/2018	ND	1.77	88.5	2.00	22.3		
Ethylbenzene*	<0.050	0.050	02/10/2018	ND	1.76	87.9	2.00	23.4		
Total Xylenes*	<0.150	0.150	02/10/2018	ND	5.25	87.5	6.00	22.5		
Total BTEX	<0.300	0.300	02/10/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	02/12/2018	ND	416	104	400	3.77	

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	02/13/2018	ND	198	98.8	200	9.18	
DRO >C10-C28*	<10.0	10.0	02/13/2018	ND	199	99.3	200	11.2	
EXT DRO >C28-C36	<10.0	10.0	02/13/2018	ND					

Surrogate: 1-Chlorooctane 73.0 % 41-142

Surrogate: 1-Chlorooctadecane 71.4 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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



Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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



CARDINAL LABORATORIES

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: BBC International, Inc.		BILL TO		ANALYSIS REQUEST									
Project Manager: Cliff Brunson		P.O. #:											
Address: P.O. Box 805		Company:											
City: Hobbs		Attn:											
Phone #: 575-397-6388		Address:											
Fax #: 575-397-0397		City:											
Project #:		State:											
Project Name: loco Hills BWD		Zip:											
Project Location:		Phone #:											
Sampler Name: Price Brunson		Fax #:											
FOR LAB USE ONLY													
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP.		# CONTAINERS		MATRIX		PRESERV.		SAMPLING	
				GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE	
				OTHER :		ACID/BASE:		ICE / COOL		OTHER :			
				DATE		TIME							
H500411		1		11/30/18		130						TPH EXT	
2		2		11/30/18		140						BTX	
3		3		11/30/18		150						CL	
4		4		11/30/18		200							
PLEASE NOTE: Liability and Damages. Cardinal's liability and clients' exclusive remedy for any claim arising out of or related to the performance of services hereunder for Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise, shall be limited to the amount paid by the client for the analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder for Cardinal.													
Relinquished By:		Date: 11/31/18		Received By:		Date: 11/31/18		Time: 4:00pm		Received By:		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:	
Relinquished By:		Date: 11/31/18		Received By:		Date: 11/31/18		Time: 4:00pm		Received By:		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Fax #:	
Delivered By: (Circle One)		Sample Condition		CHECKED BY:		REMARKS:							
Sampler - UPS - Bus - Other:		Cool <input type="checkbox"/> Intact <input type="checkbox"/>		Initials									
-2.7c		<input type="checkbox"/> Yes <input type="checkbox"/> No		70. #75									

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

1 of 1

From: Yu, Olivia, EMNRD
To: [Cliff Brunson](#); aaarias@blm.gov; [Shelly Tucker](#)
Cc: [Becky Haskell](#); [Ken Swinney](#); [Jennifer Gilkey](#); [Kathy Purvis](#)
Subject: RE: COG Loco Hills SWD - Delineation Workplan
Date: Tuesday, December 19, 2017 10:36:58 AM
Attachments: [approved 1RP4493 Delineation Workplan Loco Hills SWD Pipeline.pdf](#)
[Email notification \(C-141 Initial\) Loco Hills SWD Pipeline.pdf](#)

Mr. Brunson:

This release was issued a 1RP-4493 on February 24, 2017. See attachment.

One question: was the water table tagged at 65 ft. bgs for SB1?

NMOCD approves of the delineation completed and proposed remediation for 1RP-4493. Confirmation sidewall samples tested for BTEX, TPH extended, and chlorides are required. In the remediation report, please include an appropriately scaled map with the release point and confirmation sample locations demarcated with GPS coordinates.

Like approval from BLM required.

Thanks,

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

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

From: Cliff Brunson [mailto:cbrunson@bbcinternational.com]
Sent: Thursday, November 16, 2017 1:51 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>; aaarias@blm.gov; Shelly Tucker <stucker@blm.gov>
Cc: Becky Haskell <raskell@concho.com>; Ken Swinney <kswinney@bbcinternational.com>; Jennifer Gilkey <jgilkey@bbcinternational.com>; Kathy Purvis <kathy@bbcinternational.com>
Subject: COG Loco Hills SWD - Delineation Workplan

Olivia, Art, and Shelly,

Please find the attached Delineation Workplan and remediation proposal for the COG Loco Hills SWD Pipeline release site. COG is requesting that you review this plan and is looking forward to both the OCD's and BLM's approval.

If you have any questions, please let me know.

Thanks, Cliff

Cliff P. Brunson, CEI, CRS
President
BBC International, Inc.
World-Wide Environmental Specialists
Mailing Address:
P. O. Box 805
Hobbs, NM 88241-0805 USA
Shipping Address:
1324 W. Marland St.
Hobbs, NM 88240 USA
Phone: (575) 397-6388
Fax: (575) 397-0397
E-Mail: cbrunson@bbcinternational.com



Confidentiality Notice: This electronic transmission (and any attached documents) is intended only for the person(s) to whom it is addressed and may contain information that is privileged, confidential, or otherwise protected from disclosure. If you have received this transmission in error, please immediately notify the sender by e-mail or by telephone call to (575) 397-6388 for handling instructions. Any disclosure or distribution of the contents of this transmission by anyone other than the named recipient(s) is strictly prohibited.

From: Arias, Arthur
To: [Yu, Olivia, EMNRD](#)
Cc: [Cliff Brunson](#); [Shelly Tucker](#); [Becky Haskell](#); [Ken Swinney](#); [Jennifer Gilkey](#); [Kathy Purvis](#)
Subject: Re: COG Loco Hills SWD - Delineation Workplan
Date: Tuesday, December 19, 2017 10:58:58 AM

BLM approves the delineation work plan. Keep us informed when the work has been completed... Thank You....

Arthur Arias
aaarias@blm.gov
Environmental Protection Specialist
Bureau Of Land Management, Carlsbad Field Office
575-234-6230 Cell 575-499-3378

On Tue, Dec 19, 2017 at 10:36 AM, Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us> wrote:

Mr. Brunson:

This release was issued a 1RP-4493 on February 24, 2017. See attachment.

One question: was the water table tagged at 65 ft. bgs for SB1?

NMOCD approves of the delineation completed and proposed remediation for 1RP-4493. Confirmation sidewall samples tested for BTEX, TPH extended, and chlorides are required. In the remediation report, please include an appropriately scaled map with the release point and confirmation sample locations demarcated with GPS coordinates.

Like approval from BLM required.

Thanks,

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

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

From: Cliff Brunson [mailto:cbrunson@bbcinternational.com]
Sent: Thursday, November 16, 2017 1:51 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>; aaarias@blm.gov; Shelly Tucker <stucker@blm.gov>
Cc: Becky Haskell <rhaskell@concho.com>; Ken Swinney <kswinney@bbcinternational.com>; Jennifer Gilkey <jgilkey@bbcinternational.com>; Kathy Purvis <kathy@bbcinternational.com>
Subject: COG Loco Hills SWD - Delineation Workplan

Olivia, Art, and Shelly,

Please find the attached Delineation Workplan and remediation proposal for the COG Loco Hills SWD Pipeline release site. COG is requesting that you review this plan and is looking forward to both the OCD's and BLM's approval.

If you have any questions, please let me know.

Thanks, Cliff

Cliff P. Brunson, CEI, CRS

President

BBC International, Inc.

World-Wide Environmental Specialists

Mailing Address:

P. O. Box 805

Hobbs, NM 88241-0805 USA

Shipping Address:

1324 W. Marland St.

Hobbs, NM 88240 USA

Phone: (575) 397-6388

Fax: (575) 397-0397

E-Mail: cbrunson@bbcinternational.com



Confidentiality Notice: This electronic transmission (and any attached documents) is intended only for the person(s) to whom it is addressed and may contain information that is privileged, confidential, or otherwise protected from disclosure. If you have received this transmission in error, please immediately notify the sender by e-mail or by telephone call to (575) 397-6388 for handling instructions. Any disclosure or distribution of the contents of this transmission by anyone other than the named recipient(s) is strictly prohibited.

















