

Closure Report

Site Description

Site Name:	Pygmy 27 State #003H
Company:	COG Operating
Legal Description:	U/L B, Section 27, T21S, R33E
County:	Lea County, NM
GPS Coordinates:	N 32.45618° W-103.55782°

Release Data

Date of Release:	06/09/2017
Type of Release:	Oil and Produced water
Source of Release:	Compromised dump valve
Volume of Release:	80 bbls oil, 105 bbls produced water
Volume Recovered:	75 bbls oil, 100 bbls produced water

Remediation Specifications

Remediation Parameters:	Excavate the areas near SP1 and SP2 to a depth of 2 feet. The areas of SP3-SP5 will not required remediation but confirmation samples at original sample locations will be taken at 1.5 ft bgs. The areas of SP6-SP9 will be tilled and confirmation samples will be taken in this area. Backfill the site with clean soil and re-vegetate.	
Remediation Activities:	01/15/2018 to 01/22/2018	
Plan Sent to OCD:	08/29/2017	Email from Cliff Brunson to Olivia Yu
OCD Approval of Plan:	12/19/2017	Email from Olivia Yu to Cliff Brunson
Plan Sent to landowner:	10/15/2017	Email from Rebecca Haskell to Brad Blevins
Landowner Approval:	10/17/2017	Email from Brad Blevins to Rebecca Haskell

Supporting Documentation

Initial C-141	Signed 06/12/2017
Final C-141	Signed 02/09/2018
Site Diagram	July 2017
Groundwater Plot	150'-175'
TOPO Maps	July 2017
Lab Summary	07/17/2017-07/18/2017, 01/15/2018, and 04/09/2018
Lab Analysis	07/17/2017-07/18/2017, 01/15/2018, and 04/09/2018
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.

04/24/2018

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 OGRID # 229137	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-683-7443
Facility Name: Pygmy 27 State #003H	Facility Type: Tank Battery

Surface Owner: Private	Mineral Owner: State	API No. 30-025-42068
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LOCATION OF RELEASE

Unit Letter B	Section 27	Township 21S	Range 33E	Feet from the 190	North/South Line North	Feet from the 1980	East/West Line East	County Lea
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Latitude 32.4565239 Longitude -103.5581741

NATURE OF RELEASE

Type of Release: Oil and Produced Water	Volume of Release: 80 bbls Oil & 105 bbls PW	Volume Recovered: 75 bbls Oil & 100 bbls PW
Source of Release: Dump Valve	Date and Hour of Occurrence: June 9, 2017 5:30 am	Date and Hour of Discovery: June 9, 2017 5:30 am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Ms. Yu - NMOCD / Ms. Groves - SLO	
By Whom? Aaron Lieb	Date and Hour: June 9, 2017 10:31 am	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

RECEIVED

By Olivia Yu at 3:57 pm, Jun 15, 2017

Describe Cause of Problem and Remedial Action Taken.*

The release was due to a FWKO dump valve failure. The dump valve was replaced.

Describe Area Affected and Cleanup Action Taken.*

The release was within a lined facility, on location, and on the adjacent pasture. A vacuum truck was dispatched to remove all freestanding fluids. Concho will have the spill area sampled to delineate any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

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

Signature: <i>Rebecca Haskell</i>	OIL CONSERVATION DIVISION	
Printed Name: Rebecca Haskell	Approved by Environmental Specialist: <i>[Signature]</i>	
Title: Senior HSE Coordinator	Approval Date: 6/15/2017	Expiration Date:
E-mail Address: rhaskell@concho.com	Conditions of Approval: see attached directive	Attached <input checked="" type="checkbox"/>
Date: June 12, 2017 Phone: 432-683-7443		

Attach Additional Sheets If Necessary

1RP-4728

nOY1716657762

pOY1716658084

Operator/Responsible Party,

The OCD has received the form C-141 you provided on _6/12/2017_ regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number _1RP-4728__ has been assigned. **Please refer to this case number in all future correspondence.**

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

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

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District _1_ office in __Hobbs__ on or before 7/15/2017__.** If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.
- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.
- Nominal detection limits for field and laboratory analyses must be provided.
- Composite sampling is not generally allowed.
- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

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

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

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

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

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

Jim Griswold

OCD Environmental Bureau Chief
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505-476-3465
jim.griswold@state.nm.us

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
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1000 Rio Brazos Road, Aztec, NM 87410
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☐ Initial Report ☒ Final Report

Name of Company: COG Operating LLC	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland, TX 79701	Telephone No. 432-683-7443
Facility Name: Pygmy 27 State #003H	Facility Type: Tank Battery
Surface Owner: Private	Mineral Owner: State
API No. 30-025-42068	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	27	21S	33E	190	North	1980	East	Lea County, NM

Latitude N 32.45615° Longitude W 103.55797°

NATURE OF RELEASE

Type of Release: Oil and Produced water	Volume of Release: 80 bbls oil, 105 bbls produced water	Volume Recovered: 75 bbls oil, 100 bbls produced water
Source of Release: Dump valve	Date and Hour of Occurrence 06/09/2017 @ 5:30 am	Date and Hour of Discovery 06/09/2017 @ 5:30 am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Olivia Yu, NMOCD; Amber Groves, SLO	
By Whom? Aaron Lieb	Date and Hour: 06/09/2017 @ 10:31 am	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The release was due to a FWKO dump valve failure. The dump valve was replaced.

Describe Area Affected and Cleanup Action Taken.*

This release was within a lined facility, on location, and on the adjacent pasture. Vacuum trucks were dispatched to recover standing fluids. 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.

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>Ashley Maxwell</i>	
Title: Senior HSE Coordinator	Approval Date: 11/17/2022	Expiration Date:
E-mail Address: rhaskell@concho.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: February 9, 2018 Phone: (432) 683-7443		

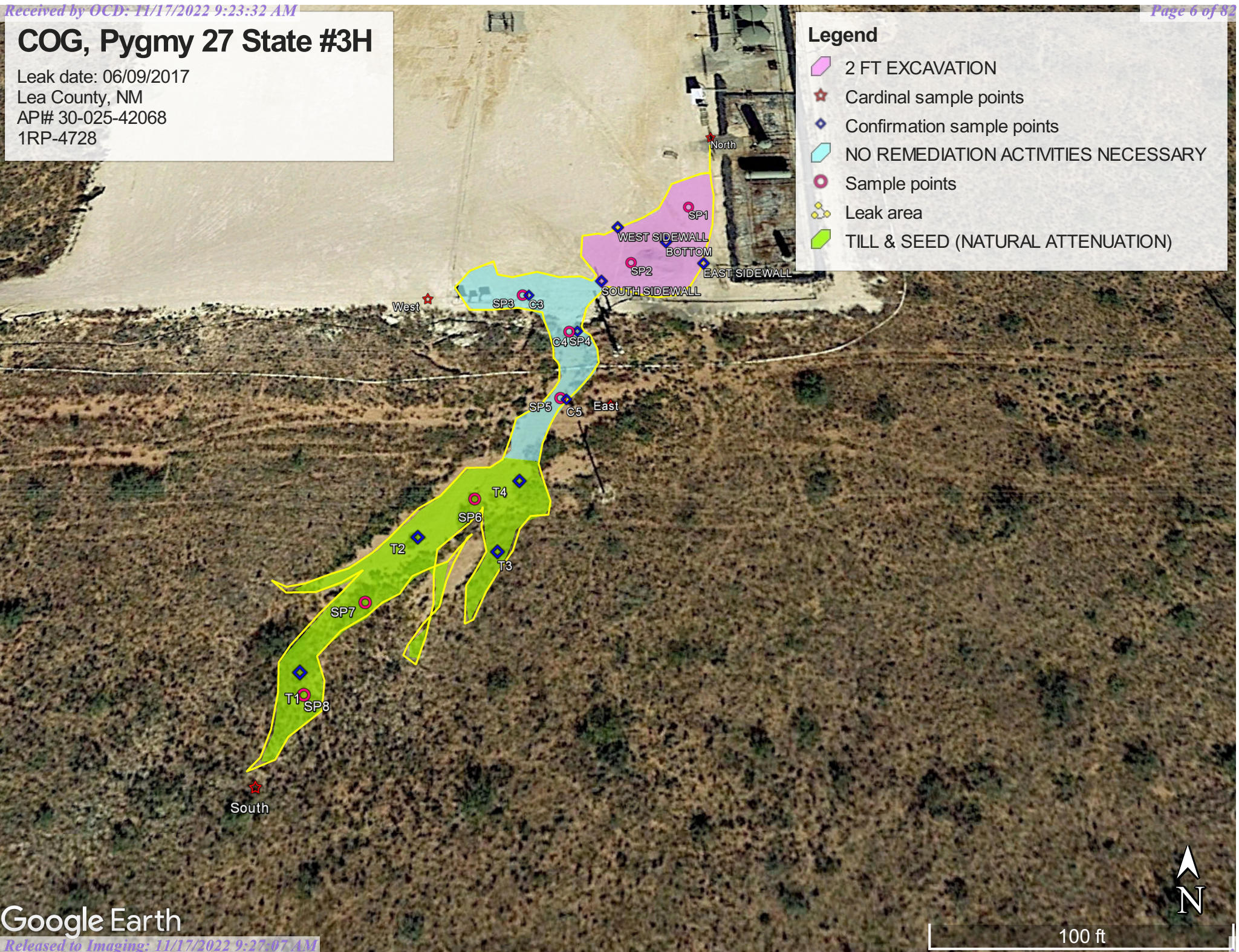
Attach Additional Sheets If Necessary

COG, Pygmy 27 State #3H

Leak date: 06/09/2017
Lea County, NM
API# 30-025-42068
1RP-4728

Legend

- 2 FT EXCAVATION
- Cardinal sample points
- Confirmation sample points
- NO REMEDIATION ACTIVITIES NECESSARY
- Sample points
- Leak area
- TILL & SEED (NATURAL ATTENUATION)



COG, Pygmy 27 State #3H

Sample points, hand auger

SP1, N 32.45617 W-103.55789

SP2, N 32.45607 W-103.55798

SP3, N 32.45601 W-103.55814

SP4, N 32.45595 W-103.55807

SP5, N 32.45585 W-103.55808

SP6, N 32.45571 W-103.55819

SP7, N 32.45558 W-103.55832

SP8, N 32.45547 W-103.55838

SP9, N 32.45562 W-103.55816

NORTH, N 32.45630 W-103.55785

SOUTH, N 32.45537 W-103.55842

EAST, N 32.45584 W-103.55801

WEST, N 32.45601 W-103.55828

Confirmation samples, hand auger

C3, N 32.45601 W-103.55814

C4, N 32.45595 W-103.55807

C5, N 32.45585 W-103.55808

T1, N 32.45549 W-103.55838

T2, N 32.45566 W-103.55826

T3, N 32.45563 W-103.55815

T4, N 32.45573 W-103.55813

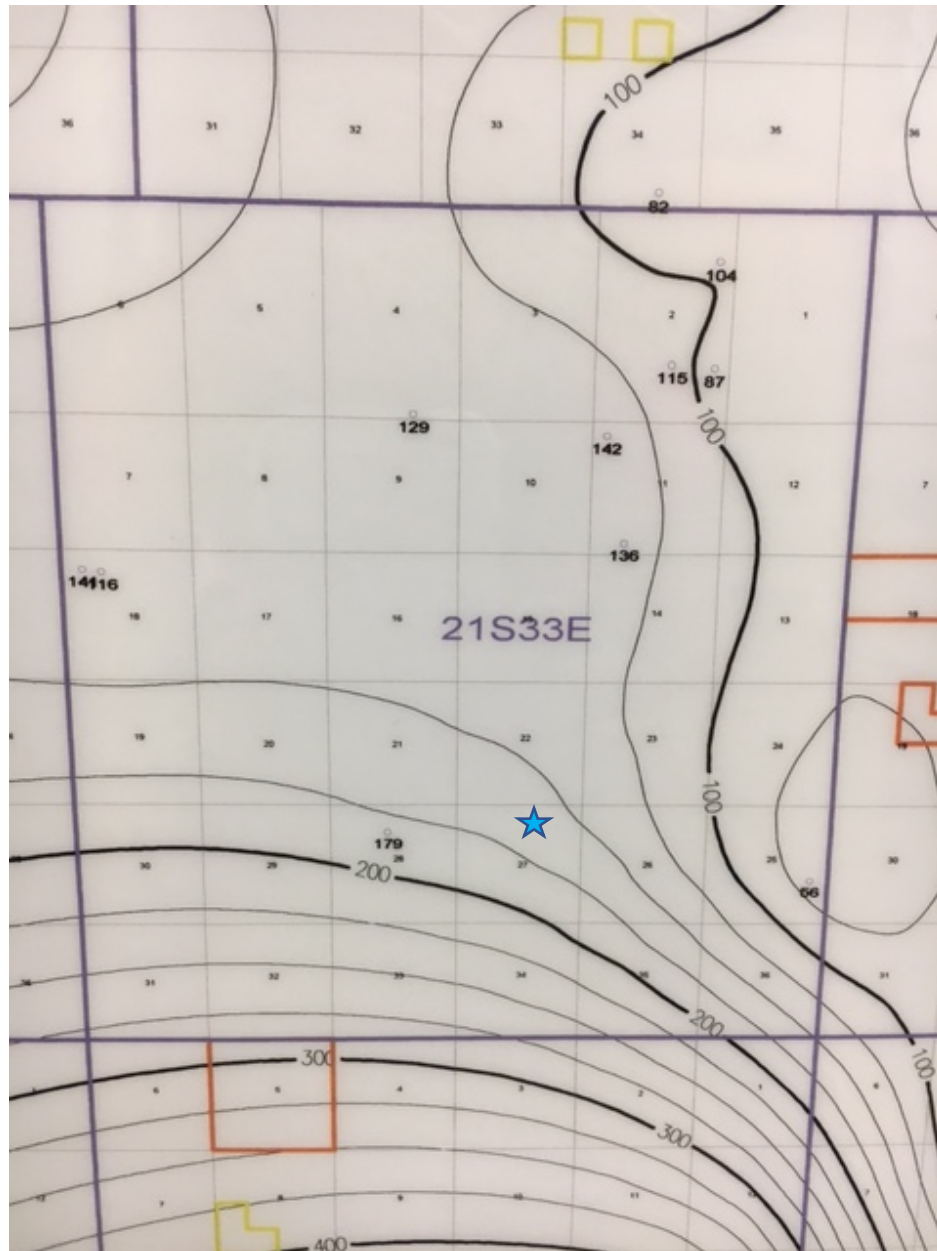
WEST SIDEWALL, N 32.45612 W-103.55800

BOTTOM, N 32.45610 W-103.55792

EAST SIDEWALL, N 32.45606 W-103.55787

SOUTH SIDEWALL, N 32.45603 W-103.55802

COG, Pygmy 27 State #003H
U/L B, Section 27, T21S, R33E
Groundwater: 150'-175'





New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

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

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
CP 01349 POD1		CP	LE	2	3	1	27	21S	33E	635304	3591576	<input type="checkbox"/>	317	1188	572 616
CP 01357 POD1		CP	LE	4	3	1	27	21S	33E	634782	3591347	<input type="checkbox"/>	868	1286	578 708
CP 01355 POD1		CP	LE	2	1	3	27	21S	33E	634773	3591061	<input type="checkbox"/>	1056	1192	582 610
CP 01411 POD2		CP	LE		1	2	34	21S	33E	635534	3590380	<input type="checkbox"/>	1433	1125	
CP 01411 POD1		CP	LE	2	2	34	21S	33E	635968	3590386	<input type="checkbox"/>	1498	1149		

Average Depth to Water: **577 feet**

Minimum Depth: **572 feet**

Maximum Depth: **582 feet**

Record Count: 5

UTM NAD83 Radius Search (in meters):

Easting (X): 635515

Northing (Y): 3591814

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.

8/2/17 9:13 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

Public Land Survey System (PLSS)					
Q64:	Q16: NW	Q4: NE	Sec: 27	Tws: 21S	Rng: 33E

State Plane Coordinate System - NAD27					
X:	ft	Y:	ft	Zone:	

State Plane Coordinate System - NAD83					
X:	ft	Y:	ft	Zone:	

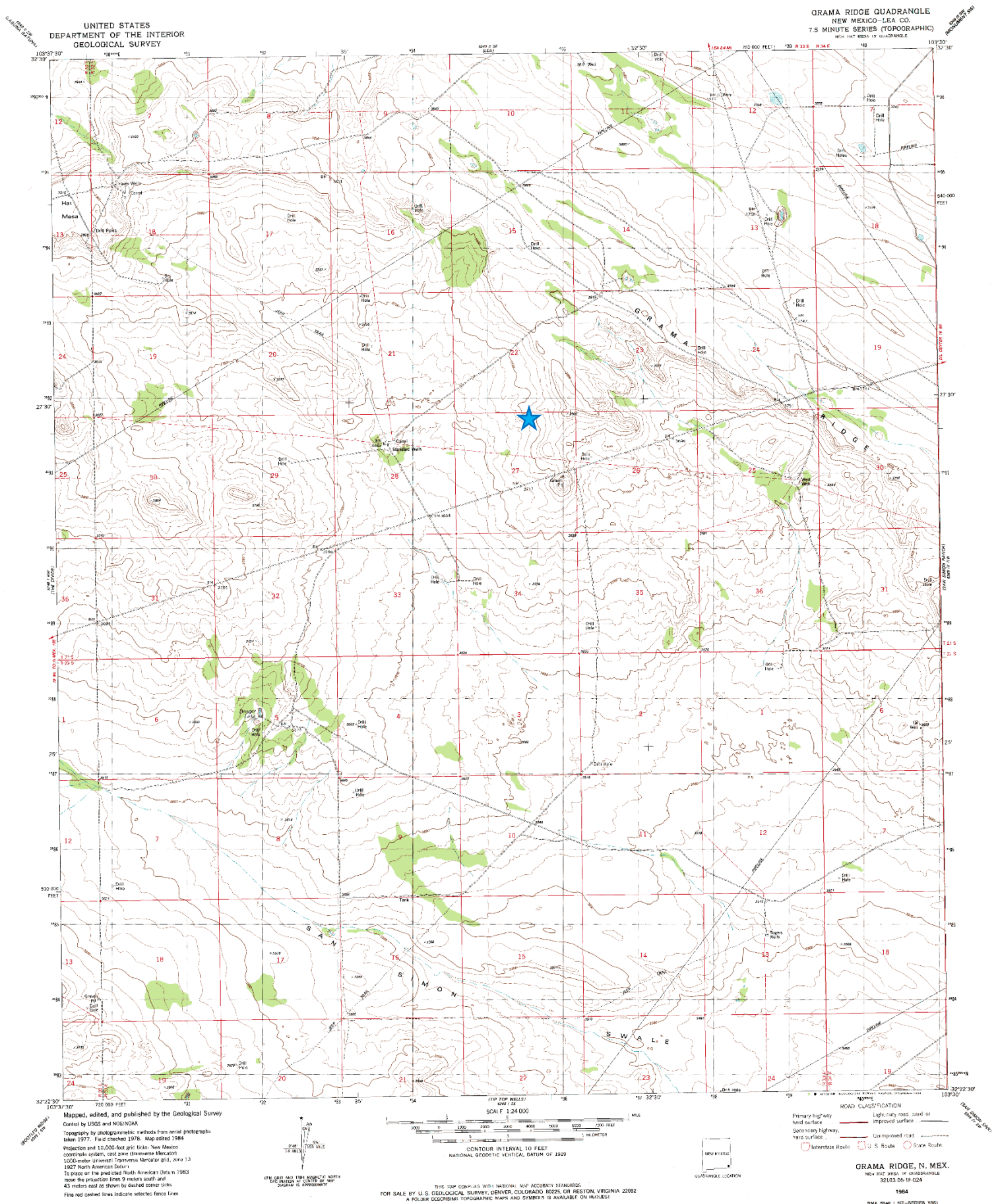
Degrees/Minutes/Seconds					
Longitude (X):	Degrees:	°	Minutes:	'	Seconds: "
Latitude (Y):	Degrees:	°	Minutes:	'	Seconds: "

UTM - NAD27					
Easting (X):	mtrs	Northing (Y):	mtrs	Zone:	

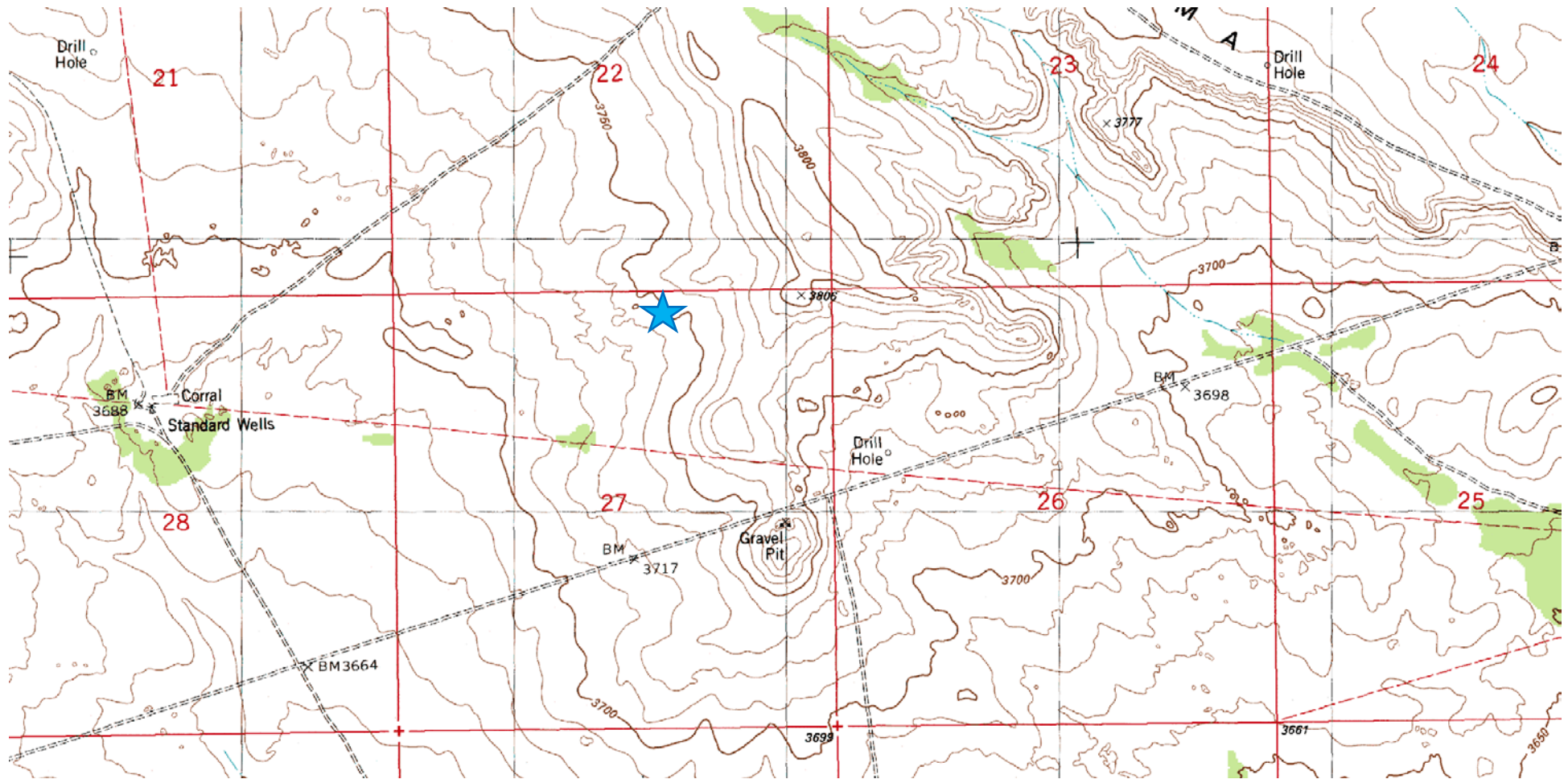
SUBMIT

All Conversion Results are displayed as <u>NAD 1983 UTM Zone 13</u>					
Easting (X):	635515.0	mtrs	Northing (Y):	3591814.0	mtrs
~~ Please keep screen open to copy UTM values for Reports. ~~					

COG, Pygmy 27 State #003H



COG, Pygmy 27 State #003H



Laboratory Analytical Results Summary
PYGMY 27 STATE #3H

		Sample	SP1 @ 1'	SP1 @ 2'	SP1 @ 3'	SP1 @ 8'	SP1 @ 10'
Analyte	Method	Date	7/17/17	7/17/17	7/17/17	7/17/17	7/17/17
			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Benzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B		<0.150	<0.150	<0.150	<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	<0.300	<0.300	<0.300	<0.300
Chloride	SM4500Cl-B		1360	96	160	64	80
GRO	TPH 8015M		<10.0	<10.0	<10.0	<10.0	<10.0
DRO	TPH 8015M		92.9	<10.0	<10.0	<10.0	<10.0

		Sample	SP2 @ 1'	SP2 @ 2'	SP2 @ 3'	SP2 @ 8'	SP2 @ 10'
Analyte	Method	Date	7/17/17	7/17/17	7/17/17	7/17/17	7/17/17
			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Benzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B		<0.150	<0.150	<0.150	<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	<0.300	<0.300	<0.300	<0.300
Chloride	SM4500Cl-B		1280	64	32	16	16
GRO	TPH 8015M		<10.0	<10.0	<10.0	<10.0	<10.0
DRO	TPH 8015M		139	<10.0	<10.0	<10.0	<10.0

		Sample	SP3 @ SURFACE
Analyte	Method	Date	7/17/17
			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		80
GRO	TPH 8015M		<10.0
DRO	TPH 8015M		28.9

		Sample	SP4 @ SURFACE
Analyte	Method	Date	7/17/17
			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

		Sample	SP5 @ SURFACE
Analyte	Method	Date	7/18/17
			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

		Sample	SP6 @ SURFACE	SP6 @ 1'	SP6 @ 6'	SP6 @ 7'
Analyte	Method	Date	7/18/17	7/18/17	7/18/17	7/18/17
			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		144	32	16	48
GRO	TPH 8015M		<50.0	<10.0	<10.0	<10.0
DRO	TPH 8015M		12100	<10.0	<10.0	<10.0

		Sample	SP7 @ SURFACE	SP7 @ 1'	SP7 @ 6'	SP7 @ 7'
Analyte	Method	Date	7/18/17	7/18/17	7/18/17	7/18/17
			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		96	16	<16.0	32
GRO	TPH 8015M		<50.0	<10.0	<10.0	<10.0
DRO	TPH 8015M		6290	<10.0	<10.0	<10.0

		Sample	SP8 @ SURFACE	SP8 @ 1'	SP8 @ 6'	SP8 @ 7'
Analyte	Method	Date	7/18/17	7/18/17	7/18/17	7/18/17
			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		96	32	48	48
GRO	TPH 8015M		<50.0	<10.0	<10.0	<10.0
DRO	TPH 8015M		3710	12.4	<10.0	42.1

**Laboratory Analytical Results Summary
PYGMY 27 STATE #3H**

		Sample	SP9 @ SURFACE	SP9 @ 1'	SP9 @ 6'	SP9 @ 7'
Analyte	Method	Date	7/18/17	7/18/17	7/18/17	7/18/17
			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	48	48	32
GRO	TPH 8015M		<50.0	<10.0	<10.0	<10.0
DRO	TPH 8015M		4090	<10.0	<10.0	<10.0

		Sample	SOUTH @ SURFACE
Analyte	Method	Date	7/18/17
			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		16
GRO	TPH 8015M		<10.0
DRO	TPH 8015M		<10.0

		Sample	NORTH @ SURFACE
Analyte	Method	Date	7/18/17
			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

		Sample	EAST @ SURFACE
Analyte	Method	Date	7/18/17
			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

		Sample	WEST @ SURFACE
Analyte	Method	Date	7/18/17
			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

Analyte	Method	Sample ID	C3 @ 1.5'
		Date	1/15/18
			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		<16.0
GRO	TPH 8015M		<10.0
DRO	TPH 8015M		17.2
EXT DRO	TPH 8015M		<10.0

Analyte	Method	Sample ID	C4 @ 1.5'
		Date	1/15/18
			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		<16.0
GRO	TPH 8015M		15
DRO	TPH 8015M		21.8
EXT DRO	TPH 8015M		<10.0

Analyte	Method	Sample ID	C5 @ 1.5'
		Date	1/15/18
			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

Analyte	Method	Sample ID	T1 @ 6"
		Date	1/15/18
			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
GRO	TPH 8015M		10.6
DRO	TPH 8015M		27.3
EXT DRO	TPH 8015M		13.4

Analyte	Method	Sample ID	T2 @ 6"
		Date	1/15/18
			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
GRO	TPH 8015M		12.8
DRO	TPH 8015M		<10.0
EXT DRO	TPH 8015M		<10.0

Analyte	Method	Sample ID	T3 @ 6"
		Date	1/15/18
			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
GRO	TPH 8015M		12.3
DRO	TPH 8015M		<10.0
EXT DRO	TPH 8015M		<10.0

Analyte	Method	Sample ID	T4 @ 6"
		Date	1/15/18
			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
GRO	TPH 8015M		17.3
DRO	TPH 8015M		18.8
EXT DRO	TPH 8015M		<10.0

Analyte	Method	Sample ID	WEST SIDEWALL
		Date	4/9/18
			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

Analyte	Method	Sample ID	BOTTOM
		Date	4/9/18
			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		<16.0
GRO	TPH 8015M		<10.0
DRO	TPH 8015M		<10.0
EXT DRO	TPH 8015M		<10.0

Analyte	Method	Sample ID	EAST SIDEWALL
		Date	4/9/18
			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		<16.0
GRO	TPH 8015M		<10.0
DRO	TPH 8015M		<10.0
EXT DRO	TPH 8015M		<10.0

Analyte	Method	Sample ID	SOUTH SIDEWALL
		Date	4/9/18
			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		<16.0
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

August 01, 2017

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: PYGMY 27 STATE #3H

Enclosed are the results of analyses for samples received by the laboratory on 07/25/17 10:40.

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 style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/17/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ 1' (H701927-01)

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	07/26/2017	ND	2.15	107	2.00	0.414	
Toluene*	<0.050	0.050	07/26/2017	ND	2.01	101	2.00	1.38	
Ethylbenzene*	<0.050	0.050	07/26/2017	ND	2.07	103	2.00	0.170	
Total Xylenes*	<0.150	0.150	07/26/2017	ND	6.23	104	6.00	0.372	
Total BTX	<0.300	0.300	07/26/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 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	1360	16.0	07/25/2017	ND	432	108	400	3.64		

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	07/26/2017	ND	206	103	200	6.49	
DRO >C10-C28	92.9	10.0	07/26/2017	ND	213	107	200	8.22	

Surrogate: 1-Chlorooctane 94.6 % 28.3-164

Surrogate: 1-Chlorooctadecane 112 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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 Fax To: (575) 397-0397

Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/17/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ 2' (H701927-02)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/26/2017	ND	2.02	101	2.00	3.89	
Toluene*	<0.050	0.050	07/26/2017	ND	1.87	93.4	2.00	3.95	
Ethylbenzene*	<0.050	0.050	07/26/2017	ND	1.97	98.3	2.00	3.82	
Total Xylenes*	<0.150	0.150	07/26/2017	ND	5.90	98.3	6.00	3.97	
Total BTX	<0.300	0.300	07/26/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 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	96.0	16.0	07/25/2017	ND	432	108	400	3.64	

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	07/26/2017	ND	206	103	200	6.49	
DRO >C10-C28	<10.0	10.0	07/26/2017	ND	213	107	200	8.22	

Surrogate: 1-Chlorooctane 105 % 28.3-164

Surrogate: 1-Chlorooctadecane 115 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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 Fax To: (575) 397-0397

Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/17/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ 3' (H701927-03)

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	07/26/2017	ND	2.02	101	2.00	3.89	
Toluene*	<0.050	0.050	07/26/2017	ND	1.87	93.4	2.00	3.95	
Ethylbenzene*	<0.050	0.050	07/26/2017	ND	1.97	98.3	2.00	3.82	
Total Xylenes*	<0.150	0.150	07/26/2017	ND	5.90	98.3	6.00	3.97	
Total BTX	<0.300	0.300	07/26/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 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	160	16.0	07/25/2017	ND	432	108	400	3.64	

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	07/26/2017	ND	206	103	200	6.49	
DRO >C10-C28	<10.0	10.0	07/26/2017	ND	213	107	200	8.22	

Surrogate: 1-Chlorooctane 98.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 111 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/17/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ 8' (H701927-04)

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	07/26/2017	ND	2.02	101	2.00	3.89	
Toluene*	<0.050	0.050	07/26/2017	ND	1.87	93.4	2.00	3.95	
Ethylbenzene*	<0.050	0.050	07/26/2017	ND	1.97	98.3	2.00	3.82	
Total Xylenes*	<0.150	0.150	07/26/2017	ND	5.90	98.3	6.00	3.97	
Total BTX	<0.300	0.300	07/26/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 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	64.0	16.0	07/25/2017	ND	432	108	400	3.64	

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	07/26/2017	ND	206	103	200	6.49	
DRO >C10-C28	<10.0	10.0	07/26/2017	ND	213	107	200	8.22	

Surrogate: 1-Chlorooctane 114 % 28.3-164

Surrogate: 1-Chlorooctadecane 124 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/17/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ 10' (H701927-05)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/26/2017	ND	2.02	101	2.00	3.89		
Toluene*	<0.050	0.050	07/26/2017	ND	1.87	93.4	2.00	3.95		
Ethylbenzene*	<0.050	0.050	07/26/2017	ND	1.97	98.3	2.00	3.82		
Total Xylenes*	<0.150	0.150	07/26/2017	ND	5.90	98.3	6.00	3.97		
Total BTEx	<0.300	0.300	07/26/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	07/25/2017	ND	432	108	400	3.64		

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	07/26/2017	ND	206	103	200	6.49	
DRO >C10-C28	<10.0	10.0	07/26/2017	ND	213	107	200	8.22	

Surrogate: 1-Chlorooctane 108 % 28.3-164

Surrogate: 1-Chlorooctadecane 118 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/17/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ 1' (H701927-06)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/26/2017	ND	2.02	101	2.00	3.89	
Toluene*	<0.050	0.050	07/26/2017	ND	1.87	93.4	2.00	3.95	
Ethylbenzene*	<0.050	0.050	07/26/2017	ND	1.97	98.3	2.00	3.82	
Total Xylenes*	<0.150	0.150	07/26/2017	ND	5.90	98.3	6.00	3.97	
Total BTX	<0.300	0.300	07/26/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 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	1280	16.0	07/25/2017	ND	432	108	400	3.64		

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	07/26/2017	ND	206	103	200	6.49	
DRO >C10-C28	139	10.0	07/26/2017	ND	213	107	200	8.22	

Surrogate: 1-Chlorooctane 106 % 28.3-164

Surrogate: 1-Chlorooctadecane 123 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/17/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ 2' (H701927-07)

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	07/26/2017	ND	2.02	101	2.00	3.89	
Toluene*	<0.050	0.050	07/26/2017	ND	1.87	93.4	2.00	3.95	
Ethylbenzene*	<0.050	0.050	07/26/2017	ND	1.97	98.3	2.00	3.82	
Total Xylenes*	<0.150	0.150	07/26/2017	ND	5.90	98.3	6.00	3.97	
Total BTX	<0.300	0.300	07/26/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 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	64.0	16.0	07/25/2017	ND	432	108	400	3.64	

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	07/25/2017	ND	187	93.3	200	2.85	
DRO >C10-C28	<10.0	10.0	07/25/2017	ND	195	97.5	200	2.00	

Surrogate: 1-Chlorooctane 90.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 95.4 % 34.7-157

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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/17/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ 3' (H701927-08)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/26/2017	ND	2.02	101	2.00	3.89		
Toluene*	<0.050	0.050	07/26/2017	ND	1.87	93.4	2.00	3.95		
Ethylbenzene*	<0.050	0.050	07/26/2017	ND	1.97	98.3	2.00	3.82		
Total Xylenes*	<0.150	0.150	07/26/2017	ND	5.90	98.3	6.00	3.97		
Total BTEx	<0.300	0.300	07/26/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 110 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/25/2017	ND	432	108	400	3.64	

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	07/25/2017	ND	187	93.3	200	2.85	
DRO >C10-C28	<10.0	10.0	07/25/2017	ND	195	97.5	200	2.00	

Surrogate: 1-Chlorooctane 95.2 % 28.3-164

Surrogate: 1-Chlorooctadecane 97.3 % 34.7-157

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Analytical Results For:

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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/17/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ 8' (H701927-09)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/26/2017	ND	2.02	101	2.00	3.89	
Toluene*	<0.050	0.050	07/26/2017	ND	1.87	93.4	2.00	3.95	
Ethylbenzene*	<0.050	0.050	07/26/2017	ND	1.97	98.3	2.00	3.82	
Total Xylenes*	<0.150	0.150	07/26/2017	ND	5.90	98.3	6.00	3.97	
Total BTEx	<0.300	0.300	07/26/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	07/25/2017	ND	432	108	400	3.64		

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	07/25/2017	ND	187	93.3	200	2.85	
DRO >C10-C28	<10.0	10.0	07/25/2017	ND	195	97.5	200	2.00	

Surrogate: 1-Chlorooctane 86.3 % 28.3-164

Surrogate: 1-Chlorooctadecane 88.8 % 34.7-157

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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/17/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ 10' (H701927-10)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/27/2017	ND	2.11	106	2.00	1.48	
Toluene*	<0.050	0.050	07/27/2017	ND	1.97	98.3	2.00	1.23	
Ethylbenzene*	<0.050	0.050	07/27/2017	ND	2.03	102	2.00	0.627	
Total Xylenes*	<0.150	0.150	07/27/2017	ND	6.09	101	6.00	1.23	
Total BTEx	<0.300	0.300	07/27/2017	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	16.0	16.0	07/25/2017	ND	432	108	400	3.64	

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	07/25/2017	ND	187	93.3	200	2.85	
DRO >C10-C28	<10.0	10.0	07/25/2017	ND	195	97.5	200	2.00	

Surrogate: 1-Chlorooctane 94.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 96.5 % 34.7-157

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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/17/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ SURFACE (H701927-11)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/27/2017	ND	2.11	106	2.00	1.48		
Toluene*	<0.050	0.050	07/27/2017	ND	1.97	98.3	2.00	1.23		
Ethylbenzene*	<0.050	0.050	07/27/2017	ND	2.03	102	2.00	0.627		
Total Xylenes*	<0.150	0.150	07/27/2017	ND	6.09	101	6.00	1.23		
Total BTX	<0.300	0.300	07/27/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	07/25/2017	ND	432	108	400	3.64	

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	07/25/2017	ND	187	93.3	200	2.85	
DRO >C10-C28	28.9	10.0	07/25/2017	ND	195	97.5	200	2.00	

Surrogate: 1-Chlorooctane 78.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 80.0 % 34.7-157

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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/17/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 4 @ SURFACE (H701927-12)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/27/2017	ND	2.11	106	2.00	1.48	
Toluene*	<0.050	0.050	07/27/2017	ND	1.97	98.3	2.00	1.23	
Ethylbenzene*	<0.050	0.050	07/27/2017	ND	2.03	102	2.00	0.627	
Total Xylenes*	<0.150	0.150	07/27/2017	ND	6.09	101	6.00	1.23	
Total BTEx	<0.300	0.300	07/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 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	64.0	16.0	07/25/2017	ND	432	108	400	3.64	

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	07/26/2017	ND	187	93.3	200	2.85	
DRO >C10-C28	<10.0	10.0	07/26/2017	ND	195	97.5	200	2.00	

Surrogate: 1-Chlorooctane 89.3 % 28.3-164

Surrogate: 1-Chlorooctadecane 88.3 % 34.7-157

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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/18/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 5 @ SURFACE (H701927-13)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/27/2017	ND	2.11	106	2.00	1.48	
Toluene*	<0.050	0.050	07/27/2017	ND	1.97	98.3	2.00	1.23	
Ethylbenzene*	<0.050	0.050	07/27/2017	ND	2.03	102	2.00	0.627	
Total Xylenes*	<0.150	0.150	07/27/2017	ND	6.09	101	6.00	1.23	
Total BTEx	<0.300	0.300	07/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	07/26/2017	ND	432	108	400	3.64		

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	07/26/2017	ND	187	93.3	200	2.85	
DRO >C10-C28	<10.0	10.0	07/26/2017	ND	195	97.5	200	2.00	

Surrogate: 1-Chlorooctane 92.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 92.5 % 34.7-157

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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/18/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 6 @ SURFACE (H701927-14)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/27/2017	ND	2.11	106	2.00	1.48		
Toluene*	<0.050	0.050	07/27/2017	ND	1.97	98.3	2.00	1.23		
Ethylbenzene*	<0.050	0.050	07/27/2017	ND	2.03	102	2.00	0.627		
Total Xylenes*	<0.150	0.150	07/27/2017	ND	6.09	101	6.00	1.23		
Total BTX	<0.300	0.300	07/27/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 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	144	16.0	07/26/2017	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	07/26/2017	ND	187	93.3	200	2.85	
DRO >C10-C28	12100	50.0	07/26/2017	ND	195	97.5	200	2.00	

Surrogate: 1-Chlorooctane 90.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 549 % 34.7-157

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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/18/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 6 @ 1' (H701927-15)

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	07/27/2017	ND	2.11	106	2.00	1.48	
Toluene*	<0.050	0.050	07/27/2017	ND	1.97	98.3	2.00	1.23	
Ethylbenzene*	<0.050	0.050	07/27/2017	ND	2.03	102	2.00	0.627	
Total Xylenes*	<0.150	0.150	07/27/2017	ND	6.09	101	6.00	1.23	
Total BTEx	<0.300	0.300	07/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/26/2017	ND	432	108	400	3.64	

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	07/26/2017	ND	187	93.3	200	2.85	
DRO >C10-C28	<10.0	10.0	07/26/2017	ND	195	97.5	200	2.00	

Surrogate: 1-Chlorooctane 88.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 90.6 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/18/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 6 @ 6' (H701927-16)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/27/2017	ND	2.11	106	2.00	1.48	
Toluene*	<0.050	0.050	07/27/2017	ND	1.97	98.3	2.00	1.23	
Ethylbenzene*	<0.050	0.050	07/27/2017	ND	2.03	102	2.00	0.627	
Total Xylenes*	<0.150	0.150	07/27/2017	ND	6.09	101	6.00	1.23	
Total BTEx	<0.300	0.300	07/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	07/26/2017	ND	432	108	400	3.64	

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	07/26/2017	ND	187	93.3	200	2.85	
DRO >C10-C28	<10.0	10.0	07/26/2017	ND	195	97.5	200	2.00	

Surrogate: 1-Chlorooctane 86.2 % 28.3-164

Surrogate: 1-Chlorooctadecane 90.5 % 34.7-157

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Analytical Results For:

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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/18/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 6 @ 7' (H701927-17)

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	07/27/2017	ND	2.11	106	2.00	1.48		
Toluene*	<0.050	0.050	07/27/2017	ND	1.97	98.3	2.00	1.23		
Ethylbenzene*	<0.050	0.050	07/27/2017	ND	2.03	102	2.00	0.627		
Total Xylenes*	<0.150	0.150	07/27/2017	ND	6.09	101	6.00	1.23		
Total BTEx	<0.300	0.300	07/27/2017	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	07/26/2017	ND	432	108	400	3.64	

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	07/26/2017	ND	187	93.3	200	2.85	
DRO >C10-C28	<10.0	10.0	07/26/2017	ND	195	97.5	200	2.00	

Surrogate: 1-Chlorooctane 86.7 % 28.3-164

Surrogate: 1-Chlorooctadecane 91.5 % 34.7-157

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Analytical Results For:

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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/18/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 7 @ SURFACE (H701927-18)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/27/2017	ND	2.11	106	2.00	1.48		
Toluene*	<0.050	0.050	07/27/2017	ND	1.97	98.3	2.00	1.23		
Ethylbenzene*	<0.050	0.050	07/27/2017	ND	2.03	102	2.00	0.627		
Total Xylenes*	<0.150	0.150	07/27/2017	ND	6.09	101	6.00	1.23		
Total BTEX	<0.300	0.300	07/27/2017	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	96.0	16.0	07/26/2017	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	07/26/2017	ND	187	93.3	200	2.85	
DRO >C10-C28	6290	50.0	07/26/2017	ND	195	97.5	200	2.00	

Surrogate: 1-Chlorooctane 96.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 313 % 34.7-157

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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/18/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 7 @ 1' (H701927-19)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/27/2017	ND	2.11	106	2.00	1.48	
Toluene*	<0.050	0.050	07/27/2017	ND	1.97	98.3	2.00	1.23	
Ethylbenzene*	<0.050	0.050	07/27/2017	ND	2.03	102	2.00	0.627	
Total Xylenes*	<0.150	0.150	07/27/2017	ND	6.09	101	6.00	1.23	
Total BTEx	<0.300	0.300	07/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	07/26/2017	ND	432	108	400	3.64	

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	07/26/2017	ND	187	93.3	200	2.85	
DRO >C10-C28	<10.0	10.0	07/26/2017	ND	195	97.5	200	2.00	

Surrogate: 1-Chlorooctane 89.3 % 28.3-164

Surrogate: 1-Chlorooctadecane 94.6 % 34.7-157

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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/18/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 7 @ 6' (H701927-20)

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	07/27/2017	ND	2.11	106	2.00	1.48	
Toluene*	<0.050	0.050	07/27/2017	ND	1.97	98.3	2.00	1.23	
Ethylbenzene*	<0.050	0.050	07/27/2017	ND	2.03	102	2.00	0.627	
Total Xylenes*	<0.150	0.150	07/27/2017	ND	6.09	101	6.00	1.23	
Total BTEx	<0.300	0.300	07/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	07/26/2017	ND	432	108	400	3.64		

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	07/26/2017	ND	187	93.3	200	2.85	
DRO >C10-C28	<10.0	10.0	07/26/2017	ND	195	97.5	200	2.00	

Surrogate: 1-Chlorooctane 92.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 96.0 % 34.7-157

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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/18/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 7 @ 7' (H701927-21)

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	07/27/2017	ND	2.11	106	2.00	1.48	
Toluene*	<0.050	0.050	07/27/2017	ND	1.97	98.3	2.00	1.23	
Ethylbenzene*	<0.050	0.050	07/27/2017	ND	2.03	102	2.00	0.627	
Total Xylenes*	<0.150	0.150	07/27/2017	ND	6.09	101	6.00	1.23	
Total BTEx	<0.300	0.300	07/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 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	07/26/2017	ND	432	108	400	3.64	

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	07/26/2017	ND	187	93.3	200	2.85	
DRO >C10-C28	<10.0	10.0	07/26/2017	ND	195	97.5	200	2.00	

Surrogate: 1-Chlorooctane 91.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 97.7 % 34.7-157

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Analytical Results For:

BBC International, Inc.
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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/18/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 8 @ SURFACE (H701927-22)

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	07/27/2017	ND	2.11	106	2.00	1.48	
Toluene*	<0.050	0.050	07/27/2017	ND	1.97	98.3	2.00	1.23	
Ethylbenzene*	<0.050	0.050	07/27/2017	ND	2.03	102	2.00	0.627	
Total Xylenes*	<0.150	0.150	07/27/2017	ND	6.09	101	6.00	1.23	
Total BTX	<0.300	0.300	07/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 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	96.0	16.0	07/26/2017	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	07/26/2017	ND	187	93.3	200	2.85	
DRO >C10-C28	3710	50.0	07/26/2017	ND	195	97.5	200	2.00	

Surrogate: 1-Chlorooctane 98.8 % 28.3-164

Surrogate: 1-Chlorooctadecane 189 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/18/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 8 @ 1' (H701927-23)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/27/2017	ND	2.11	106	2.00	1.48	
Toluene*	<0.050	0.050	07/27/2017	ND	1.97	98.3	2.00	1.23	
Ethylbenzene*	<0.050	0.050	07/27/2017	ND	2.03	102	2.00	0.627	
Total Xylenes*	<0.150	0.150	07/27/2017	ND	6.09	101	6.00	1.23	
Total BTX	<0.300	0.300	07/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/26/2017	ND	448	112	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	07/26/2017	ND	187	93.3	200	2.85	
DRO >C10-C28	12.4	10.0	07/26/2017	ND	195	97.5	200	2.00	

Surrogate: 1-Chlorooctane 86.7 % 28.3-164

Surrogate: 1-Chlorooctadecane 92.6 % 34.7-157

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Analytical Results For:

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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/18/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 8 @ 6' (H701927-24)

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	07/27/2017	ND	2.11	106	2.00	1.48	
Toluene*	<0.050	0.050	07/27/2017	ND	1.97	98.3	2.00	1.23	
Ethylbenzene*	<0.050	0.050	07/27/2017	ND	2.03	102	2.00	0.627	
Total Xylenes*	<0.150	0.150	07/27/2017	ND	6.09	101	6.00	1.23	
Total BTX	<0.300	0.300	07/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 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	48.0	16.0	07/26/2017	ND	448	112	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	07/26/2017	ND	187	93.3	200	2.85	
DRO >C10-C28	<10.0	10.0	07/26/2017	ND	195	97.5	200	2.00	

Surrogate: 1-Chlorooctane 95.4 % 28.3-164

Surrogate: 1-Chlorooctadecane 100 % 34.7-157

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Analytical Results For:

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

Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/18/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 8 @ 7' (H701927-25)

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	07/27/2017	ND	2.11	106	2.00	1.48		
Toluene*	<0.050	0.050	07/27/2017	ND	1.97	98.3	2.00	1.23		
Ethylbenzene*	<0.050	0.050	07/27/2017	ND	2.03	102	2.00	0.627		
Total Xylenes*	<0.150	0.150	07/27/2017	ND	6.09	101	6.00	1.23		
Total BTEx	<0.300	0.300	07/27/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 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	07/26/2017	ND	448	112	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	07/26/2017	ND	187	93.3	200	2.85	
DRO >C10-C28	42.1	10.0	07/26/2017	ND	195	97.5	200	2.00	

Surrogate: 1-Chlorooctane 83.8 % 28.3-164

Surrogate: 1-Chlorooctadecane 90.8 % 34.7-157

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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/18/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 9 @ SURFACE (H701927-26)

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	07/27/2017	ND	2.11	106	2.00	1.48		
Toluene*	<0.050	0.050	07/27/2017	ND	1.97	98.3	2.00	1.23		
Ethylbenzene*	<0.050	0.050	07/27/2017	ND	2.03	102	2.00	0.627		
Total Xylenes*	<0.150	0.150	07/27/2017	ND	6.09	101	6.00	1.23		
Total BTEx	<0.300	0.300	07/27/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 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	07/26/2017	ND	448	112	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	07/26/2017	ND	187	93.3	200	2.85	
DRO >C10-C28	4090	50.0	07/26/2017	ND	195	97.5	200	2.00	

Surrogate: 1-Chlorooctane 97.6 % 28.3-164

Surrogate: 1-Chlorooctadecane 196 % 34.7-157

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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/18/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 9 @ 1' (H701927-27)

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	07/28/2017	ND	2.01	100	2.00	1.62	
Toluene*	<0.050	0.050	07/28/2017	ND	1.88	94.1	2.00	2.75	
Ethylbenzene*	<0.050	0.050	07/28/2017	ND	1.94	97.2	2.00	2.14	
Total Xylenes*	<0.150	0.150	07/28/2017	ND	5.82	96.9	6.00	1.56	
Total BTX	<0.300	0.300	07/28/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	48.0	16.0	07/26/2017	ND	448	112	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	07/26/2017	ND	190	94.8	200	1.18	
DRO >C10-C28	<10.0	10.0	07/26/2017	ND	207	103	200	2.16	

Surrogate: 1-Chlorooctane 88.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 90.1 % 34.7-157

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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/18/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 9 @ 6' (H701927-28)

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	07/31/2017	ND	2.06	103	2.00	0.728	
Toluene*	<0.050	0.050	07/31/2017	ND	1.90	95.2	2.00	2.14	
Ethylbenzene*	<0.050	0.050	07/31/2017	ND	1.99	99.6	2.00	0.790	
Total Xylenes*	<0.150	0.150	07/31/2017	ND	6.01	100	6.00	1.04	
Total BTEx	<0.300	0.300	07/31/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	48.0	16.0	07/26/2017	ND	448	112	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	07/26/2017	ND	190	94.8	200	1.18	
DRO >C10-C28	<10.0	10.0	07/26/2017	ND	207	103	200	2.16	

Surrogate: 1-Chlorooctane 97.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 100 % 34.7-157

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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/18/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 9 @ 7' (H701927-29)

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	07/31/2017	ND	2.06	103	2.00	0.728	
Toluene*	<0.050	0.050	07/31/2017	ND	1.90	95.2	2.00	2.14	
Ethylbenzene*	<0.050	0.050	07/31/2017	ND	1.99	99.6	2.00	0.790	
Total Xylenes*	<0.150	0.150	07/31/2017	ND	6.01	100	6.00	1.04	
Total BTX	<0.300	0.300	07/31/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/26/2017	ND	448	112	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	07/26/2017	ND	190	94.8	200	1.18	
DRO >C10-C28	<10.0	10.0	07/26/2017	ND	207	103	200	2.16	

Surrogate: 1-Chlorooctane 89.3 % 28.3-164

Surrogate: 1-Chlorooctadecane 91.9 % 34.7-157

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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/18/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: NORTH @ SURFACE (H701927-30)

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	07/31/2017	ND	2.06	103	2.00	0.728	
Toluene*	<0.050	0.050	07/31/2017	ND	1.90	95.2	2.00	2.14	
Ethylbenzene*	<0.050	0.050	07/31/2017	ND	1.99	99.6	2.00	0.790	
Total Xylenes*	<0.150	0.150	07/31/2017	ND	6.01	100	6.00	1.04	
Total BTEx	<0.300	0.300	07/31/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 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	48.0	16.0	07/26/2017	ND	448	112	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	07/26/2017	ND	190	94.8	200	1.18	
DRO >C10-C28	<10.0	10.0	07/26/2017	ND	207	103	200	2.16	

Surrogate: 1-Chlorooctane 83.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 83.6 % 34.7-157

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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/18/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: EAST @ SURFACE (H701927-31)

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	07/31/2017	ND	2.06	103	2.00	0.728	
Toluene*	<0.050	0.050	07/31/2017	ND	1.90	95.2	2.00	2.14	
Ethylbenzene*	<0.050	0.050	07/31/2017	ND	1.99	99.6	2.00	0.790	
Total Xylenes*	<0.150	0.150	07/31/2017	ND	6.01	100	6.00	1.04	
Total BTX	<0.300	0.300	07/31/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/26/2017	ND	448	112	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	07/26/2017	ND	190	94.8	200	1.18	
DRO >C10-C28	<10.0	10.0	07/26/2017	ND	207	103	200	2.16	

Surrogate: 1-Chlorooctane 88.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 88.0 % 34.7-157

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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/18/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WEST @ SURFACE (H701927-32)

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	07/31/2017	ND	2.06	103	2.00	0.728	
Toluene*	<0.050	0.050	07/31/2017	ND	1.90	95.2	2.00	2.14	
Ethylbenzene*	<0.050	0.050	07/31/2017	ND	1.99	99.6	2.00	0.790	
Total Xylenes*	<0.150	0.150	07/31/2017	ND	6.01	100	6.00	1.04	
Total BTX	<0.300	0.300	07/31/2017	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/26/2017	ND	448	112	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	07/26/2017	ND	190	94.8	200	1.18	
DRO >C10-C28	<10.0	10.0	07/26/2017	ND	207	103	200	2.16	

Surrogate: 1-Chlorooctane 88.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 89.3 % 34.7-157

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Received: 07/25/2017
 Reported: 08/01/2017
 Project Name: PYGMY 27 STATE #3H
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY, NM

Sampling Date: 07/18/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SOUTH @ SURFACE (H701927-33)

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	07/31/2017	ND	2.06	103	2.00	0.728	
Toluene*	<0.050	0.050	07/31/2017	ND	1.90	95.2	2.00	2.14	
Ethylbenzene*	<0.050	0.050	07/31/2017	ND	1.99	99.6	2.00	0.790	
Total Xylenes*	<0.150	0.150	07/31/2017	ND	6.01	100	6.00	1.04	
Total BTX	<0.300	0.300	07/31/2017	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	07/26/2017	ND	448	112	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	07/26/2017	ND	190	94.8	200	1.18	
DRO >C10-C28	<10.0	10.0	07/26/2017	ND	207	103	200	2.16	

Surrogate: 1-Chlorooctane 92.4 % 28.3-164

Surrogate: 1-Chlorooctadecane 93.9 % 34.7-157

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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

Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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

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**ANALYSIS REQUEST****BILL TO**

Company Name: BBC International, Inc.

Project Manager: Cliff Brunson

Address: P.O. Box 805

City: Hobbs

Phone #: 575-397-6388

Project #:

Project Name: Pygmy 27 State #3H

Project Location: Lea County, NM

Sample Name: Jeff Ornelas

FOR LAB USE ONLY

Lab I.D.

Sample I.D.

#101997

SP1 @ 1'

SP1 @ 2'

SP1 @ 3'

SP1 @ 8'

SP1 @ 10'

SP2 @ 1'

SP2 @ 2'

SP2 @ 3'

SP2 @ 8'

SP2 @ 10'

SP2 @ 10'

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Relinquished By:

Date: 7/18/17

Time: 5:00pm

Received By:

Date: 7/25/17

Time: 10:40

Sample Condition

Cool ☐ Yes ☐ NoIntact ☐ Yes ☐ No

CHECKED BY: (Initials)

Phone Result: ☐ Yes ☐ NoFax Result: ☐ Yes ☐ No

Add'l Phone #:

Add'l Fax #:

REMARKS:

Delivered By: (Circle One) -9.18

Corrected - 9.48

Sampler - UPS - Bus - Other:

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

Sample Condition

Cool ☐ Yes ☐ NoIntact ☐ Yes ☐ No

CHECKED BY: (Initials)

Phone Result: ☐ Yes ☐ NoFax Result: ☐ Yes ☐ No

Add'l Phone #:

Add'l Fax #:

REMARKS:

Some have head space



CARDINAL LABORATORIES

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

284

BILL TO

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: Pygmy 27 State #3H

Project Location: Lea County, NM

Sampler Name: Jeff Ornelas

P.O. #:

Company: *COB*

Attn: *HASSELL*

Address:

City:

State: Zip:

Phone #:

Fax #:

FOR LAB USE ONLY

Lab I.D.

Sample I.D.

H101927

SP3 @ SURFACE

SP4 @ SURFACE

SP5 @ SURFACE

SP6 @ SURFACE

SP6 @ 1'

SP6 @ 6'

SP6 @ 7'

SP7 @ SURFACE

SP7 @ 1'

SP7 @ 6'

(G)RAB OR (C)OMP.

CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE TIME

BTEX
CI
TPH

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Relinquished By:

Date: *7/18/17*

Time: *5:00 PM*

Received By:

Date: *7-25-17*

Time: *10:40*

Received By:

Phone Result: ☐ Yes ☐ No ☐ Add'l Phone #:

Fax Result: ☐ Yes ☐ No ☐ Add'l Fax #:

REMARKS:

Relinquished By:

Date: *7-25-17*

Time: *5:00 PM*

Received By:

Date: *7-25-17*

Time: *10:40*

Received By:

Phone Result: ☐ Yes ☐ No ☐ Add'l Phone #:

Fax Result: ☐ Yes ☐ No ☐ Add'l Fax #:

REMARKS:

Delivered By: (Circle One)

-9.12

Corrected -8.552

Sample Condition

Cool ☐ Yes ☐ No

Intact ☐ Yes ☐ No

CHECKED BY: (Initials)

TP: HYS

Some have lead space

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



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(505) 393-2326 FAX (505) 393-2476

a: BBC International, Inc.

Project Manager: Cliff Brunson

Address: P.O. Box 805

City: Hobbs

Phone #: 575-397-6388

Project #:

Project Name: Pymmy 27 State #3H

Project Location: Lea County, NM

Sampler Name: Jett Ornelas

FOR LAB USE ONLY

Lab I.D.

Sample I.D.

H201927

7.

SURFACE

1.

9.

7. CLIPSPACE

SURFACE

7	-
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7.

H @ SURFACE

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for incidental or consequential

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Office - 9.1c

Other: *Levine*

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

264

Page 38 of 39

Released to Imaging: 11/17/2022 9:27:07 AM

Company Name: BBC International, Inc.										P.O. #:									
Project Manager: Cliff Brunson										Company:									
Address: P.O. Box 805										Attn:									
City: Hobbs										Address:									
State: NM Zip: 88241										City:									
Phone #: 575-397-6388										Fax #:									
Project #:										State: Zip:									
Project Name: Pygmy 27 State #3H										Phone #:									
Project Location: Lea County, NM										Fax #:									
Sampler Name: Jeff Ornelas										PRESERV									
FOR LAB USE ONLY										SAMPLING									

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME								
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :										
A101921	SP7 @ 7'									7/18/17	11:17 AM								
	SP8 @ SURFACE									7/18/17	11:25 AM								
	SP8 @ 1'									7/18/17	11:33 AM								
	SP8 @ 6'									7/18/17	11:48 AM								
	SP8 @ 7'									7/18/17	12:12 PM								
	SP9 @ SURFACE									7/18/17	12:55 PM								
	SP9 @ 1'									7/18/17	1:11 PM								
	SP9 @ 6'									7/18/17	1:29 PM								
	SP9 @ 7'									7/18/17	1:45 PM								
	NORTH @ SURFACE									7/18/17	1:46 PM								

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Relinquished By:	Date: 7/18/17	Received By:	Date: 7/18/17
Relinquished By:	Date: 7/18/17	Received By:	Date: 7/18/17
Delivered By: (Circle One) -9.12	Time: 7:35-17	Sample Condition	CHECKED BY: (Initials)
Sampler - UPS - Bus - Other: Corrected - 8.450	Time: 7:40	Cool <input type="checkbox"/> Intact <input type="checkbox"/>	7/18/17
		Yes <input type="checkbox"/> No <input type="checkbox"/>	Some have fluid space



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.										BILL TO										ANALYSIS REQUEST									
Project Manager: Cliff Brunson										P.O. #:																			
Address: P.O. Box 805										Company:																			
City: Hobbs										Attn:																			
State: NM Zip: 88241										Address:																			
Phone #: 575-397-6388										City:																			
Fax #: 575-397-0397										State:																			
Project #:										Zip:																			
Project Name: Pygmy 27 State #3H										Phone #:																			
Project Location: Lea County, NM										Fax #:																			
Sampler Name: Jeff Ornelas																													

FOR LAB USE ONLY		Sample I.D.		(G)RAB OR (C)OMP.		# CONTAINERS		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER :		ACID/BASE:		ICE / COOL		OTHER :		DATE		TIME		TPT		BTEX		CI	
		#101921																																	
		31 EAST @ SURFACE				6																													
		32 WEST @ SURFACE				6																													
		33 SOUTH @ SURFACE				6																													

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Relinquished By:	
Received By:	
Relinquished By:	
Received By:	
Delivered By: (Circle One) - 9.18	
Sample Condition:	
Checked By:	
Remarks:	



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

January 19, 2018

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: PYGMY 27 STATE #3H

Enclosed are the results of analyses for samples received by the laboratory on 01/16/18 11:45.

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



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

Analytical Results For:

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

Received: 01/16/2018
 Reported: 01/19/2018
 Project Name: PYGMY 27 STATE #3H
 Project Number: (6/9/17)
 Project Location: LEA COUNTY, NM 176

Sampling Date: 01/15/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: C3 @ 1.5' (H800165-01)

BTEX 8021B			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/17/2018	ND	2.03	101	2.00	1.66	
Toluene*	<0.050	0.050	01/17/2018	ND	2.04	102	2.00	1.56	
Ethylbenzene*	<0.050	0.050	01/17/2018	ND	2.05	103	2.00	1.44	
Total Xylenes*	<0.150	0.150	01/17/2018	ND	6.31	105	6.00	1.88	
Total BTEX	<0.300	0.300	01/17/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 81.3-128

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/18/2018	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	01/17/2018	ND	229	114	200	0.0512	
DRO >C10-C28*	17.2	10.0	01/17/2018	ND	228	114	200	0.306	
EXT DRO >C28-C36	<10.0	10.0	01/17/2018	ND					

Surrogate: 1-Chlorooctane 97.3 % 41-142

Surrogate: 1-Chlorooctadecane 94.4 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 01/16/2018
 Reported: 01/19/2018
 Project Name: PYGMY 27 STATE #3H
 Project Number: (6/9/17)
 Project Location: LEA COUNTY, NM 176

Sampling Date: 01/15/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: C4 @ 1.5' (H800165-02)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/17/2018	ND	2.03	101	2.00	1.66	
Toluene*	<0.050	0.050	01/17/2018	ND	2.04	102	2.00	1.56	
Ethylbenzene*	<0.050	0.050	01/17/2018	ND	2.05	103	2.00	1.44	
Total Xylenes*	<0.150	0.150	01/17/2018	ND	6.31	105	6.00	1.88	
Total BTEx	<0.300	0.300	01/17/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 81.3-128

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	01/18/2018	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*	15.0	10.0	01/17/2018	ND	229	114	200	0.0512	
DRO >C10-C28*	21.8	10.0	01/17/2018	ND	228	114	200	0.306	
EXT DRO >C28-C36	<10.0	10.0	01/17/2018	ND					

Surrogate: 1-Chlorooctane 99.9 % 41-142

Surrogate: 1-Chlorooctadecane 98.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 01/16/2018
 Reported: 01/19/2018
 Project Name: PYGMY 27 STATE #3H
 Project Number: (6/9/17)
 Project Location: LEA COUNTY, NM 176

Sampling Date: 01/15/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: C5 @ 1.5' (H800165-03)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/17/2018	ND	2.03	101	2.00	1.66		
Toluene*	<0.050	0.050	01/17/2018	ND	2.04	102	2.00	1.56		
Ethylbenzene*	<0.050	0.050	01/17/2018	ND	2.05	103	2.00	1.44		
Total Xylenes*	<0.150	0.150	01/17/2018	ND	6.31	105	6.00	1.88		
Total BTEx	<0.300	0.300	01/17/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 81.3-128

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	01/18/2018	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	01/17/2018	ND	229	114	200	0.0512	
DRO >C10-C28*	<10.0	10.0	01/17/2018	ND	228	114	200	0.306	
EXT DRO >C28-C36	<10.0	10.0	01/17/2018	ND					

Surrogate: 1-Chlorooctane 95.5 % 41-142

Surrogate: 1-Chlorooctadecane 91.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 01/16/2018
 Reported: 01/19/2018
 Project Name: PYGMY 27 STATE #3H
 Project Number: (6/9/17)
 Project Location: LEA COUNTY, NM 176

Sampling Date: 01/15/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: T1 @ 6" (H800165-04)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/17/2018	ND	2.03	101	2.00	1.66	
Toluene*	<0.050	0.050	01/17/2018	ND	2.04	102	2.00	1.56	
Ethylbenzene*	<0.050	0.050	01/17/2018	ND	2.05	103	2.00	1.44	
Total Xylenes*	<0.150	0.150	01/17/2018	ND	6.31	105	6.00	1.88	
Total BTEX	<0.300	0.300	01/17/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 81.3-128

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	10.6	10.0	01/17/2018	ND	229	114	200	0.0512	
DRO >C10-C28*	27.3	10.0	01/17/2018	ND	228	114	200	0.306	
EXT DRO >C28-C36	13.4	10.0	01/17/2018	ND					

Surrogate: 1-Chlorooctane 97.4 % 41-142

Surrogate: 1-Chlorooctadecane 93.3 % 37.6-147

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 01/16/2018
 Reported: 01/19/2018
 Project Name: PYGMY 27 STATE #3H
 Project Number: (6/9/17)
 Project Location: LEA COUNTY, NM 176

Sampling Date: 01/15/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: T2 @ 6" (H800165-05)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/17/2018	ND	2.03	101	2.00	1.66		
Toluene*	<0.050	0.050	01/17/2018	ND	2.04	102	2.00	1.56		
Ethylbenzene*	<0.050	0.050	01/17/2018	ND	2.05	103	2.00	1.44		
Total Xylenes*	<0.150	0.150	01/17/2018	ND	6.31	105	6.00	1.88		
Total BTEX	<0.300	0.300	01/17/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 81.3-128

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	12.8	10.0	01/17/2018	ND	229	114	200	0.0512	
DRO >C10-C28*	<10.0	10.0	01/17/2018	ND	228	114	200	0.306	
EXT DRO >C28-C36	<10.0	10.0	01/17/2018	ND					

Surrogate: 1-Chlorooctane 99.3 % 41-142

Surrogate: 1-Chlorooctadecane 95.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 01/16/2018
 Reported: 01/19/2018
 Project Name: PYGMY 27 STATE #3H
 Project Number: (6/9/17)
 Project Location: LEA COUNTY, NM 176

Sampling Date: 01/15/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: T3 @ 6" (H800165-06)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/17/2018	ND	2.03	101	2.00	1.66	
Toluene*	<0.050	0.050	01/17/2018	ND	2.04	102	2.00	1.56	
Ethylbenzene*	<0.050	0.050	01/17/2018	ND	2.05	103	2.00	1.44	
Total Xylenes*	<0.150	0.150	01/17/2018	ND	6.31	105	6.00	1.88	
Total BTEX	<0.300	0.300	01/17/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 81.3-128

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	12.3	10.0	01/17/2018	ND	229	114	200	0.0512	
DRO >C10-C28*	<10.0	10.0	01/17/2018	ND	228	114	200	0.306	
EXT DRO >C28-C36	<10.0	10.0	01/17/2018	ND					

Surrogate: 1-Chlorooctane 101 % 41-142

Surrogate: 1-Chlorooctadecane 95.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 01/16/2018
 Reported: 01/19/2018
 Project Name: PYGMY 27 STATE #3H
 Project Number: (6/9/17)
 Project Location: LEA COUNTY, NM 176

Sampling Date: 01/15/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: T4 @ 6" (H800165-07)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/17/2018	ND	2.03	101	2.00	1.66		
Toluene*	<0.050	0.050	01/17/2018	ND	2.04	102	2.00	1.56		
Ethylbenzene*	<0.050	0.050	01/17/2018	ND	2.05	103	2.00	1.44		
Total Xylenes*	<0.150	0.150	01/17/2018	ND	6.31	105	6.00	1.88		
Total BTEX	<0.300	0.300	01/17/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 81.3-128

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	17.3	10.0	01/17/2018	ND	229	114	200	0.0512	
DRO >C10-C28*	18.8	10.0	01/17/2018	ND	228	114	200	0.306	
EXT DRO >C28-C36	<10.0	10.0	01/17/2018	ND					

Surrogate: 1-Chlorooctane 100 % 41-142

Surrogate: 1-Chlorooctadecane 95.5 % 37.6-147

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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

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

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

10/1

Company Name: BBC International, Inc.

Project Manager: Cliff Brunson

Address: P.O. Box 805

City: Hobbs

Phone #: 575-397-6388

Project #:

Project Name: Pygmy 27 State #3H (6/9/17)

Project Location: Lea County, NM

Sample Name: Price Brunson

P.O. #:

Company: COG

Attn: Haskell

Address:

City:

State: Zip:

Phone #:

Fax #:

ANALYSIS REQUEST

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	CI	BTEX	TPH EXT
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
H800165	C3 @ 1.5'									1/15/18	12:10 PM	✓	✓	✓
	C4 @ 1.5'									1/15/18	12:20 PM	✓	✓	✓
	C5 @ 1.5'									1/15/18	12:30 PM	✓	✓	✓
	T1 @ 6"									1/15/18	1:00 PM	✓	✓	✓
	T2 @ 6"									1/15/18	1:10 PM	✓	✓	✓
	T3 @ 6"									1/15/18	1:20 PM	✓	✓	✓
	T4 @ 6"									1/15/18	1:30 PM	✓	✓	✓

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Relinquished By:

Date: 11/15/18

Received By:

Phone Result: ☐ Yes ☐ No

Fax Result: ☐ Yes ☐ No

Add'l Phone #:

Add'l Fax #:

REMARKS:

Relinquished By:

Date: 11/16/18

Received By:

Phone Result: ☐ Yes ☐ No

Fax Result: ☐ Yes ☐ No

Add'l Phone #:

Add'l Fax #:

Relinquished By:

Date: 11/16/18

Received By:

Phone Result: ☐ Yes ☐ No

Fax Result: ☐ Yes ☐ No

Add'l Phone #:

Add'l Fax #:

Relinquished By:

Date: 11/16/18

Received By:

Phone Result: ☐ Yes ☐ No

Fax Result: ☐ Yes ☐ No

Add'l Phone #:

Add'l Fax #:

Relinquished By:

Date: 11/16/18

Received By:

Phone Result: ☐ Yes ☐ No

Fax Result: ☐ Yes ☐ No

Add'l Phone #:

Add'l Fax #:

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

corrected 4.250



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

April 23, 2018

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: PYGMY 27 STATE #3H

Enclosed are the results of analyses for samples received by the laboratory on 04/13/18 16:55.

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 style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

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

Received:	04/13/2018	Sampling Date:	04/09/2018
Reported:	04/23/2018	Sampling Type:	Soil
Project Name:	PYGMY 27 STATE #3H	Sampling Condition:	Cool & Intact
Project Number:	(6/9/17)	Sample Received By:	Tamara Oldaker
Project Location:	LEA COUNTY		

Sample ID: WEST SIDEWALL (H801039-01)

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	04/18/2018	ND	2.27	114	2.00	0.904	
Toluene*	<0.050	0.050	04/18/2018	ND	2.27	114	2.00	0.823	
Ethylbenzene*	<0.050	0.050	04/18/2018	ND	2.26	113	2.00	1.15	
Total Xylenes*	<0.150	0.150	04/18/2018	ND	6.92	115	6.00	1.15	
Total BTEX	<0.300	0.300	04/18/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.3 % 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	04/23/2018	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/18/2018	ND	206	103	200	0.994	
DRO >C10-C28*	<10.0	10.0	04/18/2018	ND	204	102	200	0.727	
EXT DRO >C28-C36	<10.0	10.0	04/18/2018	ND					

Surrogate: 1-Chlorooctane 90.5 % 41-142

Surrogate: 1-Chlorooctadecane 83.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 04/13/2018
 Reported: 04/23/2018
 Project Name: PYGMY 27 STATE #3H
 Project Number: (6/9/17)
 Project Location: LEA COUNTY

Sampling Date: 04/09/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BOTTOM (H801039-02)

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	04/18/2018	ND	2.27	114	2.00	0.904		
Toluene*	<0.050	0.050	04/18/2018	ND	2.27	114	2.00	0.823		
Ethylbenzene*	<0.050	0.050	04/18/2018	ND	2.26	113	2.00	1.15		
Total Xylenes*	<0.150	0.150	04/18/2018	ND	6.92	115	6.00	1.15		
Total BTEx	<0.300	0.300	04/18/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.7 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	04/23/2018	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/18/2018	ND	206	103	200	0.994	
DRO >C10-C28*	<10.0	10.0	04/18/2018	ND	204	102	200	0.727	
EXT DRO >C28-C36	<10.0	10.0	04/18/2018	ND					

Surrogate: 1-Chlorooctane 88.3 % 41-142

Surrogate: 1-Chlorooctadecane 80.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 04/13/2018
 Reported: 04/23/2018
 Project Name: PYGMY 27 STATE #3H
 Project Number: (6/9/17)
 Project Location: LEA COUNTY

Sampling Date: 04/09/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: EAST SIDEWALL (H801039-03)

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	04/18/2018	ND	1.94	96.9	2.00	0.651		
Toluene*	<0.050	0.050	04/18/2018	ND	1.93	96.5	2.00	0.696		
Ethylbenzene*	<0.050	0.050	04/18/2018	ND	1.89	94.7	2.00	0.910		
Total Xylenes*	<0.150	0.150	04/18/2018	ND	5.80	96.7	6.00	0.810		
Total BTEX	<0.300	0.300	04/18/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.9 % 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	<16.0	16.0	04/23/2018	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/18/2018	ND	206	103	200	0.994	
DRO >C10-C28*	<10.0	10.0	04/18/2018	ND	204	102	200	0.727	
EXT DRO >C28-C36	<10.0	10.0	04/18/2018	ND					

Surrogate: 1-Chlorooctane 85.9 % 41-142

Surrogate: 1-Chlorooctadecane 84.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 04/13/2018
 Reported: 04/23/2018
 Project Name: PYGMY 27 STATE #3H
 Project Number: (6/9/17)
 Project Location: LEA COUNTY

Sampling Date: 04/09/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SOUTH SIDEWALL (H801039-04)

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	04/18/2018	ND	1.94	96.9	2.00	0.651		
Toluene*	<0.050	0.050	04/18/2018	ND	1.93	96.5	2.00	0.696		
Ethylbenzene*	<0.050	0.050	04/18/2018	ND	1.89	94.7	2.00	0.910		
Total Xylenes*	<0.150	0.150	04/18/2018	ND	5.80	96.7	6.00	0.810		
Total BTX	<0.300	0.300	04/18/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.5 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	04/23/2018	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/18/2018	ND	206	103	200	0.994	
DRO >C10-C28*	<10.0	10.0	04/18/2018	ND	204	102	200	0.727	
EXT DRO >C28-C36	<10.0	10.0	04/18/2018	ND					

Surrogate: 1-Chlorooctane 91.1 % 41-142

Surrogate: 1-Chlorooctadecane 89.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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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

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

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

[illegible]

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

From: Yu, Olivia, EMNRD
To: [Rebecca Haskell](#); [Cliff Brunson](#)
Cc: [Ken Swinney](#); [Jennifer Gilkey](#); [Kathy Purvis](#); [Dakota Neel](#); [Sheldon Hitchcock](#)
Subject: RE: COG Pygmy 27 State #3H (1RP-4728) - Delineation Workplan
Date: Tuesday, December 19, 2017 2:44:07 PM
Attachments: [approved_1RP4728_Delineation_Workplan_Pygmy_27_State_#3H.pdf](#)

Dear All:

Please see attachment for your records. Also uploaded online.

Olivia

From: Yu, Olivia, EMNRD
Sent: Tuesday, December 19, 2017 2:34 PM
To: 'Rebecca Haskell' <RHaskell@concho.com>; Cliff Brunson <cbrunson@bbcinternational.com>
Cc: Ken Swinney <kswinney@bbcinternational.com>; Jennifer Gilkey <jgilkey@bbcinternational.com>; Kathy Purvis <kathy@bbcinternational.com>; Dakota Neel <DNeel2@concho.com>; Sheldon Hitchcock <SLHitchcock@concho.com>
Subject: RE: COG Pygmy 27 State #3H (1RP-4728) - Delineation Workplan

Ms. Haskell:

Thank you for the reminder. Indeed, I neglected to review the email from October 13 before responding RE: 1RP-4728.

Olivia

From: Rebecca Haskell [<mailto:RHaskell@concho.com>]
Sent: Tuesday, December 19, 2017 2:09 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>; Cliff Brunson <cbrunson@bbcinternational.com>
Cc: Ken Swinney <kswinney@bbcinternational.com>; Jennifer Gilkey <jgilkey@bbcinternational.com>; Kathy Purvis <kathy@bbcinternational.com>; Dakota Neel <DNeel2@concho.com>; Sheldon Hitchcock <SLHitchcock@concho.com>
Subject: RE: COG Pygmy 27 State #3H (1RP-4728) - Delineation Workplan

Ms. Yu,

I think there may be some confusion regarding this particular remediation site.

1. You sent out an email on October 13, 2017 (subsequent to the September 19, 2017 email), were you granted permission to conduct tilling as long as confirmation samples were collected at 6 inches. Additionally, the landowner has agreed upon this action. You, myself and Mr. Brunson met in your office on November 14, 2017, and discussed this project and you seemed agreeable at that time. **I assure you that if the confirmation samples come back over NMOC requirements COG will have the impacted soil removed.**

COG confirms that 2 and 3 below will occur and a statement of liner integrity and photo documentation will be provided.

Thank You,

Becky Haskell
Senior HSE Coordinator
COG Operating LLC
600 W Illinois Avenue | Midland, TX 79701
Direct: 432-818-2372 | Main: 432.683.7443
Cell: 432-556-5130
rhaskell@concho.com



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From: Yu, Olivia, EMNRD [<mailto:Olivia.Yu@state.nm.us>]
Sent: Tuesday, December 19, 2017 1:04 PM
To: Cliff Brunson
Cc: Rebecca Haskell; Ken Swinney; Jennifer Gilkey; Kathy Purvis
Subject: [External] RE: COG Pygmy 27 State #3H (1RP-4728) - Delineation Workplan

**** External email. Use caution. ****

Mr. Brunson:

Furthermore, a statement of liner integrity and photo documentation for affirmation are required as a portion of the release occurred in the lined facility.

Thanks,
Olivia

From: Yu, Olivia, EMNRD
Sent: Tuesday, December 19, 2017 12:01 PM
To: 'Cliff Brunson' <cbrunson@bbcinternational.com>
Cc: Becky Haskell <rhaskell@concho.com>; Ken Swinney <kswinney@bbcinternational.com>; Jennifer Gilkey <jgilkey@bbcinternational.com>; Kathy Purvis <kathy@bbcinternational.com>
Subject: RE: COG Pygmy 27 State #3H (1RP-4728) - Delineation Workplan

Mr. Brunson:

NMOCD will consider delineation as complete for 1RP-4728.

However, as mentioned in the email dated September 19, 2017, regarding remedial activities:

1. Tilling is not acceptable for the area represented by SP6 – 9. Surface TPH levels exceed permissible concentrations at SP6 and SP7, and perhaps SP8 and SP9 as well since MRO levels were not provided. NMOCD requires a minimum of 6-inch removal for the area represented by SP6 - SP9.
2. Confirmation sample locations at 1.5 ft. bgs in the area represented by SP3 - SP5 needs to be marked on an appropriately scaled map in the remediation report.
3. One confirmation sidewall sample location must be at the border between the proposed 2 ft. excavation (pink) and the area with no remediation (blue).

Please confirm or inform for clarification.

Thanks,
Olivia

From: Cliff Brunson [<mailto:cbrunson@bbcinternational.com>]

Sent: Wednesday, November 22, 2017 1:46 PM

To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>

Cc: Becky Haskell <rhaskell@concho.com>; Ken Swinney <kswinney@bbcinternational.com>; Jennifer Gilkey <jgilkey@bbcinternational.com>; Kathy Purvis <kathy@bbcinternational.com>

Subject: COG Pygmy 27 State #3H (1RP-4728) - Delineation Workplan

Olivia,

Please find the attached Delineation Workplan and remediation proposal for the COG Pygmy 27 State #3H (1RP-4728). COG is requesting that you review this plan and is looking forward to the OCD's approval.

If you have any questions, please let me know.

Thanks, Cliff

Cliff P. Brunson, CEI, CRS
President
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District IV
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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 159649

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 159649
	Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	None	11/17/2022