
SITE CLOSURE REPORT

Shell State #3

1RP-4582

API #30-025-23014

Unit C, Sec.18, Township 11 South, Range 33 East

August 2017

Prepared By:

Republic Backhoe Service, LLC.

47 East Dickens

Lovington, NM 88260

Prepared For:

Read and Stevens Inc.

Republic Backhoe Service, LLC.

August 1, 2017

Olivia Yu
NMOCD District I
1625 N. French Dr.
Hobbs. NM 88240

Dear Olivia Yu,

Re: Closure Report

Read and Stevens Inc.
Shell State #3 Flowline Spill
Unit C, Section 18, Township 11 South, Range 33 East
Latitude: North 33.370575 Longitude: West 103.652344
API # 30-025-23014
1RP-4582

Republic Backhoe Service, LLC. Submits the attached Closure Report Letter describing remedial activities undertaken to remediate the above noted site. Remediation activities were undertaken by Republic Backhoe Service, LLC. Information and data contained herein were taken from notes, documents, photographs and e-mails directed to/from Republic Backhoe Service LLC.

Incident Date

January 22, 2017

Background Information

The Shell State #3 is located approximately twenty-one (21) miles west of Tatum, New Mexico. The legal location for the well is Unit C, Section 18, Township 11, South and Range 33 East in Lea County, New Mexico. The spill site lies 730 feet east of the Shell

State #3 location with the GPS Coordinates as follows: Latitude: 33.370575 North
Longitude: -103.652344 West.

Watercourses in the area are dry except for infrequent flows in response to major precipitation events. The soil in this area is made up of Kimbrough-Lea loamy soil. As per the New Mexico Bureau of Geology and Minerals Resources, the local surface and shallow geology is Quaternary formations and is comprised of 5" to 24" loamy soil with hard caliche below the soil. Groundwater in the area is estimated to be at a depth of 56 feet.

The ranking score for this site is 20 based on the following:

Depth to ground water: 56' (50'-99')	20
Wellhead Protection Area: > 1000'	0
Distance to Surface Water Body: > 1000'	0

Incident Description

On January 22, 2017 the flow line between the well and the battery burst causing a release of 14 barrels (6 oil and 8 produced water) onto the pasture. The release was discovered on January 24, 2017.

Actions Taken

According to the C-141 form on January 22, 2017 the flowline from the Shell State #3 ruptured and released approx. 14 barrels (6 Oil and 8 PW) onto the ground. The release was discovered on January 24, 2017 and reported on February 1, 2017. On January 25, 2017 Republic Backhoe Service LLC began to excavate and haul the soil that was saturated with oil. From 1/25/2017 through 1/31/2017 a total of 360 yards of contaminated soil were hauled to Gandy Marly Inc. The dimensions of the Spill Site A are 55' (North Wall) X 135' (East Wall) X 90' (South Wall) X 130' (West Wall). The release that caused Spill Site A impacted an older release Spill Site B that will be attended to as well. The dimensions of the Spill Site B are 115' (West Wall and East Wall) 40' (North Wall) and 15' (South Wall).

Grab samples were collected utilizing a backhoe and a drilling rig. On March 29, 2017 surface samples were taken at the spill sites A and B. On March 23, 2017 and March

24, 2017 bore hole samples were taken at the Spill Site A at a depth of 20' and Spill Site B at a depth of 10'. Laboratory results from the soil sampling are summarized in the table below. All soil samples were collected by Republic Backhoe Service LLC personnel wearing clean nitrile gloves. The soil samples were placed in laboratory provided sample containers, iced and transported to Cardinal Labs in Hobbs, NM for analysis. The samples were tested for TPH using EPA method 8015M, and volatile organics (BTEX) using EPA Method 8021B. The chlorides samples were analyzed per Method SM4500C1-B.

Remedial activities resumed on June 15, 2017. From 6/15/2017 through 7/08/2017 a total of 420 yards were hauled to Gandy Marly Inc (An approved NMOCD disposal) and 790 yards of top soil were hauled in from Mr. Pierce's top soil pit. The following table illustrates the spill area excavation depths that were agreed upon by the New Mexico Oil Conservation Division and by the State Land Office. On June 30, 2017 a twenty (20) mil polyethylene liner was placed in the excavated area surrounding Center. The polyethylene liner consisting of an area of 76-feet X 61-feet was used to cover an excavated area of 60-feet X 45-feet extending up the sidewalls a minimum of 3-feet and overlapping the edges a minimum of 5 feet. Top soil was placed on the overlapped edges to prevent the polyethylene liner from sloughing into the excavation bottom. Then backfilled the area with top soil.

Sample ID	Depth (bgs)	20 mil liner
North	2'	No
Northeast	0'	No
East	3'	No
Southeast	2'	No
South	2'	No
Southwest	1'	No
West	2'	No
Northwest	2'	No
Central	4'	Yes
NS1	2'	No
NS2	0	No
NS3	1'	No
NS4	1'	No

As previously stated, a total of 790 yards of top soil were hauled in to backfill Spill Area A and Spill Area B. All top soil was hauled from Mr. Pierce's top soil pit located at 33.3879°N, -103.6219°W. The backfill material was 100% top soil no pond bottoms were used in backfilling Spill Area A or Spill Area B.

Revegetation and Noxious Weed Management Plan

Seed Mixture: Warm Season SSR Grass Seed Mix 350

Seeding Rate/ acre: 25 lbs/acre

Timing of Dispersal: July 10, 2017.

Method of Dispersal: The seed was mechanically broadcasted over Spill Area A and Spill Area B. The seed was then covered by running a disc over the area. The spill areas were not artificially watered as proposed. The area received more than 3" of rain in the month of July 2017, so artificially watering was not needed.

Follow up Monitoring Plan: We intend to monitor the area in late summer (before the fall season). We will evaluate the growth of the area to determine if reseeding will be necessary the following spring. We will also monitor for the area for noxious weeds. The area is small enough to rid the weeds mechanically.

Noxious Weeds Control

Republic Backhoe Service LLC takes noxious weed control very serious. All equipment and trucks are inspected before entering the pasture area. For examples truck tires are inspected for seeds between the thread of the tires, and equipment (disc harrow and backhoe) is cleaned off before entering the site. The area will be monitored for the following noxious weeds (but not limited to):

- Jointed Goatgrass
- Hoary Cress
- Cheat Grass

-
- African Rue
 - Yellow Starthistle
 - Malta Starthistle
 - Purple Starthistle
 - Common Teasel
 - Camelthorn
 - Russian Knapweed

Remediation of the spill area was completed in compliance with New Mexico State Land Office and NMOCD Rules and Regulations as physically possible. While in situ chloride concentrations are above NMOCD Remedial Threshold goals, the polyethylene liner will abate vertical migration of chlorides and protect groundwater from contamination. On behalf of Read and Stevens Inc. Republic Backhoe Service, LLC, ask that the New Mexico State Land Office and NMOCD approve this site closure.

Thank you,

A handwritten signature in black ink, appearing to read "Eric Garcia", is positioned above the printed name.

Eric Garcia
Republic Backhoe Service, LLC.

Laboratory and Field Sample Results

Sample ID	Date	Depth	Chlorides (PPM)	BTEX	TPH (mg/kg) GRO	TPH (mg/kg) DRO	Sample Type
North							
N-1FS	2/10/17	0'	4800	-	-	-	Field Sample
N-Surface	3/29/17	Surface	5040	<.300	10	28.3	Lab
N-2FS	2/10/17	1'	1604	-	-	-	Field Sample
N-3FS	2/10/17	2'	360	-	-	-	Field Sample
N 2	2/15/17	2'	-	<.300	10	10	Lab Sample
N-4FS	2/10/17	3'	64	-	-	-	Field Sample
N 2-C	2/15/17	3'	32	-	-	-	Lab
N-5FS	2/10/17	5'	64	-	-	-	Field Sample
N-6FS	2/10/17	8'	64	-	-	-	Field Sample
N20	3/23/17	20'	16	<.300	10	10	Lab
Northeast							
NE-1FS	2/10/17	0'	64	-	-	-	Field Sample
NE Surface	3/29/17	Surface	32	<.300	10	10	Lab
NE 0	2/15/17	0'	-	<.300	10	10	Lab
NE 0-C	2/15/17	0'	32	-	-	-	Lab
NE-2FS	2/10/17	5'	64	-	-	-	Field Sample
NE-3FS	2/10/17	8'	64	-	-	-	Field Sample
NE20	3/23/17	20'	16	<.300	10	10	Lab

Sample ID	Date	Depth	Chlorides	BTEX	TPH(mg/kg) GRO	TPH(mg/kg) DRO	Sample Type
East							
E-1FS	2/10/17	0'	5816	-	-	-	Field Sample
E Surface	3/29/17	Surface	6000	.632	10	1020	Lab
E-2FS	2/10/17	1'	3204	-	-	-	Field Sample
E-3FS	2/10/17	2'	640	-	-	-	Field Sample
E-2	2/15/17	2'	-	<.300	10	10	Lab
E-4FS	2/10/17	3'	360	-	-	-	Field Sample
E-5FS	2/10/17	4'	220	-	-	-	Field Sample
E-6FS	2/10/17	5'	64	-	-	-	Field Sample
E2-C	2/15/17	5'	16	-	-	-	Lab
E-7FS	2/10/17	8'	64	-	-	-	Field Sample
E20	3/23/17	20'	16	<.300	10	10	Lab
Southeast							
SE-1FS	2/11/17	0'	320	-	-	-	Field Sample
SE Surface	3/29/2017	Surface	32	.605	225	23200	Lab
SE-2FS	2/11/17	1'	64	-	-	-	Field Sample
SE-3FS	2/11/17	2'	64	-	-	-	Field Sample
SE2	2/15/17	2'	-	<.300	10	10	Lab
SE 2-C	2/15/17	2'	16	-	-	-	Lab
SE-4FS	2/11/17	4'	64	-	-	-	Field Sample
SE-5FS	2/11/17	6'	64	-	-	-	Field Sample
SE-6FS	2/11/17	8'	64	-	-	-	Field Sample
SE20	3/23/17	20'	16	<.300	10	10	Lab

Sample ID	Date	Depth	Chlorides (PPM)	BTEX	TPH (mg/kg) GRO	TPH (mg/kg) DRO	Sample Type
South							
S-1FS	2/11/17	0'	2024	-	-	-	Field Sample
S-Surface	3/29/17	Surface	2240	<.300	10	127	Lab
S-2FS	2/11/17	1'	824	-	-	-	Field Sample
S2	2/15/17	2'	-	<.300	10	10	Lab
S-3FS	2/11/17	2'	484	-	-	-	Field Sample
S-4FS	2/11/17	3'	280	-	-	-	Field Sample
S-5FS	2/11/17	4'	128	-	-	-	Field Sample
S-6FS	2/11/17	5'	64	-	-	-	Field Sample
S2-C	2/15/17	5'	16	-	-	-	Lab
S-7FS	2/11/17	8'	64	-	-	-	Field Sample
S-20	3/23/17	20'	16	<.300	10	10	Lab
Southwest							
SW-1FS	2/11/17	0'	2088	-	-	-	Field Sample
SW-Surface	3/29/17	Surface	2240	<.300	10	127	Lab
SW0	2/15/17	0'	-	<.300	10	10	Lab
SW-2FS	2/11/17	1'	132	-	-	-	Field Sample
SW1-C	2/15/17	1'	64	-	-	-	Lab
SW-3FS	2/11/17	3'	64	-	-	-	Field Sample
SW-4FS	2/11/17	5'	64	-	-	-	Field Sample
SW20	3/23/17	20'	16	<.300	10	10	Lab

Sample ID	Date	Depth	Chlorides (PPM)	BTEX	TPH (mng/kg) GRO	TPH (mg/kg) DRO	Type of Sample
West							
W-1FS	2/12/17	0'	4424	-	-	-	Field Sample
W-Surface	3/29/17	Surface	5920	89.1	1520	10600	Lab
W-2FS	2/12/17	1'	720	-	-	-	Field Sample
W 2	2/15/17	2'	-	<.300	10	10	Lab
W 2-C	2/15/17	2'	16	-	-	-	Lab
W-3FS	2/12/17	2'	128	-	-	-	Field Sample
W-4FS	2/12/17	5'	64	-	-	-	Field Sample
W-20	3/23/17	20'	16	<.300	10	10	Lab
Northwest							
NW-1FS	2/12/17	0'	3644	-	-	-	Field Sample
NW-Surface	3/29/17	Surface	2480	.992	50.2	1570	Lab
NW-2FS	2/12/17	1'	2480	-	-	-	Field Sample
NW-3FS	2/12/17	2'	556	-	-	-	Field Sample
NW-4FS	2/12/17	3'	336	-	-	-	Field Sample
NW5-FS	2/12/17	5'	320	-	-	-	Field Sample
NW 6	2/15/17	6'	-	<.300	10	10	Lab
NW6-FS	2/12/17	8'	164	-	-	-	Field Sample
NW9-c	2/15/17	9'	16	-	-	-	Field Sample
NW7-FS	2/12/17	10'	64	-	-	-	Field Sample
NW20	3/23/17	20'	16	<.300	10	10	Lab

Sample ID	Date	Depth	Chlorides (PPM)	BTEX	TPH (mg/kg) GRO	TPH (mg/kg) DRO	Type of Sample
Central							
C-1FS	2/12/17	0'	9600	-	-	-	Field Sample
C-Surface	3/29/17	Surface	700	10.5	197	9200	Lab
C-2FS	2/12/17	1'	4800	-	-	-	Field Sample
C-3FS	2/12/17	2'	1900	-	-	-	Field Sample
2	1/30/17	2'	2200	-	-	-	Lab
5	1/30/17	5'	2480	-	-	-	Lab
7'	1/30/17	7'	2080	-	-	-	Lab
Shell 5	2/1/17	5'	-	<.300	10	58.1	Lab
Shell 6	2/1/17	6'	-	<.300	10	49.3	Lab
Shell 7	2/1/17	7'	-	<.300	10	24.1	Lab
C10	2/16/17	10'	-	<.300	10	10	Lab
C-10FS	2/16/17	10'	212	-	-	-	Field Sample
C-11FS	2/16/17	15'	64	-	-	-	Field Sample
C-15	2/16/17	15'	32	-	-	-	Lab
C20	3/23/17	20'	16	<.300	10	10	Lab
NS-1							
NS1-0FS	2/15/17	0'	640	-	-	-	Field Sample
NS-1 Surface	3/29/17	Surface	512	<.300	10	24.5	Lab
NS1-1FS	2/15/17	1'	624	-	-	-	Lab
NS1-2	2/15/17	2'	240	-	-	-	Field Sample
NS1-3	2/15/17	5'	64	-	-	-	Field Sample
NS1-10	3/24/17	10'	16	<.300	10	10	Lab
NS-2							
NS2-0FS	2/15/17	0'	280	-	-	-	Field Sample
NS2-Surface	3/29/17	Surface	32	<.300	10	10	Lab
NS2-1FS	2/15/17	1'	64	-	-	-	Field Sample
NS2	2/15/17	1'	80	<.300	10	10	Lab
NS2-2FS	2/15/17	5'	64	-	-	-	Field Sample
NS2-10	3/24/17	10'	16	<.300	10	10	Lab

Sample ID	Date	Depth	Chlorides (PPM)	BTEX	TPH (mg/kg) GRO	TPH (mg/kg) DRO	Sample Type
NS-3							
NS3-0FS	2/15/17	0'	1224	-	-	-	Field Sample
NS-Surface	3/29/17	Surface	1960	<.300	10	10	Lab
NS3-1FS	2/15/17	1'	128	-	-	-	Field Sample
NS3	2/15/17	1'	46	<.300	10	10	Lab
NS-4							
NS4-0FS	2/15/17	0'	880	-	-	-	Field Sample
NS-4 Surface	3/29/17	Surface	1180	<.300	10	10	Lab
NS4-1FS	2/15/17	1'	64	-	-	-	Field Sample
NS 4	2/15/17	1'	32	<.300	10	10	Lab
NS4-2FS	2/15/17	5'	64	-	-	-	Field Sample
NS4-10	3/24/17	10'	16	<.300	10	10	Lab

Spill Site A-Delineation

Center

Surface contamination at the center is high (Sample ID C-S). TPH and BTEX reach vertical extent at depths of 5' and remain clean at depths of 10', and 20' (Sample ID Shell 5, C-10, and C20). Chloride contaminants reach vertical extent at depths of 10' (field sample ID C-10 212 PPM) and remain clean at depths of 15' (Sample ID C-15) and 20' (Sample ID C-20).

North

Surface TPH/BTEX contamination is below limits, but chloride contamination at the north is high (N-S). Chloride contaminants reach vertical extent at a depth of 3' (N2-C) and remain clean to a depth of 20' (N-20).

North East

Surface TPH/BTEX/Chloride contamination is below limits, and continue to be below limits to a depth of 20' (NE-20).

East

Surface contamination at the East is high (Sample ID E-S). TPH and BTEX reach vertical extent at depths of 2' (Sample ID E2) and remain clean at a depth of 20' (Sample ID E20). Chloride contaminants reach vertical extent at depths of 4' (Sample ID E2-C) and remain clean at a depth of 20' (Sample ID E-20).

South East

Surface TPH/BTEX contamination at the South East is high (Sample ID SE-S). TPH and BTEX reach vertical extent at depths of 2' (Sample ID SE2) and remain clean at a depth of 20' (Sample ID SE20). Chloride contaminants are below limits at the surface and continue to be clean at depths of 2' (Sample ID SE2-C) and remain clean at a depth of 20' (Sample ID SE-20).

South

Surface contamination at the South is high (Sample ID S-S). TPH and BTEX reach vertical extent at depths of 2' (Sample ID S2) and remain clean at a depth of 20' (Sample ID S20). Chloride contaminants reach vertical extent at depths of 5' (Sample ID S2-C) and remain clean at a depth of 20' (Sample ID E-20).

South West

Surface contamination at the South West is high (Sample ID SW-S). TPH and BTEX reach vertical extent at depths of 0' (Sample ID SW-0) and remain clean at a depth of 20' (Sample ID SW20). Chloride contaminants reach vertical extent at depths of 1' (Sample ID SW-1-C) and remain clean at a depth of 20' (Sample ID SW20).

West

Surface contamination at the West is high (Sample ID W-S). TPH and BTEX reach vertical extent at depths of 2' (Sample ID W2) and remain clean at a depth of 20'

(Sample ID W20). Chloride contaminants reach vertical extent at depths of 2' (Sample ID W2-C) and remain clean at a depth of 20' (Sample ID E-20).

North West

Surface contamination at the North West is high (Sample ID NW-S). TPH and BTEX reach vertical extent at depths of 6' (Sample ID NW6) and remain clean at a depth of 20' (Sample ID NW20). Chloride contaminants reach vertical extent at depths of 9' (Sample ID NW9-C) and remain clean at a depth of 20' (Sample ID NW-20).

Spill Site B-Delineation

NS1

Surface TPH/BTEX contamination is below limits, but chloride contamination at the NS1 is high (NS1-S). Chloride contaminants reach 1' (Sample ID NS1) and reach vertical extent at a depth of 2' (Field Sample NS1-2) and remain clean to a depth of 10' (NS1-10).

NS2

Surface TPH/BTEX/Chloride contamination is below limits remain clean to a depth of 10' (NS2-10).

NS3

Surface TPH/BTEX contamination is below limits, but chloride contamination at the NS3 is high (NS3-S). Chloride contaminants reach vertical extent at a depth of 1' (Sample ID NS3) and remain clean to a depth of 10' (NS3-10).

NS4

Surface TPH/BTEX contamination is below limits, but chloride contamination at the NS4 is high (NS4-S). Chloride contaminants reach vertical extent at a depth of 1' (Sample ID NS4) and remain clean to a depth of 10' (NS4-10)

Appendix I Area Map



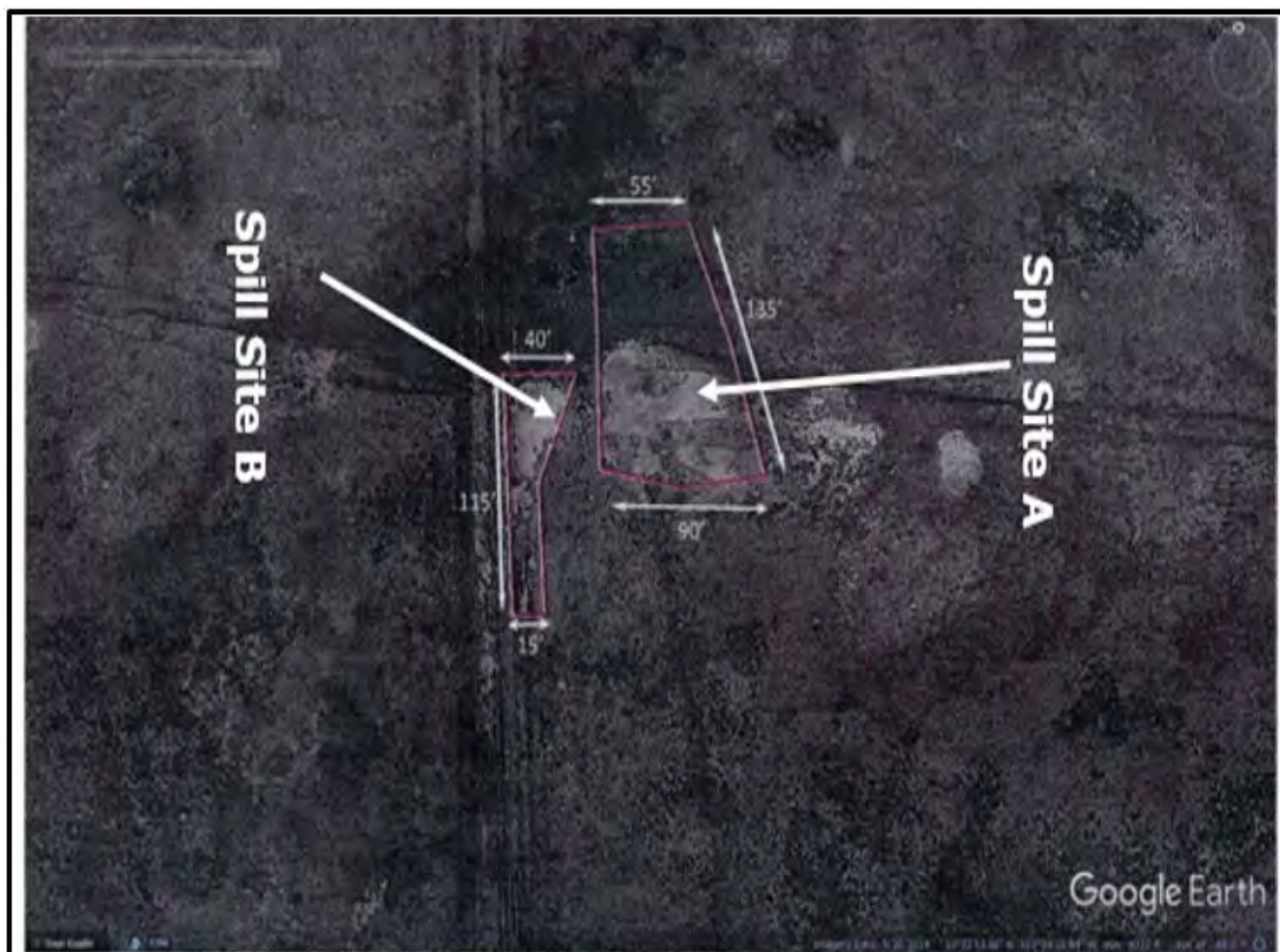
Read and Stevens Inc.
Shell State #3 Flowline Leak
Lea County, NM
GPS: 33.370932N, 103.653313W

Republic Backhoe Service
LLC
47 East Dickens Road
Lovington, NM 88260

Figure I
Area Map

Appendix II

Site Map



Read and Stevens Inc.
 Shell State #3 Flowline Leak
 Lea County, NM
 GPS: 33.370932N, 103.653313W

Republic Backhoe
 Service LLC
 47 East Dickens Rd
 Lovington, NM
 88260

Figure II
 Site Map

Appendix III

Ground Water Data



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLM ##### in the POD suffix indicates the POD has been replaced. O-ring(s) replaced, & no longer serves a C-line file is water right file.)

(quarters are 1-4, 5-8, 9-12) (quarters are smallest to largest) (NAD83 UTM in meters) (in feet)

POD	Sub- basin	County	Q 6 16 4	Q Sec	Q Twp	Range	X	Y	Distance	Depth	Water Column
POD Number	Code										
L 10812	L	LE	3	4	07	11S 33E	625418	3693569	472	125	60 65
L 12006 POD2	L	LE	4	1	18	11S 33E	625386	3692377	688	135	60 95
L 09306	L	LE	1	4	18	11S 33E	625435	3692461	772	120	50 70
L 09363 S	L	LE	3	1	4	18 33E	625334	3692360	838	120	51 69
L 09365	R	L	LE	3	2	4 18 33E	625737	3692583	909	120	50 70
L 09366	R	L	LE	3	2	4 18 33E	625737	3692583	909	160	83 77
L 09366 POD3	R	L	LE	3	1	17 33E	626834	3692870	1016	95	60 35
L 06223	L	LE	2	2	13	11S 32E	624520	3693254	1049	150	60 90
L 09341	L	LE	4	12	11S 32E	624024	3693835	1406	152		
L 09343	L	LE	1	1	2 19 33E	625346	3691755	1463	140	60 80	
L 09362	R	L	LE	3	3	3 18 33E	624546	3691950	1463	120	38 62
L 09362 POD2	L	LE	3	3	3 18 33E	624546	3691950	1463	122	38 64	
L 09900	L	LE	1	2	2 19 33E	625748	3691758	1532	136	56 80	
L 06249	L	LE	2	3	08 33E	626618	3694083	1594	105	48 57	
L 01640 POD1	L	LE		13	11S 32E	623843	3692636	1735	120		
L 10967	L	LE	1	1	4 08 33E	626819	3694188	1906	130	58 72	
L 10794	L	LE	3	3	2 12 32E	623711	3694556	1937	60	50 10	

Average Depth to Water: 57 feet
Minimum Depth: 48 feet
Maximum Depth: 83 feet

Record Count: 17

UTMNA080 Radius Search (in meters):

Ending (X): 6232 E 71

Nothing (Y): 3692317.18

Radius: 2000

UTM location was derived from P155 - 1st Help

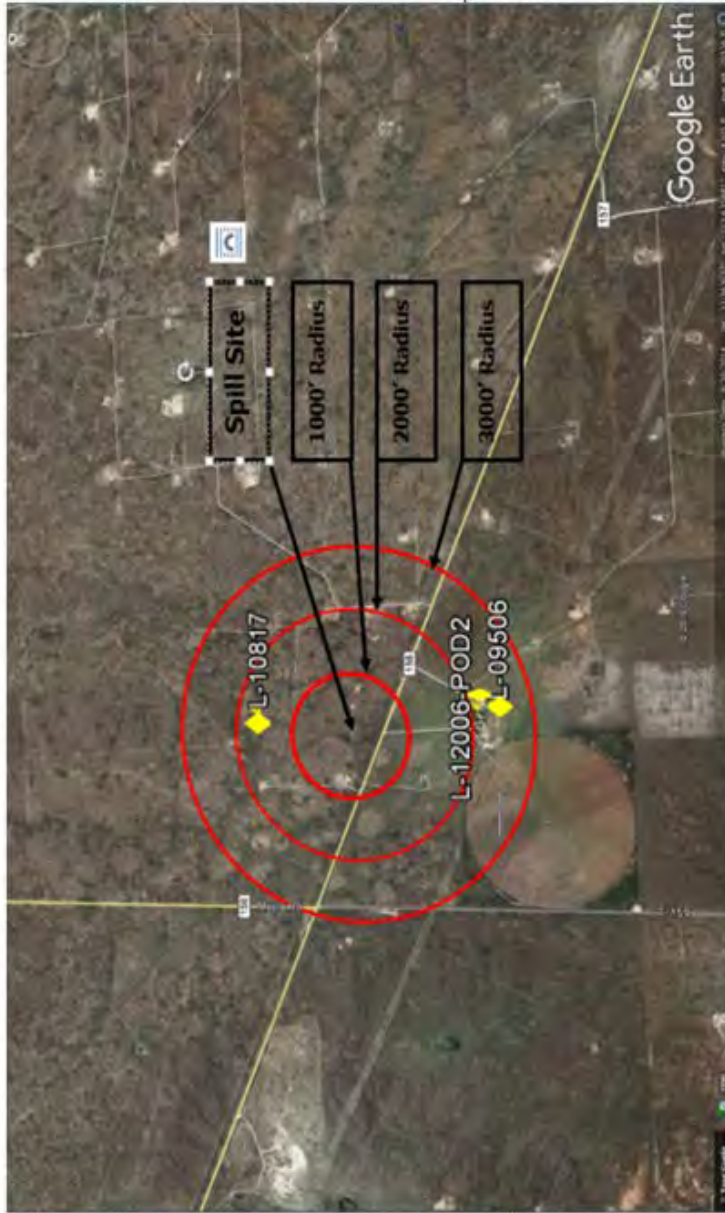
The data is furnished by the NM DSE ISC and is accepted by the recipient with the expressed understanding that the DSE ISC makes no warranty, expressed or implied, concerning the accuracy, completeness, reliability, validity, or suitability for any particular purpose of the data.

3/6/17 2:24 PM

WATER COLUMN AVERAGE DEPTH TO
WATER

mwmms.ces.state.nm.us/mwmms/ReportProxy?queryDate=11-report%3A%20WaterColumn%2C%3A%20BasinDiv%3A%20true%2C%3A%20County%3A%20%2C%3A%20Sub_Basin%3A%20%2C%3A%20UsedBy%3A%20false%2C%3A%20radiusBox%3A%20radius%2C%3A%20utmDiv%3A%20true%2C%3A%20utm33e%3A%20

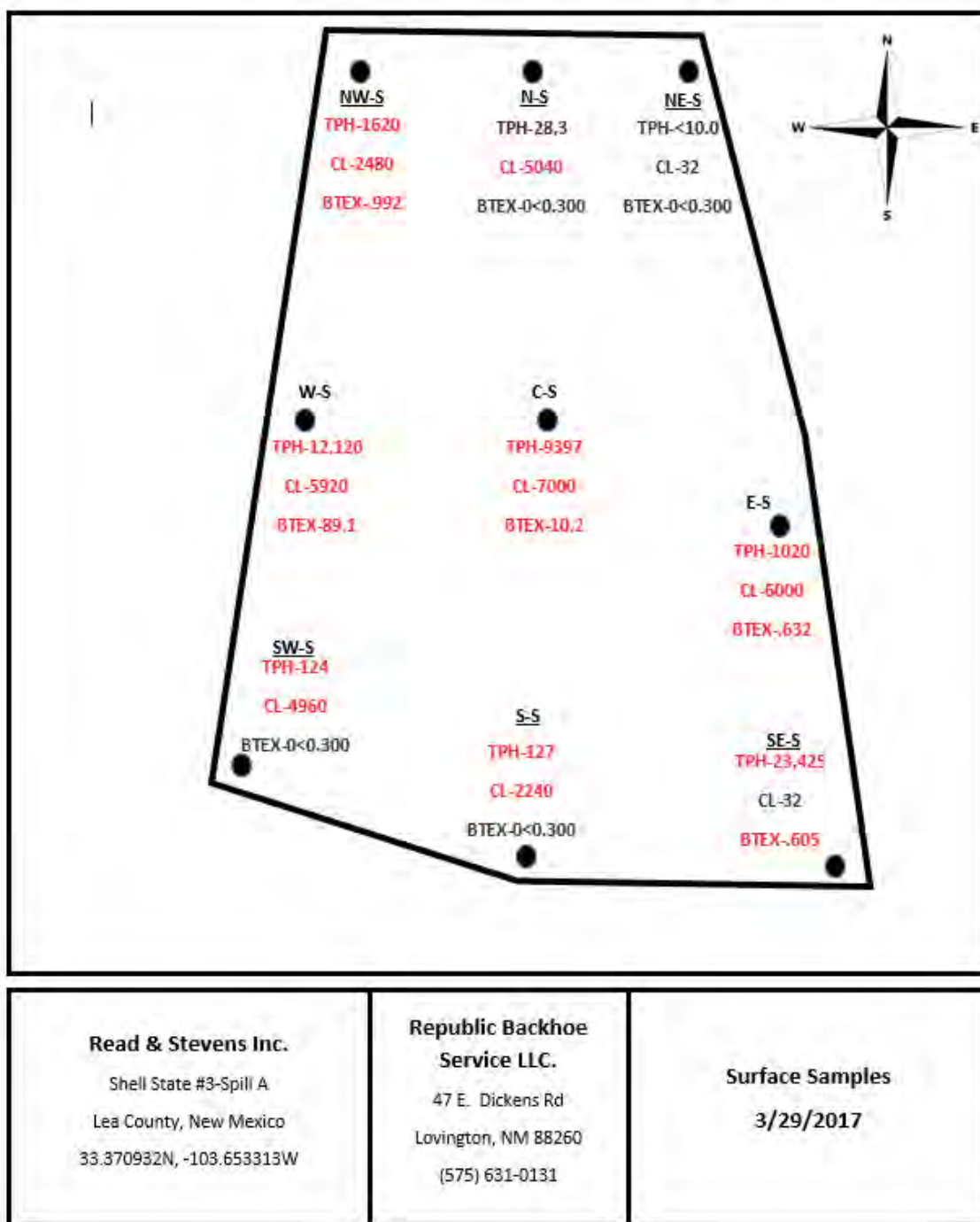
Appendix IV Water Wells Map

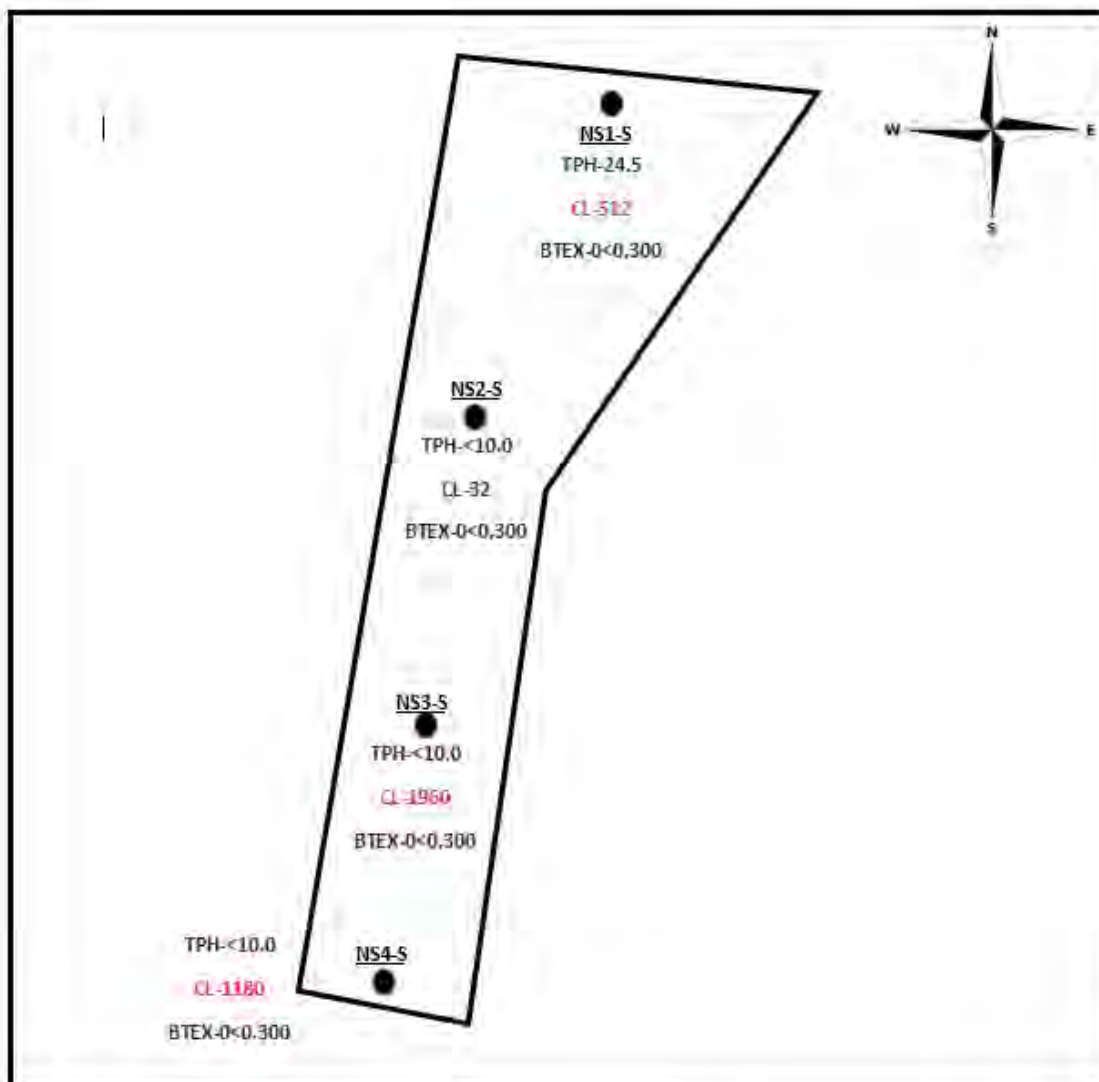


<p>Read & Stevens Inc. Shell State #3 Flowline Leak Lea County, New Mexico 33.370932N, 103.653313W</p>	<p>Republic Backhoe Service LLC 47 E. Dickens Rd Lovington, NH 88260 (575) 631-0131</p>	<p>Annexix TV Locations of Water Wells L-10817 L-12006 POD2 L-09506</p>
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Appendix V

Surface Samples/Results





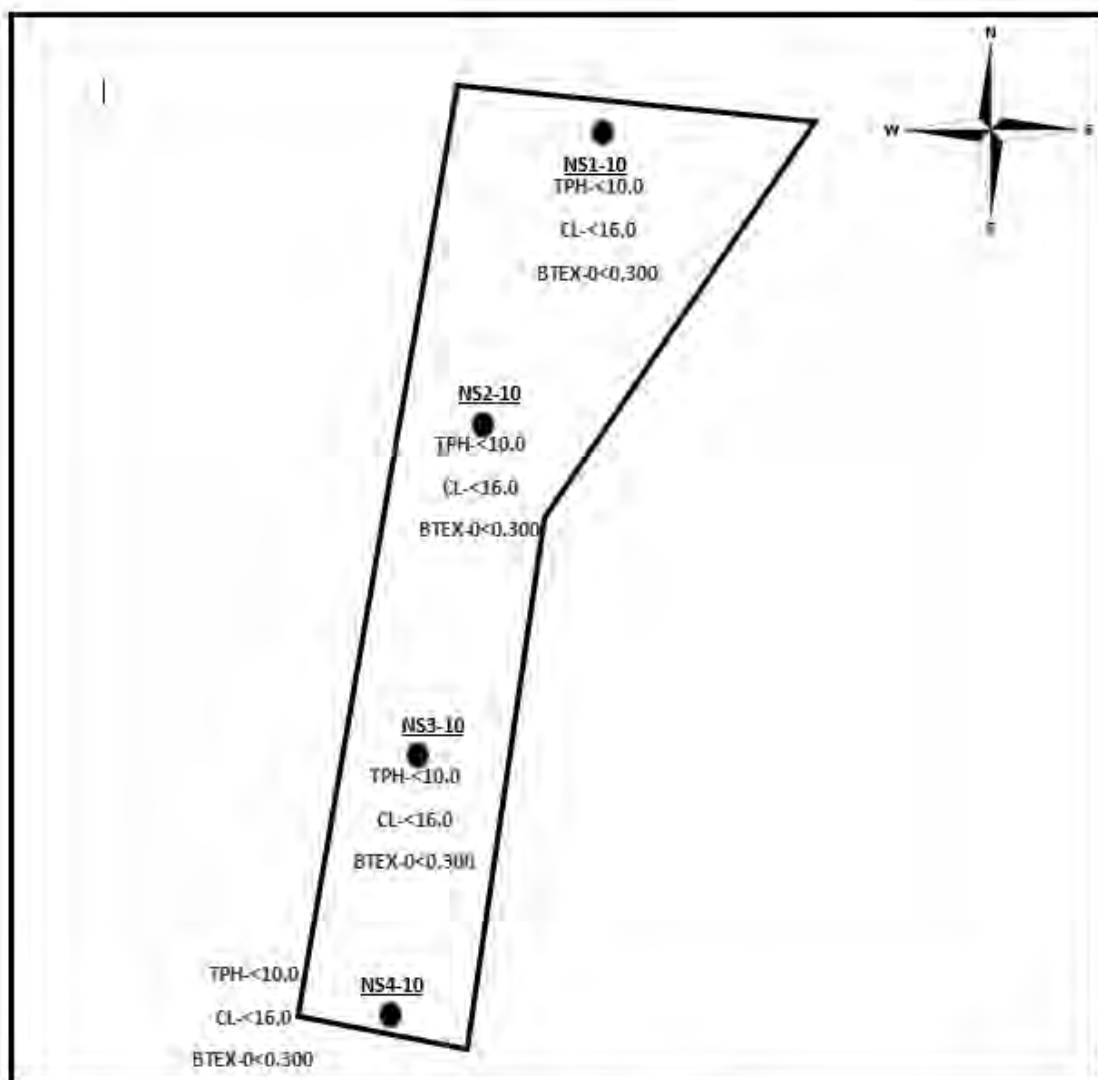
Read & Stevens Inc. Shell State #3-Spill B Lea County, New Mexico 33.370932N, -108.653313W	Republic Backhoe Service LLC. 47 E. Dickens Rd Lovington, NM 88260 (575) 631-0131	Surface Samples 3/29/2017
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Appendix VI

Bore Hole Samples/Results



<p>Read & Stevens Inc.</p> <p>Shell State #3-Spill A</p> <p>Lea County, New Mexico</p> <p>33.370932N, -103.653313W</p>	<p>Republic Backhoe Service LLC.</p> <p>47 E. Dickens Rd</p> <p>Lovington, NM 88260</p> <p>(575) 631-0131</p>	<p>Bore Hole Samples</p> <p>Depth of 20'</p> <p>3/23/2017</p>
---	--	--



Read & Stevens Inc.

Shell State #3-Spill B
Lea County, New Mexico
33.370932N, -103.653313W

**Republic Backhoe
Service LLC.**

47 E. Dickens Rd
Lovington, NM 88260
(575) 631-0131

Bore Hole Samples

Depth of 10'

3/23/2017

Appendix VII

Photos



**Read and Stevens Inc.
Shell State #3 Flowline Leak
Lea County, NM
33.370932N, 103.653313**

**Republic Backhoe
Service LLC
47. East Dickens Rd
Lovington, NM 88260**

**Date
1/26/2017**



**Read and Stevens Inc.
Shell State #3 Flowline Leak
Lea County, NM
33.370932N, 103.653313**

**Republic Backhoe
Service LLC
47. East Dickens Rd
Lovington, NM 88260**

**Date
1/27/2017**



**Read and Stevens Inc.
Shell State #3 Flowline Leak
Lea County, NM
33.370932N, 103.653313**

**Republic Backhoe
Service LLC
47. East Dickens Rd
Lovington, NM 88260**

**Date
6/27/2017
Northwest Corner looking to the
South.**



**Read and Stevens Inc.
Shell State #3 Flowline Leak
Lea County, NM
33.370932N, 103.653313**

**Republic Backhoe
Service LLC
47. East Dickens Rd
Lovington, NM 88260**

**Date
6/27/2017
Hard Caliche Shell made for slow
digging in the center.**



**Read and Stevens Inc.
Shell State #3 Flowline Leak
Lea County, NM
33.370932N, 103.653313**

**Republic Backhoe
Service LLC
47. East Dickens Rd
Lovington, NM 88260**

**Date
6/27/2017
Backfilled South Side and
Continued to dig out the Center.**



**Read and Stevens Inc.
Shell State #3 Flowline Leak
Lea County, NM
33.370932N, 103.653313**

**Republic Backhoe
Service LLC
47. East Dickens Rd
Lovington, NM 88260**

**Date
6/27/2017**



**Read and Stevens Inc.
Shell State #3 Flowline Leak
Lea County, NM
33.370932N, 103.653313**

**Republic Backhoe
Service LLC
47. East Dickens Rd
Lovington, NM 88260**

**Date
6/29/2017
Prepared Center Area for Liner**



**Read and Stevens Inc.
Shell State #3 Flowline Leak
Lea County, NM
33.370932N, 103.653313**

**Republic Backhoe
Service LLC
47. East Dickens Rd
Lovington, NM 88260**

**Date
6/30/2017
Installed 20 Mil liner in the center
area. Continued to backfill the
site.**



<p>Read and Stevens Inc. Shell State #3 Flowline Leak Lea County, NM 33.370932N, 103.653313</p>	<p>Republic Backhoe Service LLC 47. East Dickens Rd Lovington, NM 88260</p>	<p>Date 7/11/2017 Seeded the location on 7/10/17.</p>
---	---	--



**Read and Stevens Inc.
Shell State #3 Flowline Leak
Lea County, NM
33.370932N, 103.653313**

**Republic Backhoe
Service LLC
47. East Dickens Rd
Lovington, NM 88260**

**Date
7/11/2017
Spill Site B**



**Read and Stevens Inc.
Shell State #3 Flowline Leak
Lea County, NM
33.370932N, 103.653313**

**Republic Backhoe
Service LLC
47. East Dickens Rd
Lovington, NM 88260**

**Date
7/11/2017
On north side looking south.**



**Read and Stevens Inc.
Shell State #3 Flowline Leak
Lea County, NM
33.370932N, 103.653313**

**Republic Backhoe
Service LLC
47. East Dickens Rd
Lovington, NM 88260**

**Date
7/11/2017
On west side looking east.**

Appendix VIII
C-141

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	Read and Stevens Inc.	Contact	Joe Tovar
Address	P.O. Box 1518 Roswell, Nm 88202	Telephone No.	(505) 360-2425
Facility Name	Shall State #3	Facility Type	Oil Well/Flowline
Surface Owner	State	Mineral Owner	State
		API No. 3002523014	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	18	11S	33E	660	FWL	2057	FWL	LEA

Latitude 33.371284 Longitude -103.855661

NATURE OF RELEASE

Type of Release	Oil and Produced Water	Volume of Release	5 Oil & PW	Volume Recovered	0
Source of Release	Flowline Leak	Date and Hour of Occurrence	2/22/17	Date and Hour of Discovery	1/24/17 @ 4P M
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	No		
By Whom?	N/A	Date and Hour	N/A		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse	N/A		

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

The contract pumper noticed the flowline leak approx 730' east of the pump jack. He then turned off and shut in the well. A crew was called out to the site and repaired the ruptured flowline.

Describe Area Affected and Cleanup Action Taken.*

The area that was affected measures approx. 100' X 100'. Clean up began the day after the spill was discovered (1-25-17). A backhoe and belly dump began to excavate and haul off contaminated soil from the affected area to Gandy Marley. As of 2-1-17 a total of 380 yards had been hauled off to Gandy-Marley Inc. Also, began to delineate the spill site, and samples were taken to Cardinal Labs on 1-31-2017.

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:	<u>Joe Tovar</u>		
Printed Name:	Joe Tovar		
Title:	Manager Production Operations		
E-mail Address:	jtoovar@readstevens.com		
Date:	2-1-2017	Phone:	505-360-2425
Approved by Environmental Specialist:		Approval Date:	
		Expiration Date:	
Conditions of Approval:		Attached <input type="checkbox"/>	

* Attach Additional Sheets If Necessary

Appendix IX Seed Mixture

Bamert Seed Company Inc.

1897 CR 1813 Muleshoe, TX 79347

(800) 262-9892

Permit # TX00905

Warm Season SSR Grass Seed Mix 350 Bulk in 25# bags

Sales # SO-60263

Description	Pure Seed	Germ	Dormant	Hard Seed	Origin
Bluestem, Little "Cimarron" (Schizachyrium scoparium)	4.32%	82.00%	14.00%	0.00%	TX
Bluestem, Yellow "WW Spar" (Andropogon ischaemum)	7.22%	90.00%	5.00%	0.00%	
Buffalograss, "Texoka" Primed KNO3 (Bouteloua dactyloides)	5.86%	96.00%	0.00%	0.00%	TX
Dropseed, Sand (Sporobolus cryptandrus)	5.49%	31.00%	63.00%	0.00%	
Fescue, Tall "KY 31" (Festuca arundinacea Schreb.)	1.98%	85.00%	0.00%	0.00%	OR
Grama, Blue (Bouteloua gracilis)	19.49%	94.00%	0.00%	0.00%	NM
Grama, Sideoats (Bouteloua curtipendula)	22.06%	46.00%	39.00%	0.00%	KS
Kleingrass, "Selection 75" (Panicum coloratum)	7.82%	95.00%	0.00%	0.00%	TX
Switchgrass, "Blackwell" (Panicum virgatum)	7.82%	21.00%	72.00%	0.00%	TX
Purity: 82.07%	Inert Matter: 17.76%	Other Crop Seed: 0.09%	Weed Seed: 0.09%		

Appendix X

Cardinal Lab Results



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

February 03, 2017

JOE TOVAR
READ & STEVENS
P.O. BOX 1719
LOVINGTON, NM 88260

RE: SHELL STATE

Enclosed are the results of analyses for samples received by the laboratory on 02/02/17 14:46.

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_accrred_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 "Caley D. Keene".

Caley D. Keene
Lab Director/Quality Manager



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

Analytical Results For:

READ & STEVENS
JOE TOVAR
P.O. BOX 1719
LOVINGTON NM, 88260
Fax To: not given

Received: 02/02/2017
Reported: 02/03/2017
Project Name: SHELL STATE
Project Number: NONE GIVEN
Project Location: SHELL #3

Sampling Date: 02/01/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SHELL 6 (H700253-01)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/03/2017	ND	2.19	109	2.00	0.644	
Toluene*	0.051	0.050	02/03/2017	ND	2.15	107	2.00	0.651	
Ethylbenzene*	<0.050	0.050	02/03/2017	ND	2.15	107	2.00	0.687	
Total Xylenes*	<0.150	0.150	02/03/2017	ND	6.07	101	6.00	0.556	
Total BTEX	<0.300	0.300	02/03/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.6-140

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/02/2017	ND	192	96.0	200	10.2	
DRO >C10-C28	49.3	10.0	02/02/2017	ND	204	102	200	9.69	

Surrogate: 1-Chlorooctane 96.5 % 33-147

Surrogate: 1-Chlorooctadecane 107 % 28-171

Cardinal Laboratories

*=Accredited Analyte

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

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

READ & STEVENS
JOE TOVAR
P.O. BOX 1719
LOVINGTON NM, 88260
Fax To: not given

Received: 02/02/2017
Reported: 02/03/2017
Project Name: SHELL STATE
Project Number: NONE GIVEN
Project Location: SHELL #3

Sampling Date: 02/01/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SHELL 7 (H700253-02)

BTEX 80218		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/03/2017	ND	2.19	109	2.00	0.644		
Toluene*	<0.050	0.050	02/03/2017	ND	2.15	107	2.00	0.651		
Ethylbenzene*	<0.050	0.050	02/03/2017	ND	2.15	107	2.00	0.687		
Total Xylenes*	<0.150	0.150	02/03/2017	ND	6.07	101	6.00	0.556		
Total BTEX	<0.300	0.300	02/03/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.6-140

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	02/02/2017	ND	192	96.0	200	10.2		
DRO >C10-C28	24.1	10.0	02/02/2017	ND	204	102	200	9.69		

Surrogate: 1-Chlorooctane 81.9 % 35-147

Surrogate: 1-Chlorooctadecane 81.2 % 28-171

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. To the extent that Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

READ & STEVENS
JOE TOVAR
P.O. BOX 1719
LOVINGTON NM, 88260
Fax To: not given

Received:	02/02/2017	Sampling Date:	02/01/2017
Reported:	02/03/2017	Sampling Type:	Soil
Project Name:	SHELL STATE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	SHELL #3		

Sample ID: SHELL 5 (H700253-03)

BTX 80218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/03/2017	ND	2.19	109	2.00	0.644	
Toluene*	<0.050	0.050	02/03/2017	ND	2.15	107	2.00	0.651	
Ethylbenzene*	<0.050	0.050	02/03/2017	ND	2.15	107	2.00	0.687	
Total Xylenes*	<0.150	0.150	02/03/2017	ND	6.07	101	6.00	0.556	
Total BTX	<0.300	0.300	02/03/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.6-140

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/02/2017	ND	192	96.0	200	10.2	
DRO >C10-C28	58.1	10.0	02/02/2017	ND	204	102	200	9.69	

Surrogate: 1-Chlorooctane 81.3 % 35-147

Surrogate: 1-Chlorooctadecane 88.9 % 38-171

Cardinal Laboratories

*=Accredited Analyte

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

Celey D. Keene, Lab Director/Quality Manager



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

Notes and Definitions

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
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 SM4500C-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

February 06, 2017

ERIC GARCIA

REPUBLIC BACKHOE SERVICES

47 E. DICKENS RD

LOVINGTON, NM 88260

RE: READ & STEVENS #3

Enclosed are the results of analyses for samples received by the laboratory on 01/31/17 12:50.

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	Halocetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 01/31/2017
Reported: 02/06/2017
Project Name: READ & STEVENS #3
Project Number: NONE GIVEN
Project Location: LEA COUNTY, NM

Sampling Date: 01/30/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Celey D. Keene

Sample ID: 2 (H700227-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2200	16.0	02/03/2017	ND	416	104	400	3.77	

Sample ID: 5 (H700227-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2480	16.0	02/03/2017	ND	416	104	400	3.77	

Sample ID: 7 (H700227-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2080	16.0	02/03/2017	ND	416	104	400	3.77	

Cardinal Laboratories

*=Accredited Analyte

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

Celey D. Keene, Lab Director/Quality Manager



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

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit.
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500C-8 does not require samples be received at or below 6°C. Samples reported on an as received basis (wet) unless otherwise noted on report.

Cardinal Laboratories

*=Accredited Analyte

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

Celey D. Keene, Lab Director/Quality Manager



Page 4 of 4

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

February 23, 2017

ERIC GARCIA
REPUBLIC BACKHOE SERVICES
47 E. DICKENS RD
LOVINGTON, NM 88260

RE: SHELL ST#3

Enclosed are the results of analyses for samples received by the laboratory on 02/16/17 9:30.

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	Halacetic 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".

Celey D. Keene
Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 02/16/2017
Reported: 02/23/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 02/15/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: NS 1 (H700398-01)

Chloride, SM4500Cl-B		mg / kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	624	16.0	02/20/2017	ND	448	112	400	0.00	

Sample ID: NS 2 (H700398-02)

Chloride, SM4500Cl-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	02/20/2017	ND	448	112	400	0.00	

Sample ID: NS 3 (H700398-03)

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	02/20/2017	ND	448	112	400	0.00	

Sample ID: NS 4 (H700398-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	02/20/2017	ND	448	112	400	0.00	

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 02/16/2017
Reported: 02/23/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 02/15/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: N 2 (H700398-05)

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	02/19/2017	ND	2.02	101	2.00	7.72		
Toluene*	<0.050	0.050	02/19/2017	ND	1.88	94.2	2.00	9.17		
Ethylbenzene*	<0.050	0.050	02/19/2017	ND	1.84	92.0	2.00	12.1		
Total Xylenes*	<0.150	0.150	02/19/2017	ND	5.25	87.4	6.00	12.0		
Total BTEX	<0.300	0.300	02/19/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.0 % 73.6-140

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/17/2017	ND	187	93.3	200	0.843	
DRO >C10-C28	<10.0	10.0	02/17/2017	ND	201	100	200	0.331	

Surrogate: 1-Chlorooctane 79.9 % 35-147

Surrogate: 1-Chlorooctadecane 89.8 % 28-171

Sample ID: N2 C (H700398-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	02/21/2017	ND	448	112	400	0.00	

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 02/16/2017
Reported: 02/23/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 02/15/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: NE 0 (H700398-07)

BTEX 90218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/19/2017	ND	2.02	101	2.00	7.72	
Toluene*	<0.050	0.050	02/19/2017	ND	1.88	94.2	2.00	9.17	
Ethylbenzene*	<0.050	0.050	02/19/2017	ND	1.84	92.0	2.00	12.1	
Total Xylenes*	<0.150	0.150	02/19/2017	ND	5.25	87.4	6.00	12.0	
Total BTEX	<0.300	0.300	02/19/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.0 % 73.6-140

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/17/2017	ND	187	93.3	200	0.843	
DRO >C10-C28	<10.0	10.0	02/17/2017	ND	201	100	200	0.331	

Surrogate: 1-Chlorooctane 85.9 % 33-147

Surrogate: 1-Chlorooctadecane 93.3 % 28-171

Sample ID: NE 0 C (H700398-08)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	02/21/2017	ND	448	112	400	0.00	

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 02/16/2017
Reported: 02/23/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 02/15/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: NW 6 (H700398-09)

BTEX 80218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/19/2017	ND	2.02	101	2.00	7.72	
Toluene*	<0.050	0.050	02/19/2017	ND	1.88	94.2	2.00	9.17	
Ethylbenzene*	<0.050	0.050	02/19/2017	ND	1.84	92.0	2.00	12.1	
Total Xylenes*	<0.150	0.150	02/19/2017	ND	5.25	87.4	6.00	12.0	
Total BTEX	<0.300	0.300	02/19/2017	ND					

Surrogate: 4-Bromofluorobenzene (P11) 98.8 % 73.6-140

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	02/17/2017	ND	187	93.3	200	0.843		
DRO >C10-C28	<10.0	10.0	02/17/2017	ND	201	100	200	0.331		

Surrogate: 1-Chlorooctane 81.9 % 33-147

Surrogate: 1-Chlorooctadecane 93.6 % 28-171

Sample ID: NW 9 C (H700398-10)

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	02/21/2017	ND	448	112	400	0.00	

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 02/16/2017
Reported: 02/23/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 02/15/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: W 2 (H700398-11)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/19/2017	ND	2.02	101	2.00	7.72	
Toluene*	<0.050	0.050	02/19/2017	ND	1.88	94.2	2.00	9.17	
Ethylbenzene*	<0.050	0.050	02/19/2017	ND	1.84	92.0	2.00	12.1	
Total Xylenes*	<0.150	0.150	02/19/2017	ND	5.25	87.4	6.00	12.0	
Total BTEX	<0.300	0.300	02/19/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.5 % 73.6-140

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/17/2017	ND	191	95.4	200	0.386	
DRO >C10-C28	<10.0	10.0	02/17/2017	ND	206	103	200	2.88	

Surrogate: 1-Chlorooctane 83.0 % 33-147

Surrogate: 1-Chlorooctadecane 99.6 % 28-171

Sample ID: W2 C (H700398-12)

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	02/21/2017	ND	448	112	400	0.00	

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 02/16/2017
Reported: 02/23/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 02/15/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: E 2 (H700398-13)

BTEX 80218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/19/2017	ND	2.02	101	2.00	7.72	
Toluene*	<0.050	0.050	02/19/2017	ND	1.88	94.2	2.00	9.17	
Ethylbenzene*	<0.050	0.050	02/19/2017	ND	1.84	92.0	2.00	12.1	
Total Xylenes*	<0.150	0.150	02/19/2017	ND	5.25	87.4	6.00	12.0	
Total BTEX	<0.300	0.300	02/19/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.0 % 73.6-140

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/17/2017	ND	191	95.4	200	0.386	
DRO >C10-C28	<10.0	10.0	02/17/2017	ND	206	103	200	2.88	

Surrogate: 1-Chlorooctane 82.5 % 35-147

Surrogate: 1-Chlorooctadecane 90.3 % 28-171

Sample ID: E2 C (H700398-14)

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	02/21/2017	ND	448	112	400	0.00	

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 02/16/2017
Reported: 02/23/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 02/15/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S 2 (H700398-15)

BTEX 80218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/19/2017	ND	2.16	108	2.00	0.378	
Toluene*	<0.050	0.050	02/19/2017	ND	2.03	102	2.00	0.392	
Ethylbenzene*	<0.050	0.050	02/19/2017	ND	2.05	103	2.00	0.236	
Total Xylenes*	<0.150	0.150	02/19/2017	ND	5.85	97.5	6.00	0.262	
Total BTEX	<0.300	0.300	02/19/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.5 % 73.6-140

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/17/2017	ND	191	95.4	200	0.386	
DRO >C10-C28	<10.0	10.0	02/17/2017	ND	206	103	200	2.88	

Surrogate: 1-Chlorooctane 77.1 % 35-147

Surrogate: 1-Chlorooctadecane 84.2 % 28-171

Sample ID: S2 C (H700398-16)

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	02/21/2017	ND	448	112	400	0.00	

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 02/16/2017
Reported: 02/23/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 02/15/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SW O (H700398-17)

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	02/19/2017	ND	2.16	108	2.00	0.378	
Toluene*	<0.050	0.050	02/19/2017	ND	2.03	102	2.00	0.392	
Ethylbenzene*	<0.050	0.050	02/19/2017	ND	2.05	103	2.00	0.236	
Total Xylenes*	<0.150	0.150	02/19/2017	ND	5.85	97.5	6.00	0.262	
Total BTEX	<0.300	0.300	02/19/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.8 % 73.6-140

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/17/2017	ND	191	95.4	200	0.386	
DRO >C10-C28	<10.0	10.0	02/17/2017	ND	206	103	200	2.88	

Surrogate: 1-Chlorooctane 84.9 % 33-147

Surrogate: 1-Chlorooctadecane 96.1 % 28-171

Sample ID: SW 1 C (H700398-18)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	02/21/2017	ND	448	112	400	0.00	

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 02/16/2017
Reported: 02/23/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 02/15/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SE 2 (H700398-19)

BTEX 80218		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/19/2017	ND	2.16	108	2.00	0.378		
Toluene*	<0.050	0.050	02/19/2017	ND	2.03	102	2.00	0.392		
Ethylbenzene*	<0.050	0.050	02/19/2017	ND	2.05	103	2.00	0.236		
Total Xylenes*	<0.150	0.150	02/19/2017	ND	5.85	97.5	6.00	0.262		
Total BTEX	<0.300	0.300	02/19/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.5 % 73.6-140

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	02/17/2017	ND	191	95.4	200	0.386		
DRO >C10-C28	<10.0	10.0	02/17/2017	ND	206	103	200	2.88		

Surrogate: 1-Chlorooctane 83.7 % 35-147

Surrogate: 1-Chlorooctadecane 94.0 % 28-171

Sample ID: SE 2 C (H700398-20)

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	02/21/2017	ND	448	112	400	0.00		

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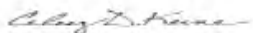
Notes and Definitions

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit.
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500C-B does not require samples be received at or below 6°C. Samples reported on an as received basis (wet) unless otherwise noted on report.

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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Republic Barbecue Service		P.O. #:	
Project Manager: Eric Garcia		Company: Head + Stern	
Address: 47 E Dickerson Rd		Address: PO Box	
City: Lovington		City: Lovington	
Phone #: 575-390-2035		State: NM	
Project #:		Zip: 88240	
Project Name: Shell ST#3		Project Owner: Head + Stern	
Project Location: Tatum		State: NM	
Sample Name: Eric Garcia		Zip: 88240	
FOR LAB USE ONLY		Phone #:	
Lab I.D.		Fax #:	
Sample I.D.		DATE	
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NS 3			



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Republic Backhoe Project Manager: Eric Garcia Address: 47 E Dickens Rd City: Lovington State: NM Zip: 88260 Phone #: 575-390-8035 Fax #: 575-396-7780 Project #: Project Name: Shell 8th St Project Location: 1st turn Sample Name: Eric Garcia		P.O. #: Company: Attn: Address: City: State: Zip: Phone #: Fax #:	
Lab I.D. H700596		Sample I.D. W2 C W2 C E2 C E2 C W2 C W2 C W2 C W2 C W2 C W2 C	
(G)RAB OR (C)OMP # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER ACID/BASE ICE / COOL OTHER		DATE 2/15 2/15 2/15 2/15 2/15 2/15 2/15 2/15 2/15 2/15	
TIME 8:12 8:12 8:30 11:40 11:45 11:15 12:10 12:07		TPH BTEX Chloride	
Delivered By: (Circle One) Sample - UPS - Bus - Other		Refrigerated By: Time: 4:30 Date: 2/16/17 Received By: [Signature] Repetition By: [Signature]	
Checked By: [Signature] Sample Condition Cool <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add Phone #: Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add Fax #: REMARKS: Jasmine barroso@yahoo.com eric.garcia@cardinal.com	



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

February 23, 2017

ERIC GARCIA

REPUBLIC BACKHOE SERVICES

47 E. DICKENS RD

LOVINGTON, NM 88260

RE: SHELL ST#3

Enclosed are the results of analyses for samples received by the laboratory on 02/17/17 9:17.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 02/17/2017
Reported: 02/23/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 02/16/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: C 10' (H700413-01)

BTX 80218		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2017	ND	2.12	106	2.00	3.29		
Toluene*	<0.050	0.050	02/21/2017	ND	1.98	98.9	2.00	2.98		
Ethylbenzene*	<0.050	0.050	02/21/2017	ND	1.96	98.2	2.00	2.35		
Total Xylenes*	<0.150	0.150	02/21/2017	ND	5.65	94.1	6.00	2.87		
Total BTX	<0.300	0.300	02/21/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.0 % 73.6-140

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/17/2017	ND	182	90.9	200	3.52	
DRO >C10-C28	<10.0	10.0	02/17/2017	ND	185	92.5	200	8.68	

Surrogate: 1-Chlorooctane 84.7 % 33-147

Surrogate: 1-Chlorooctadecane 98.3 % 28-171

Sample ID: CENTER 15' (H700413-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	02/17/2017	ND	416	104	400	0.00	

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*=Accredited Analyte

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Celestine D. Keene

Celestine D. Keene, Lab Director/Quality Manager



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

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 SM4500C-B does not require samples be received at or below 6°C. Samples reported on an as received basis (wet) unless otherwise noted on report.

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



ANALYSIS REQUEST

Page 4 of 4



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

March 28, 2017

ERIC GARCIA

REPUBLIC BACKHOE SERVICES

47 E. DICKENS RD

LOVINGTON, NM 88260

RE: SHELL ST#3

Enclosed are the results of analyses for samples received by the laboratory on 03/24/17 13:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704390-16-8. 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/ga/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:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 03/24/2017
Reported: 03/28/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 03/24/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: NS 1 - 10 (H700785-01)

BTEX 80218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/27/2017	ND	1.98	98.8	2.00	5.25	
Toluene*	0.072	0.050	03/27/2017	ND	1.91	95.7	2.00	5.03	
Ethylbenzene*	<0.050	0.050	03/27/2017	ND	1.91	95.5	2.00	4.71	
Total Xylenes*	<0.150	0.150	03/27/2017	ND	5.44	90.7	6.00	4.67	
Total BTEX	<0.300	0.300	03/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.2 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	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	03/27/2017	ND	181	90.6	200	0.163	
DRO >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	

Surrogate: 1-Chlorooctane 89.9 % 25.1-158

Surrogate: 1-Chlorooctadecane 93.7 % 26.8-170

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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 03/24/2017
Reported: 03/28/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 03/24/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: NS 2 - 10 (H700785-02)

BTEX 80218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/27/2017	ND	1.98	98.8	2.00	5.25	
Toluene*	<0.050	0.050	03/27/2017	ND	1.91	95.7	2.00	5.03	
Ethylbenzene*	<0.050	0.050	03/27/2017	ND	1.91	95.5	2.00	4.71	
Total Xylenes*	<0.150	0.150	03/27/2017	ND	5.44	90.7	6.00	4.67	
Total BTEX	<0.300	0.300	03/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.4 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	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	03/27/2017	ND	181	90.6	200	0.163	
DRO >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	

Surrogate: 1-Chlorooctane 84.4 % 25.1-158

Surrogate: 1-Chlorooctadecane 79.0 % 26.8-170

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 03/24/2017
Reported: 03/28/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 03/24/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: NS 3 - 10 (H700785-03)

BTX 80218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/27/2017	ND	1.98	98.8	2.00	5.25	
Toluene*	<0.050	0.050	03/27/2017	ND	1.91	95.7	2.00	5.03	
Ethylbenzene*	<0.050	0.050	03/27/2017	ND	1.91	95.5	2.00	4.71	
Total Xylenes*	<0.150	0.150	03/27/2017	ND	5.44	90.7	6.00	4.67	
Total BTX	<0.300	0.300	03/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.6 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	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	03/27/2017	ND	181	90.6	200	0.163	
DRO >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	

Surrogate: 1-Chlorooctane 86.8 % 23.1-138

Surrogate: 1-Chlorooctadecane 92.7 % 26.8-170

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* = Accredited Analyte

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 03/24/2017
Reported: 03/28/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 03/24/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: NS 4 - 10 (H700785-04)

BTX 80218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/27/2017	ND	1.98	98.8	2.00	5.25	
Toluene*	<0.050	0.050	03/27/2017	ND	1.91	95.7	2.00	5.03	
Ethylbenzene*	<0.050	0.050	03/27/2017	ND	1.91	95.5	2.00	4.71	
Total Xylenes*	<0.150	0.150	03/27/2017	ND	5.44	90.7	6.00	4.67	
Total BTX	<0.300	0.300	03/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.8 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	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	03/27/2017	ND	181	90.6	200	0.163	
DRO >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	

Surrogate: 1-Chlorooctane 85.5 % 25.1-158

Surrogate: 1-Chlorooctadecane 86.5 % 26.8-170

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 03/24/2017
Reported: 03/28/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 03/23/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: N 20 (H700785-05)

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	03/27/2017	ND	1.98	98.8	2.00	5.25		
Toluene*	<0.050	0.050	03/27/2017	ND	1.91	95.7	2.00	5.03		
Ethylbenzene*	<0.050	0.050	03/27/2017	ND	1.91	95.5	2.00	4.71		
Total Xylenes*	<0.150	0.150	03/27/2017	ND	5.44	90.7	6.00	4.67		
Total BTEX	<0.300	0.300	03/27/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.2 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	03/27/2017	ND	432	108	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	03/27/2017	ND	181	90.6	200	0.163		
DRO >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743		

Surrogate: 1-Chlorooctane 91.9 % 25.1-158

Surrogate: 1-Chlorooctadecane 94.4 % 26.8-170

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 03/24/2017
Reported: 03/28/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 03/23/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: NE 20 (H700785-06)

BTEX 80218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/27/2017	ND	1.98	98.8	2.00	5.25	
Toluene*	<0.050	0.050	03/27/2017	ND	1.91	95.7	2.00	5.03	
Ethylbenzene*	<0.050	0.050	03/27/2017	ND	1.91	95.5	2.00	4.71	
Total Xylenes*	<0.150	0.150	03/27/2017	ND	5.44	90.7	6.00	4.67	
Total BTEX	<0.300	0.300	03/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.4 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	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	03/27/2017	ND	181	90.6	200	0.163	
DRO >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	

Surrogate: 1-Chlorooctane 88.6 % 25.1-158

Surrogate: 1-Chlorooctadecane 91.7 % 26.8-170

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 03/24/2017
Reported: 03/28/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 03/23/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: E 20 (H700785-07)

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	03/27/2017	ND	1.98	98.8	2.00	5.25	
Toluene*	<0.050	0.050	03/27/2017	ND	1.91	95.7	2.00	5.03	
Ethylbenzene*	<0.050	0.050	03/27/2017	ND	1.91	95.5	2.00	4.71	
Total Xylenes*	<0.150	0.150	03/27/2017	ND	5.44	90.7	6.00	4.67	
Total BTEX	<0.300	0.300	03/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.4 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	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	03/27/2017	ND	181	90.6	200	0.163	
DRO >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	

Surrogate: 1-Chlorooctane 94.0 % 25.1-158

Surrogate: 1-Chlorooctadecane 98.6 % 26.8-170

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 03/24/2017
Reported: 03/28/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 03/23/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SE 20 (H700785-08)

BTEX 80218			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/27/2017	ND	1.98	98.8	2.00	5.25	
Toluene*	<0.050	0.050	03/27/2017	ND	1.91	95.7	2.00	5.03	
Ethylbenzene*	<0.050	0.050	03/27/2017	ND	1.91	95.5	2.00	4.71	
Total Xylenes*	<0.150	0.150	03/27/2017	ND	5.44	90.7	6.00	4.67	
Total BTEX	<0.300	0.300	03/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.9 % 72-148

Chloride, SM4500Cl-B			mg/kg		Analyzed By: HM				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	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	03/27/2017	ND	181	90.6	200	0.163	
DRO >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	

Surrogate: 1-Chlorooctane 83.0 % 23.1-158

Surrogate: 1-Chlorooctadecane 86.2 % 26.8-170

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 03/24/2017
Reported: 03/28/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 03/23/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: S 20 (H700785-09)

BTEX 80218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/27/2017	ND	1.98	98.8	2.00	5.25	
Toluene*	<0.050	0.050	03/27/2017	ND	1.91	95.7	2.00	5.03	
Ethylbenzene*	<0.050	0.050	03/27/2017	ND	1.91	95.5	2.00	4.71	
Total Xylenes*	<0.150	0.150	03/27/2017	ND	5.44	90.7	6.00	4.67	
Total BTEX	<0.300	0.300	03/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.8 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	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	03/27/2017	ND	181	90.6	200	0.163	
DRO >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	

Surrogate: 1-Chlorooctane 90.6 % 25.1-158

Surrogate: 1-Chlorooctadecane 92.5 % 26.8-170

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 03/24/2017
Reported: 03/28/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 03/23/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SW 20 (H700785-10)

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	03/27/2017	ND	1.96	98.8	2.00	5.25	
Toluene*	<0.050	0.050	03/27/2017	ND	1.91	95.7	2.00	5.03	
Ethylbenzene*	<0.050	0.050	03/27/2017	ND	1.91	95.5	2.00	4.71	
Total Xylenes*	<0.150	0.150	03/27/2017	ND	5.44	90.7	6.00	4.67	
Total BTEX	<0.300	0.300	03/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.8 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	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	03/27/2017	ND	181	90.6	200	0.163	
DRO >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	

Surrogate: 1-Chlorooctane 88.6 % 25.1-158

Surrogate: 1-Chlorooctadecane 92.4 % 26.8-170

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 03/24/2017
Reported: 03/28/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 03/23/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W 20 (H700785-11)

BTEX 80218			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/27/2017	ND	1.98	98.8	2.00	5.25	
Toluene*	<0.050	0.050	03/27/2017	ND	1.91	95.7	2.00	5.03	
Ethylbenzene*	<0.050	0.050	03/27/2017	ND	1.91	95.5	2.00	4.71	
Total Xylenes*	<0.150	0.150	03/27/2017	ND	5.44	90.7	6.00	4.67	
Total BTEX	<0.300	0.300	03/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.8 % 72-148

Chloride, SM4500Cl-B			mg/kg		Analyzed By: HM				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	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	03/27/2017	ND	181	90.6	200	0.163	
DRO >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	

Surrogate: 1-Chlorooctane 92.6 % 25.1-158

Surrogate: 1-Chlorooctadecane 88.5 % 26.8-170

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 03/24/2017
Reported: 03/28/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 03/23/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: NW 20 (H700785-12)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene ^a	<0.050	0.050	03/27/2017	ND	1.98	98.8	2.00	5.25		
Toluene ^a	<0.050	0.050	03/27/2017	ND	1.91	95.7	2.00	5.03		
Ethylbenzene ^a	<0.050	0.050	03/27/2017	ND	1.91	95.5	2.00	4.71		
Total Xylenes ^a	<0.150	0.150	03/27/2017	ND	5.44	90.7	6.00	4.67		
Total BTEX	<0.300	0.300	03/27/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.6 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/27/2017	ND	181	90.6	200	0.163	
DRO >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	

Surrogate: 1-Chlorooctane 92.9 % 25.1-158

Surrogate: 1-Chlorooctadecane 96.6 % 26.8-170

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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 03/24/2017
Reported: 03/28/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 03/23/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: CENTER 20 (H700785-13)

BTEX 80218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/28/2017	ND	1.98	98.8	2.00	5.25	
Toluene*	<0.050	0.050	03/28/2017	ND	1.91	95.7	2.00	5.03	
Ethylbenzene*	<0.050	0.050	03/28/2017	ND	1.91	95.5	2.00	4.71	
Total Xylenes*	<0.150	0.150	03/28/2017	ND	5.44	90.7	6.00	4.67	
Total BTEX	<0.300	0.300	03/28/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.1 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/27/2017	ND	181	90.6	200	0.163	
DRO >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	

Surrogate: 1-Chlorooctane 82.9 % 25.1-158

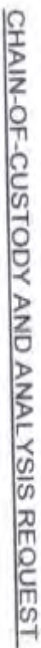
Surrogate: 1-Chlorooctadecane 84.3 % 26.8-170

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Celey D. Keene, Lab Director/Quality Manager



BILLS TO

ANALYSIS REQUEST

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 353-2326



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

March 28, 2017

ERIC GARCIA
REPUBLIC BACKHOE SERVICES
47 E. DICKENS RD
LOVINGTON, NM 88260

RE: SHELL ST#3

Enclosed are the results of analyses for samples received by the laboratory on 03/24/17 13:00.

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 "Caley D. Keene".

Caley D. Keene
Lab Director/Quality Manager



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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 03/24/2017
Reported: 03/28/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 03/24/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: NS 1 - 10 (H700785-01)

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	03/27/2017	ND	1.98	98.8	2.00	5.25	
Toluene*	0.072	0.050	03/27/2017	ND	1.91	95.7	2.00	5.03	
Ethylbenzene*	<0.050	0.050	03/27/2017	ND	1.91	95.5	2.00	4.71	
Total Xylenes*	<0.150	0.150	03/27/2017	ND	5.44	90.7	6.00	4.67	
Total BTEX	<0.300	0.300	03/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.2 % 72-148

Chloride, SM4500C-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	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	03/27/2017	ND	181	90.6	200	0.163	
DRO >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	

Surrogate: 1-Chlorooctane 89.9 % 25.1-158

Surrogate: 1-Chlorodecane 93.7 % 26.8-170

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 03/24/2017
Reported: 03/28/2017
Project Name: SHELL ST#3
Project Number:
Project Location: TATUM

Sampling Date: 03/24/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: NS 2 - 10 (H700785-02)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene ^a	<0.050	0.050	03/27/2017	ND	1.98	96.8	2.00	5.25	
Toluene ^a	<0.050	0.050	03/27/2017	ND	1.91	95.7	2.00	5.03	
Ethylbenzene ^a	<0.050	0.050	03/27/2017	ND	1.91	95.5	2.00	4.71	
Total Xylenes ^a	<0.150	0.150	03/27/2017	ND	5.44	90.7	6.00	4.67	
Total BTEX	<0.300	0.300	03/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 98.4 36 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRD C5-C10	<10.0	10.0	03/27/2017	ND	181	90.6	200	0.163	
DRD >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	

Surrogate: 1-Chlorooctane 84.4 36 25.1-155

Surrogate: 1-Chlorooctadecane 79.0 36 26.8-170

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 03/24/2017
Reported: 03/28/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 03/24/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: NS 3 - 10 (H700785-03)

BTEX 80218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene ^a	<0.050	0.050	03/27/2017	ND	1.98	98.8	2.00	5.25	
Toluene ^a	<0.050	0.050	03/27/2017	ND	1.91	95.7	2.00	5.03	
Ethylbenzene ^a	<0.050	0.050	03/27/2017	ND	1.91	95.5	2.00	4.71	
Total Xylenes ^a	<0.150	0.150	03/27/2017	ND	5.44	90.7	6.00	4.67	
Total BTEX	<0.300	0.300	03/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.6 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	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	03/27/2017	ND	181	90.6	200	0.163	
DRQ >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	

Surrogate: 1-Chlorooctane 86.8 % 23.1-138

Surrogate: 1-Chlorodecane 92.7 % 26.8-170

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Celey D. Keene, Lab Director/Quality Manager



REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received:	03/24/2017
Reported:	03/28/2017
Project Name:	SHELL ST#3
Project Number:	NONE GIVEN
Project Location:	TATUM

Sampling Date: 03/24/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: NS 4 - 10 (H700785-04)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene ^a	<0.050	0.050	03/27/2017	ND	1.98	98.8	2.00	5.25	
Toluene ^a	<0.050	0.050	03/27/2017	ND	1.91	95.7	2.00	5.03	
Ethylbenzene ^a	<0.050	0.050	03/27/2017	ND	1.91	95.5	2.00	4.71	
Total Xylenes ^a	<0.150	0.150	03/27/2017	ND	5.44	90.7	6.00	4.67	
Total BTEX	<0.300	0.300	03/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID)	98.5 %	72-148
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Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	400	3.77	

TPH 8015M mg/kg

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/27/2017	ND	181	90.6	200	0.163	
DRO >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	

Surrogate: 1-Chlorooctane	85.5 %	25.1-158
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Surrogate: 1-Chlorooctadecane	86.5%	26.8-170
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[illegible]

Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 03/24/2017
Reported: 03/28/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 03/23/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: N 20 (H700785-05)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/27/2017	ND	1.98	98.8	2.00	5.25	
Toluene*	<0.050	0.050	03/27/2017	ND	1.91	95.7	2.00	5.03	
Ethylbenzene*	<0.050	0.050	03/27/2017	ND	1.91	95.5	2.00	4.71	
Total Xylenes*	<0.150	0.150	03/27/2017	ND	5.44	90.7	6.00	4.67	
Total BTX	<0.300	0.300	03/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.2 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRD C6-C10	<10.0	10.0	03/27/2017	ND	181	90.6	200	0.163	
GRD >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	

Surrogate: 1-Chlorooctane 91.9 % 25.1-155

Surrogate: 1-Chlorodecane 94.4 % 26.8-170

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 03/24/2017
Reported: 03/28/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 03/23/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: NE 20 (H700785-06)

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	03/27/2017	ND	1.98	98.8	2.00	5.25	
Toluene*	<0.050	0.050	03/27/2017	ND	1.91	95.7	2.00	5.03	
Ethylbenzene*	<0.050	0.050	03/27/2017	ND	1.91	95.5	2.00	4.71	
Total Xylenes*	<0.150	0.150	03/27/2017	ND	5.44	90.7	6.00	4.67	
Total BTEX	<0.300	0.300	03/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.4 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRD C5-C10	<10.0	10.0	03/27/2017	ND	181	90.6	200	0.163	
DRD >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	

Surrogate: 1-Chlorooctane 88.6 % 25.1-158

Surrogate: 1-Chlorooctadecane 91.7 % 26.8-170

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

 Received: 03/24/2017
 Reported: 03/28/2017
 Project Name: SHELL ST#3
 Project Number: NONE GIVEN
 Project Location: TATUM

 Sampling Date: 03/23/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: E 20 (H700785-07)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPO	Qualifier
Benzene*	<0.050	0.050	03/27/2017	ND	1.98	98.8	2.00	5.25	
Toluene*	<0.050	0.050	03/27/2017	ND	1.91	95.7	2.00	5.03	
Ethylbenzene*	<0.050	0.050	03/27/2017	ND	1.91	95.5	2.00	4.71	
Total Xylenes*	<0.150	0.150	03/27/2017	ND	5.44	90.7	6.00	4.67	
Total BTEX	<0.300	0.300	03/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PDE) 98.4 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPO	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPO	Qualifier
GRD C6-C10	<10.0	10.0	03/27/2017	ND	181	90.6	200	0.163	
DRO >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	


Surrogate: 1-Chlorooctane 94.0 % 22.1-153

Surrogate: 1-Chlorooctadecane 93.6 % 26.8-179

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 Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 03/24/2017
Reported: 03/28/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 03/23/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SE 20 (H700785-08)

BTEX 80218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/27/2017	ND	1.98	98.8	2.00	5.25	
Toluene*	<0.050	0.050	03/27/2017	ND	1.91	95.7	2.00	5.03	
Ethylbenzene*	<0.050	0.050	03/27/2017	ND	1.91	95.5	2.00	4.71	
Total Xylenes*	<0.150	0.150	03/27/2017	ND	5.44	90.7	6.00	4.67	
Total BTEX	<0.300	0.300	03/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (P/E) 98.9 % 72-148

Chloride, SM4500C1-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	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	03/27/2017	ND	181	90.6	200	0.163	
DRO >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	

Surrogate: 1-Chlorooctane 95.0 % 25.1-153

Surrogate: 1-Chlorooctadecane 95.2 % 26.8-170

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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:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 03/24/2017
Reported: 03/28/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 03/23/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: S 20 (H700785-09)

BTEX 80218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/27/2017	ND	1.98	98.8	2.00	5.25	
Toluene*	<0.050	0.050	03/27/2017	ND	1.91	95.7	2.00	5.03	
Ethylbenzene*	<0.050	0.050	03/27/2017	ND	1.91	95.5	2.00	4.71	
Total Xylenes*	<0.150	0.150	03/27/2017	ND	5.44	90.7	6.00	4.67	
Total BTEX	<0.300	0.300	03/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIL)		98.8 %	72-148						
Chloride, 5M4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GR0 C6-C10	<10.0	10.0	03/27/2017	ND	181	90.6	200	0.163	
DRO >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	

Surrogate: 1-Chlorooctane 99.6 % 25.1-158

Surrogate: 1-Chlorodecane 97.5 % 26.8-170

Cardinal Laboratories

*=Accredited Analyte

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Ceiley D. Keene

Ceiley D. Keene, Lab Director/Quality Manager

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 03/24/2017
Reported: 03/28/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 03/23/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SW 20 (H700785-10)

BTEX 80218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/27/2017	ND	1.98	98.8	2.00	5.25	
Toluene*	<0.050	0.050	03/27/2017	ND	1.91	95.7	2.00	5.03	
Ethylbenzene*	<0.050	0.050	03/27/2017	ND	1.91	95.5	2.00	4.71	
Total Xylenes*	<0.150	0.150	03/27/2017	ND	5.44	90.7	6.00	4.67	
Total BTEX	<0.300	0.300	03/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (P12) 98.8% 72-145

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	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 C5-C10	<10.0	10.0	03/27/2017	ND	181	90.6	200	0.163	
DRO >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	

Surrogate: 1-Chlorooctane 88.6% 23.1-158

Surrogate: 1-Chlorodecane 92.4% 26.8-170

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* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 03/24/2017
Reported: 03/28/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 03/23/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W 20 (H700785-11)

BTEX 80218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/27/2017	ND	1.98	98.8	2.00	5.25	
Toluene*	<0.050	0.050	03/27/2017	ND	1.91	95.7	2.00	5.03	
Ethylbenzene*	<0.050	0.050	03/27/2017	ND	1.91	95.5	2.00	4.71	
Total Xylenes*	<0.150	0.150	03/27/2017	ND	5.44	90.7	6.00	4.67	
Total BTEX	<0.300	0.300	03/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (P12) 97.8 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	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	03/27/2017	ND	181	90.6	200	0.163	
DRO >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	

Surrogate: 1-Chlorooctane 92.8 % 25.1-158

Surrogate: 1-Chlorooctadecane 88.5 % 26.8-170

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Analytical Results For:REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONEReceived: 03/24/2017
Reported: 03/28/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUMSampling Date: 03/23/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: NW 20 (H700785-12)

BTEX 80218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/27/2017	ND	1.98	98.8	2.00	5.25	
Toluene*	<0.050	0.050	03/27/2017	ND	1.91	95.7	2.00	5.03	
Ethylbenzene*	<0.050	0.050	03/27/2017	ND	1.91	95.5	2.00	4.71	
Total Xylenes*	<0.150	0.150	03/27/2017	ND	5.44	90.7	6.00	4.67	
Total BTEX	<0.300	0.300	03/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 98.6 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C5-C10	<10.0	10.0	03/27/2017	ND	181	90.6	200	0.163	
DRO >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	

Surrogate: 1-Chlorooctane 92.9 % 25.1-158

Surrogate: 1-Chlorooctadecane 98.6 % 26.8-170

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
ERIC GARCIA
47 E. DICKENS RD
LOVINGTON NM, 88260
Fax To: NONE

Received: 03/24/2017
Reported: 03/28/2017
Project Name: SHELL ST#3
Project Number: NONE GIVEN
Project Location: TATUM

Sampling Date: 03/23/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: CENTER 20 (H700785-13)

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	03/28/2017	ND	1.98	98.8	2.00	5.25	
Toluene*	<0.050	0.050	03/28/2017	ND	1.91	95.7	2.00	5.03	
Ethylbenzene*	<0.050	0.050	03/28/2017	ND	1.91	95.5	2.00	4.71	
Total Xylenes*	<0.150	0.150	03/28/2017	ND	5.44	90.7	6.00	4.67	
Total BTEX	<0.300	0.300	03/28/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIZ) 98.1 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/27/2017	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/27/2017	ND	181	90.6	200	0.163	
DRO >C10-C28	<10.0	10.0	03/27/2017	ND	189	94.5	200	0.743	

Surrogate: 1-Chlorooctane 92.7 % 25.1-158

Surrogate: 1-Chlorodecane 94.3 % 26.8-170

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Ceiley D. Keene, Lab Director/Quality Manager

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Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
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.
xx	Samples not received at proper temperature of 6°C or below.
xxx	Insufficient time to reach temperature.
-	Chloride by SM4500C-B does not require samples be received at or below 6°C. Samples reported on an as received basis (wet) unless otherwise noted on report.

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Celey D. Keane, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 383-2326 FAX (575) 383-2476

Company Name Republic Bachhoe Service		BILL TO		ANALYSIS REQUEST	
Project Manager Eric Garcia		P.O. #			
Address 47 E Dickens Rd		Company Head + Stevens			
City Lovington		Min Joe Towler			
Phone # 575-863-0131		Address: P.O. Box 1516			
State NM Zip 88240		City Roswell			
Project #		State NM Zip 88202			
Project Name Shell St #3		Phone #			
Project Location Tatum		Fax #			
Sampler Name Mario Garcia		SAMPLING			
Lab I.D.		DATE		TIME	
Sample I.D.		TPH		Chloride	
Matrix		STEX			
GROUNDWATER					
WASTEWATER					
SOIL					
SLUDGE					
OTHER					
ACID/BASE					
ICE / COOL					
OTHER					
CONTAINERS					
GYRAB OR COMP					
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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Republic Bailbore Service Project Manager: Eric Gaurer Address: 47 E Dickens Rd City: Livingston State: NM Zip: 88400 Phone #: 575-393-2226 Fax #: 575-393-2476 101 East Mariand, Hobbs, NM 88240 (575) 393-2226 FAX (575) 393-2476		BILL TO Company: Lead & Street Attn: Joe Tovar Address: PO Box 578 City: Roswell State: NM Zip: 88220 Phone #: 575-393-2226 Fax #: 575-393-2476		ANALYSIS REQUEST	
Project Name: Shell #1 #3 Project Location: Tatum Sampler Name: Eric Gaurer	Project #: Project Owner:	P.O. #: Company: Lead & Street Attn: Joe Tovar Address: PO Box 578 City: Roswell State: NM Zip: 88220 Phone #: 575-393-2226 Fax #: 575-393-2476			
Lab ID: H160785 Sample ID: W 20 NEAD NW20 11 12 13 Center 20	MATRIX # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER ACID/BASE: ICE / COOL OTHER	SAMPLING DATE TIME 9/23 1:57 10:50 1:16	TPH Chloride BTEX		
Retained By: [Signature] Time: 3:47 Received By: [Signature] Time: 3:16 Delivered By: (Circle One) [Signature] Sample Condition: [Signature] Sampler - UPS: [Signature] Bus - Other: [Signature]		REMARKS Tried to call Customer Twice on NW20 Sample to 3-24-17 @ 14:00hrs			