

# SITE INFORMATION

## Report Type: Closure Report

JUN 06 2014

RECEIVED

<b>General Site Information:</b>				
Site:	Oxy Spumoni State #1			
Company:	COG Operating LLC			
Section, Township, and Range:	16	17S	31E	
Lease Number:	API# 30-015-33089			
County:	Eddy County, NM			
GPS:	N 32.82961°		W 103.86910°	
Surface Owner:	State			
Mineral Owner:				
Directions:	At the intersection of Hwy 529 and Hwy 82, go East on Hwy 82 for 0.3 mile, turn North on CR 223 (Sweet Gum Rd) and go 1.2 miles, turn East and go 0.2 mile to location.			

<b>Release Data:</b>	
Date Released:	10/27/2013
Type of Release:	Oil and produced water
Source of Contamination:	Oil tank
Fluid Released:	1 bbl of oil and 510 bbls of produced water
Fluids Recovered:	1 bbl of oil and 459 bbls of produced water

<b>Official Communication:</b>		
Name:	Pat Ellis	Cliff Brunson
Company:	COG Operating LLC	BBC International, Inc.
Address:	550 W. Texas Ave., Ste. 1300	1324 W. Marland
PO Box:		PO Box 805
City, State, Zip Code:	Midland, TX 79701	Hobbs, NM 88241
Phone Number:	(432) 686-3023	(575) 397-6388
Fax:	(432) 684-7137	(575) 397-0397
Email:	pellis@conchoresources.com	cbrunson@bbcinternational.com

<b>Ranking Criteria:</b>		
<b>Depth to Groundwater:</b>	<b>Ranking Score</b>	<b>Site Data</b>
<50 ft.	20	
50-99 ft.	10	
>100 ft.	0	0

<b>Well Head Protection:</b>	<b>Ranking Score</b>	<b>Site Data</b>
Water Source <1,000 ft., Private <200	20	
Water Source >1,000 ft., Private >200	0	0

<b>Surface Body of Water:</b>	<b>Ranking Score</b>	<b>Site Data</b>
<200 ft.	20	
200 ft. - 1,000 ft.	10	
>1,000 ft.	0	0

<b>Total Ranking Score:</b>	0
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Acceptable Soil RRAL (mg/kg)		
Benzene	Total BTEX	TPH
10	50	5000



# **COG Operating LLC**

## **Oxy Spumoni State #001**

**(Release Date 10/27/2013)**

**Unit P, Section 16, Township 17 South, Range 31 East  
Eddy County, New Mexico  
GPS: N 32.82961° W 103.86910°**

### **ENVIRONMENTAL SITE INVESTIGATION**

### **CLOSURE REPORT**

PERFORMED BY:

**BBC INTERNATIONAL, INC.**  
WORLD-WIDE ENVIRONMENTAL SPECIALISTS  
1324 W. MARLAND BLVD.  
P. O. BOX 805  
HOBBS, NEW MEXICO 88240  
(575) 397-6388 • FAX (575) 397-0397

**June 4, 2014**

PREPARED FOR:

**MR. PAT ELLIS  
MANAGER, HSE  
COG OPERATING LLC  
FASKEN CENTER TOWER II  
550 WEST TEXAS AVENUE, SUITE 100  
MIDLAND, TEXAS 79701**

Mr. Mike Bratcher  
Compliance Officer  
Oil Conservation Division, District 2  
811 South First  
Artesia, NM 88210

Re: Closure plan for COG Operating LLC, Oxy Spumoni State #001, Unit P,  
Section 16, Township 17 South, Range 31 East, Eddy County, NM

## **1.0 SITE CHARACTERIZATION**

The subject site is located East of Maljamar, NM, in Section 16, Township 17 South, and Range 31 East, Eddy County, New Mexico. The GPS coordinates are N 32.82961° W 103.86910°. The site consists of undeveloped rangeland and petroleum production facilities. On October 27, 2013, a leak occurred at an oil tank. The spill measured roughly 125 feet in length and 75 feet in width. Approximately 1 bbl of oil and 510 bbls of produced water were released and 1 bbls of oil and 459 bbls of produced water were recovered.

A diagram of the location including the sample points can be reviewed in Appendix I of this report. The surface soil is tan or reddish sand with caliche and rock. There is no water source within 1,000 feet of this site. Based on the data from the Eddy County Groundwater Trend Map, the depth to groundwater in Section 16, Township 17 South, and Range 31 East is approximately 325 feet. The initial C-141 for the leak is at the end of this report in Appendix III.

## **2.0 SITE INVESTIGATION ACTIVITIES**

On November 21, 2013, and November 22, 2013, BBC personnel conducted a delineation of the site using a hand auger. The site delineation occurred after initial spill response activities had been conducted by COG. Sample points were taken at 1 foot and at 2 feet in the area of SP1. At SP2, samples were taken at depths of 1 foot and 2 feet. Sample points were taken at 1 foot and 2 feet at SP3. At SP4, samples were taken 1 foot, 2 feet, 4 feet, and 6 feet. And, SP5, samples were taken at 1 foot and 2 feet. The samples were delivered to Cardinal Laboratories for BTEX, chloride content, and TPH analysis. Only the Samples taken at 1 foot were tested for BTEX and TPH. All samples were tested for chloride content. The BTEX results were as follows: All samples results were below reporting limits except the toluene at SP5 at 1 foot, which was 0.053 mg/Kg. The chloride content for samples at SP1 were 1,070 mg/Kg at 1 foot and 96 mg/Kg at 2 feet. At SP2, the chloride results were 240 mg/Kg at 1 foot and 128 mg/Kg at 2 feet. The chloride results at SP3 were 752 mg/Kg at 1 foot and 32 m/Kg at 2 feet. At SP4, the chloride results were 4,800 mg/Kg at 1 foot, 5,040 mg/Kg at 2 feet,

19,800 mg/Kg at 4 feet, and 11,600 mg/Kg at 6 feet. And, at SP5 the chloride results were 32 mg/Kg at 1 foot and 576 mg/Kg 2 feet.

Upon review of the initial chloride results, it was determined that additional sampling would need to be completed at SP4 and SP5. Therefore, on December 19, 2013, additional samples were conducted using a backhoe at 7 feet and 8 feet at SP4 and at 3 feet and 4 feet at SP5. The samples were taken to Cardinal Laboratories for chloride content sampling. The results of the analysis for SP4 were 4,320 mg/Kg at 7 feet and 112 mg/Kg at 8 feet. The results at SP5 were 256 mg/Kg at 3 feet and 80 mg/Kg at 4 feet. The results of the analysis are located in Appendix II of this report. The sample point locations can be viewed on the site diagram in Appendix I of this report.

### **3.0 CONCLUSION AND RECOMMENDATION**

On February 19, 2014, Cliff Brunson with BBC International met with Mike Bratcher of NMOCD to discuss the proposed remediation plan for this site. Mike Bratcher approved the plan during the meeting and the correspondence correlating this conversation can be located in Appendix IV of this report.

In accordance with the approved remediation plan, BBC personnel excavated 6 inches of impacted soil in the areas around SP1, SP2, SP3, and SP5. The area around SP4 and the area impacted off location were excavated by removing 4 feet of contaminated soil. The excavated areas were then backfilled with 1 foot of caliche and the remainder using top soil.

Thus, BBC International requests closure of the site since all remediation activities have been completed in accordance with the approved plan. Also, a final C-141 is located in Appendix III of this report.

# APPENDIX I

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## **Site Diagram**

*November 2013*

### **Oxy Spumoni State #001 (10/27/2013)**

Unit P, Section 16, Township 17 South, Range 31 East  
Eddy County, NM

GPS: N 32.82961° W 103.86910°

#### **Prepared for:**

COG Operating LLC  
Midland, Texas

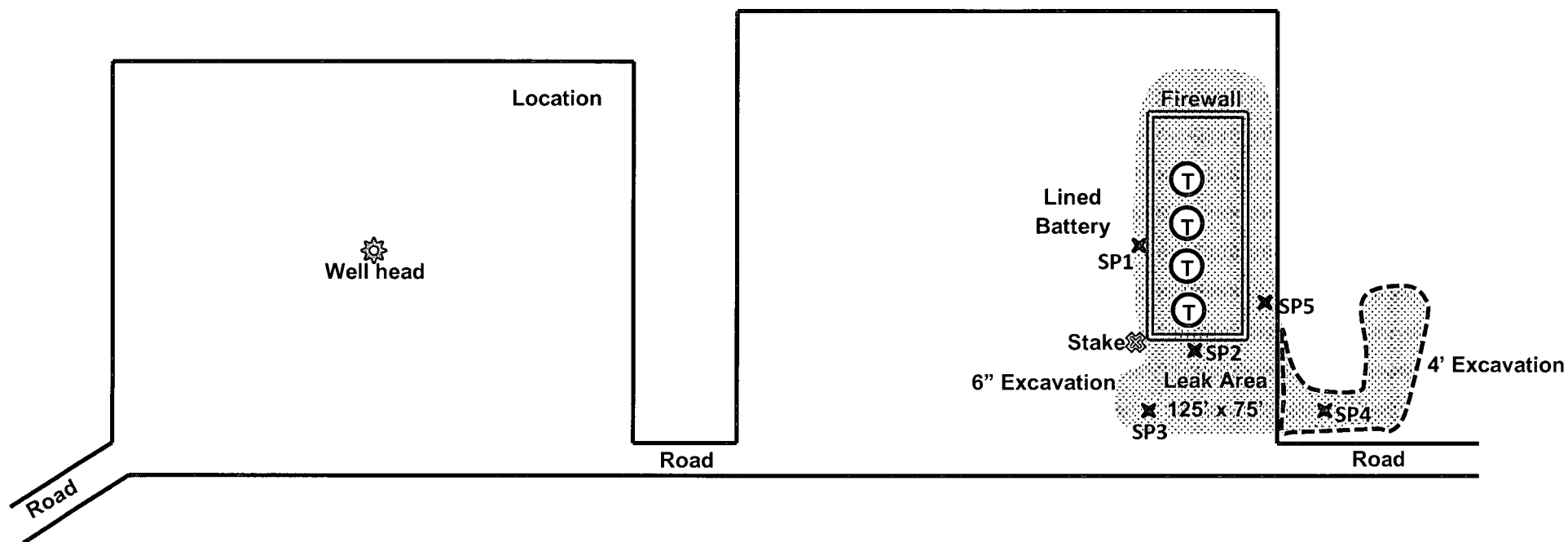
#### **Prepared by:**

**BBC International, Inc.**



COG

Oxy, Spumoni State #001



U/L P, Section 16, T17S, R31E  
900' FSL and 990' FEL  
Eddy County, NM  
N 32.82961° W 103.86910° at stake  
API# 30-015-33089

BBC International, Inc.

COG

Oxy Spumoni State #001

Date: 11/18/13

DRWG by: K. Purvis

NOT TO SCALE

File: COG 2013



# Groundwater Plot

## COG Oxy Spumoni State #001

County  
Eddy

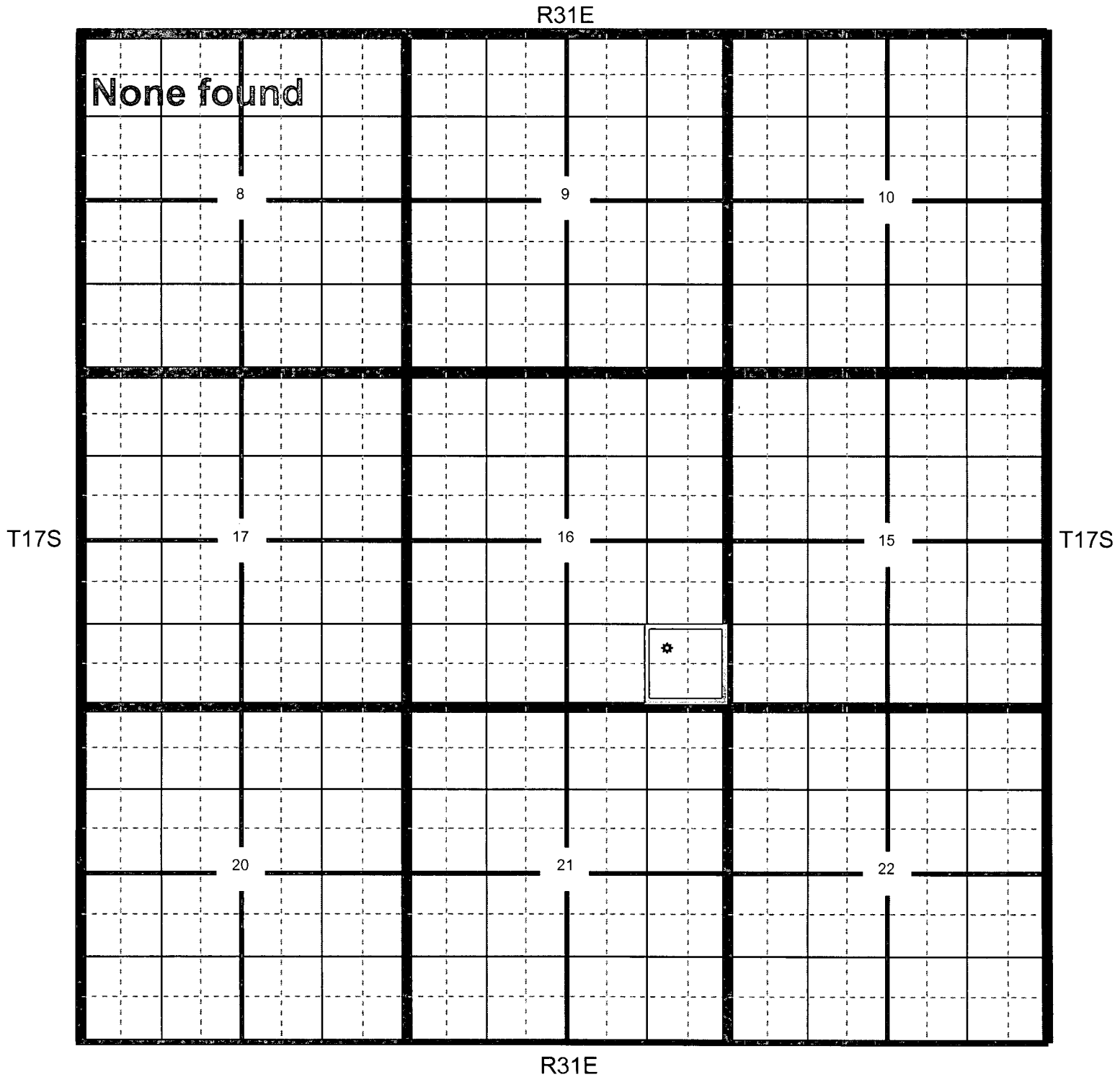
Unit Letter  
P

Section  
16

Township  
17S

Range  
31E

Trend Map 325'



★ Location

○ OCD

○ USGS

○ SEO

● All Databases

# COG Oxy Spumoni State #001

County Eddy      Unit Letter P      Section 16      Township 17S      Range 31E

Trend Map 325'

1

2

NW/NW <b>None found</b>	NE/NW	NW/NE	NE/NE
Unit Letter D	Unit Letter C	Unit Letter B	Unit Letter A
SW/NW	SE/NW	SW/NE	SE/NE
Unit Letter E	Unit Letter F	Unit Letter G	Unit Letter H
NW/SW	NE/SW	NW/SE	NE/SE
Unit Letter L	Unit Letter K	Unit Letter J	Unit Letter I
SW/SW	SE/SW	SW/SE	SE/SE ✱
Unit Letter M	Unit Letter N	Unit Letter O	Unit Letter P

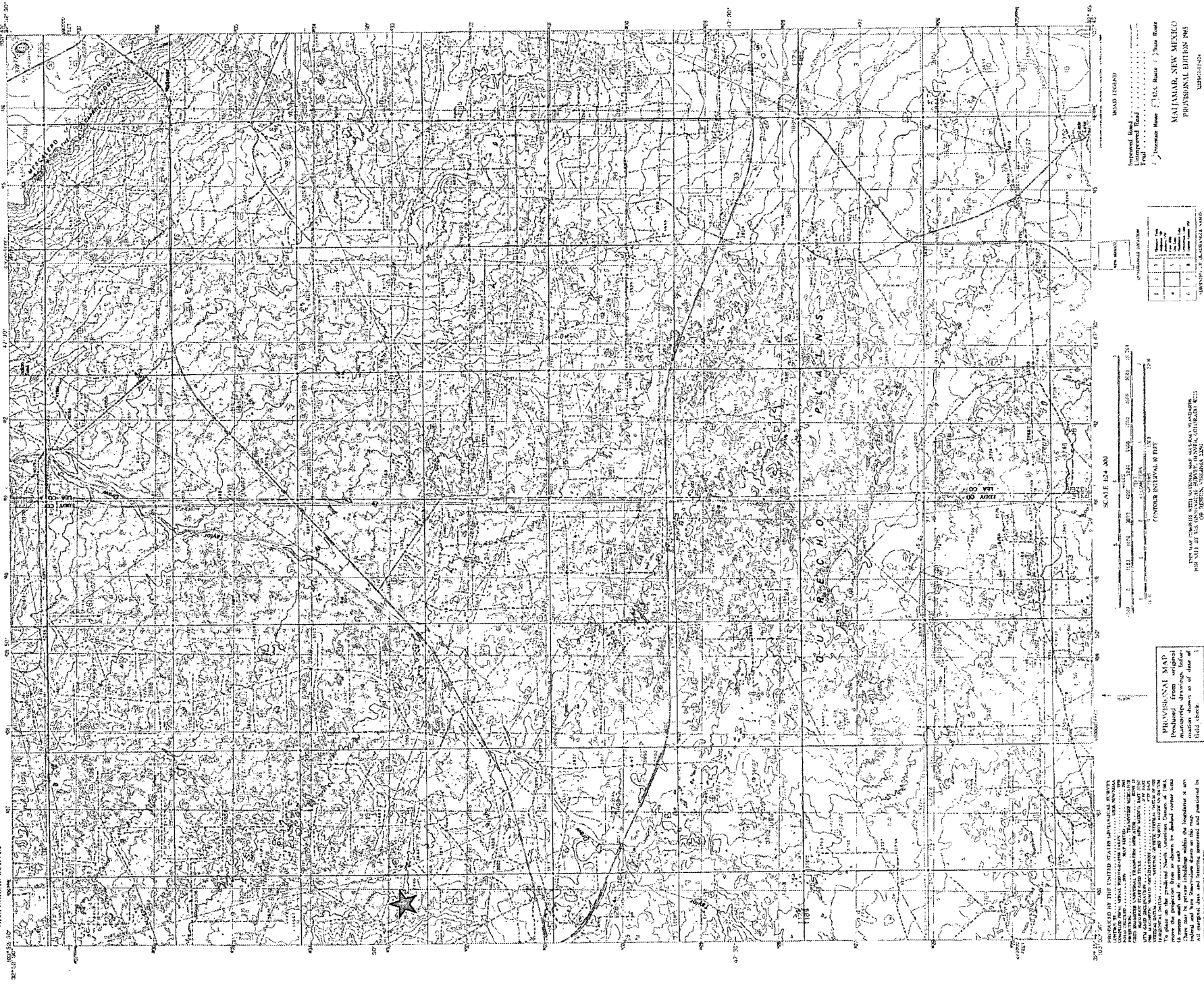
3

4



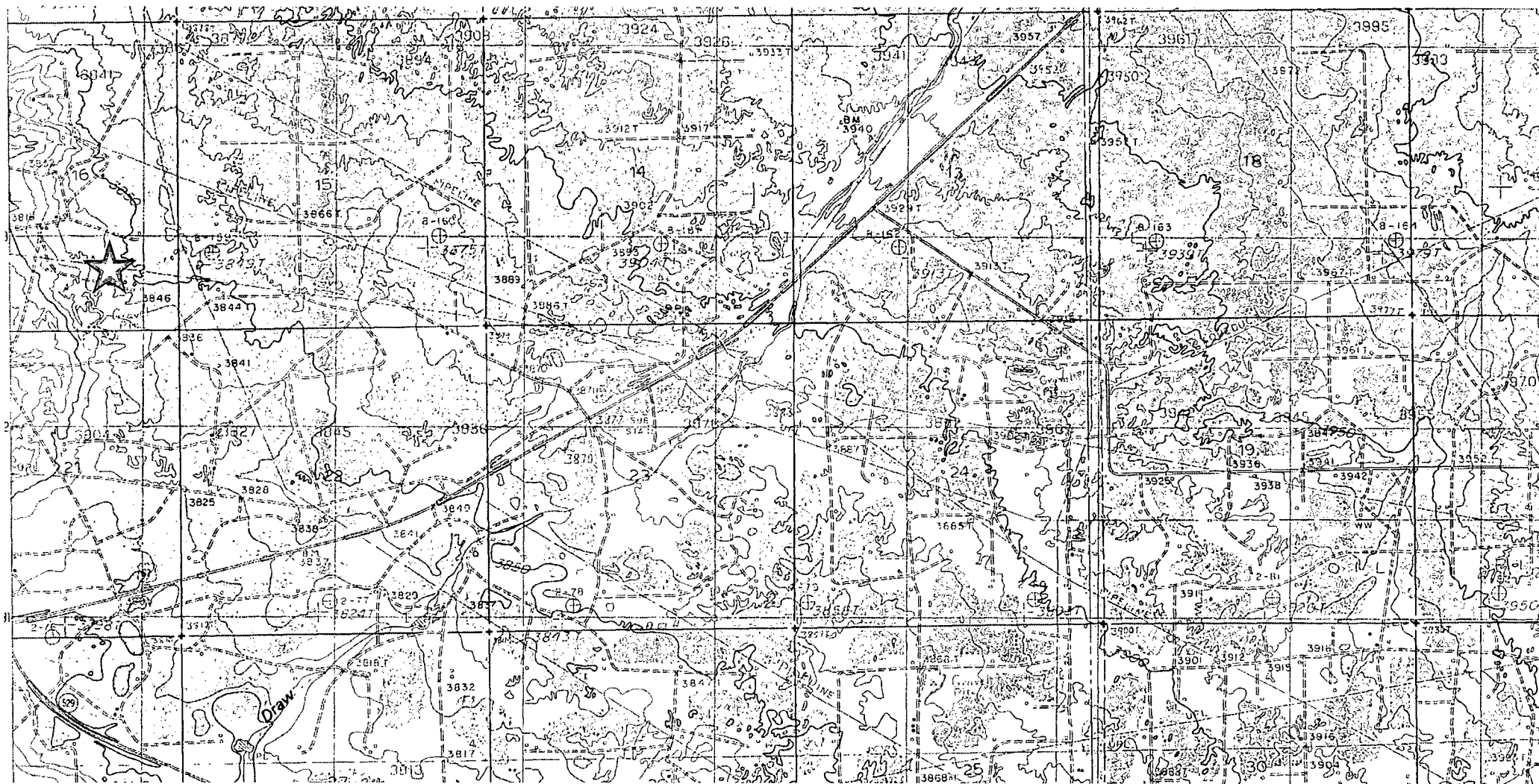
# Oxy Spumoni State #001

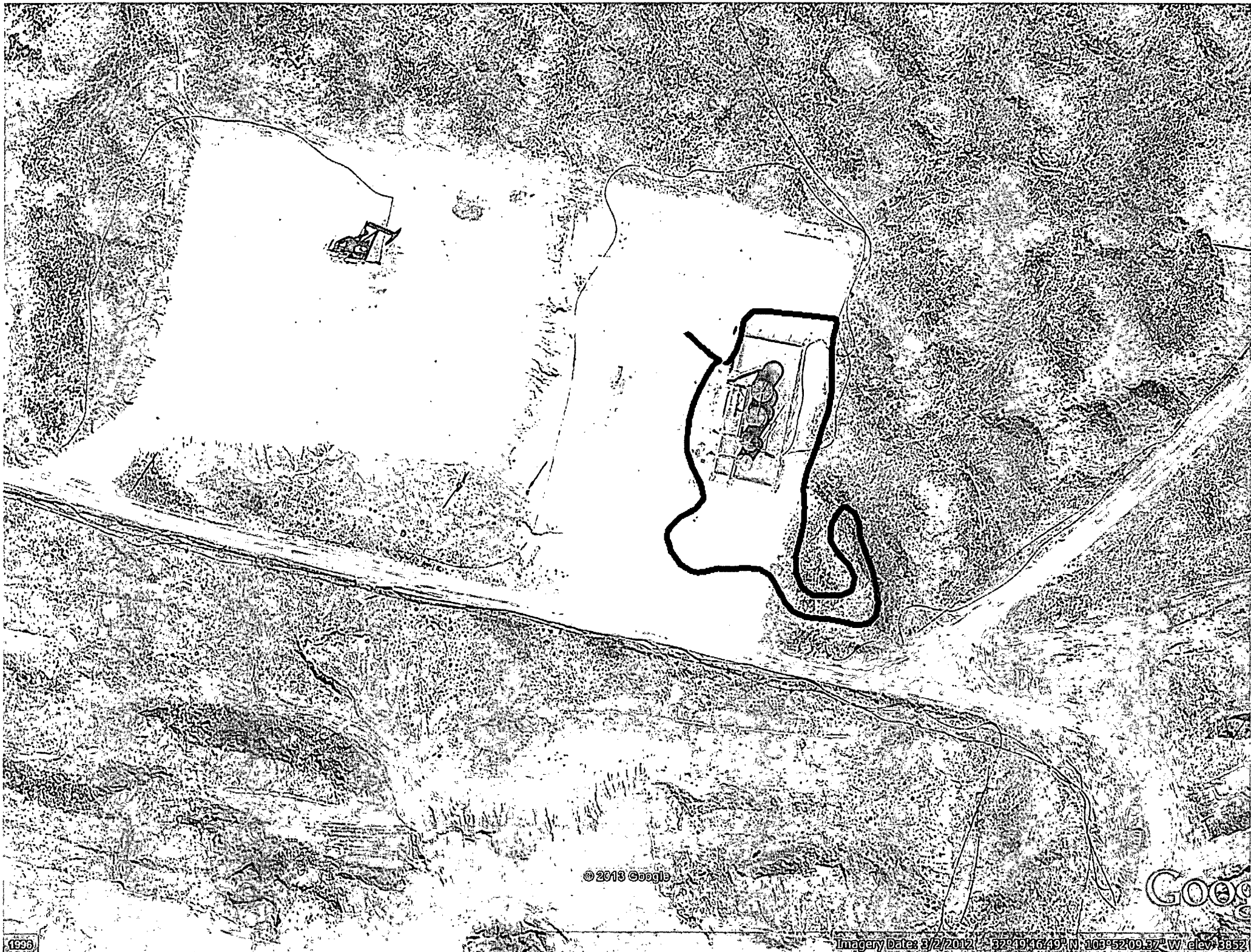
MAJAMAR QUADRANGLE  
NEW MEXICO  
7.5 MINUTE SERIES (TOPOGRAPHIC)



COG

# Oxy Spumoni State #001





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Google

1996

Imagery Date: 3/2/2012 37°49'16.49" N 108°52'09.37" W elev: 3352

# APPENDIX II

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## **Laboratory Analytical Results** *November 2013 and December 2013*

### **Oxy Spumoni State #001 (10/27/2013)**

Unit P, Section 16, Township 17 South, Range 31 East  
Eddy County, NM  
GPS: N 32.82961° W 103.86910°

**Prepared for:**  
COG Operating LLC  
Midland, Texas

**Prepared by:**  
BBC International, Inc.

**Laboratory Analytical Results Summary**  
**COG, Oxy Spumoni State #1**

		Sample	SP1 @ 1'	SP1 @ 2'
Analyte	Method	Date	11/21/13	11/21/13
			mg/Kg	mg/Kg
<b>Benzene</b>	BTEX 8021B		<0.050	n/a
<b>Toluene</b>	BTEX 8021B		<0.050	n/a
<b>Ethylbenzene</b>	BTEX 8021B		<0.050	n/a
<b>Total Xylenes</b>	BTEX 8021B		<0.150	n/a
<b>Total BTEX</b>	BTEX 8021B		<0.300	n/a
<b>Chloride</b>	SM4500Cl-B		<b>1070</b>	<b>96</b>
<b>GRO</b>	TPH 8015M		<10.0	n/a
<b>DRO</b>	TPH 8015M		<10.0	n/a

		Sample	SP2 @ 1'	SP2 @ 2'
Analyte	Method	Date	11/21/13	11/21/13
			mg/Kg	mg/Kg
<b>Benzene</b>	BTEX 8021B		<0.050	n/a
<b>Toluene</b>	BTEX 8021B		<0.050	n/a
<b>Ethylbenzene</b>	BTEX 8021B		<0.050	n/a
<b>Total Xylenes</b>	BTEX 8021B		<0.150	n/a
<b>Total BTEX</b>	BTEX 8021B		<0.300	n/a
<b>Chloride</b>	SM4500Cl-B		<b>240</b>	<b>128</b>
<b>GRO</b>	TPH 8015M		<10.0	n/a
<b>DRO</b>	TPH 8015M		<10.0	n/a

		Sample	SP3 @ 1'	SP3 @ 2'
Analyte	Method	Date	11/21/13	11/21/13
			mg/Kg	mg/Kg
<b>Benzene</b>	BTEX 8021B		<0.050	n/a
<b>Toluene</b>	BTEX 8021B		<0.050	n/a
<b>Ethylbenzene</b>	BTEX 8021B		<0.050	n/a
<b>Total Xylenes</b>	BTEX 8021B		<0.150	n/a
<b>Total BTEX</b>	BTEX 8021B		<0.300	n/a
<b>Chloride</b>	SM4500Cl-B		<b>752</b>	<b>32</b>
<b>GRO</b>	TPH 8015M		<10.0	n/a
<b>DRO</b>	TPH 8015M		<10.0	n/a

		Sample	SP4 @ 1'	SP4 @ 2'	SP4 @ 4'	SP4 @ 6'	SP4 @ 7'	SP4 @ 8'
Analyte	Method	Date	11/21/13	11/22/13	11/22/13	11/22/13	12/19/13	12/19/13
			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
<b>Benzene</b>	BTEX 8021B		<0.050	n/a	n/a	n/a	n/a	n/a
<b>Toluene</b>	BTEX 8021B		<0.050	n/a	n/a	n/a	n/a	n/a
<b>Ethylbenzene</b>	BTEX 8021B		<0.050	n/a	n/a	n/a	n/a	n/a
<b>Total Xylenes</b>	BTEX 8021B		<0.150	n/a	n/a	n/a	n/a	n/a
<b>Total BTEX</b>	BTEX 8021B		<0.300	n/a	n/a	n/a	n/a	n/a
<b>Chloride</b>	SM4500Cl-B		<b>4800</b>	<b>5040</b>	<b>19800</b>	<b>11600</b>	<b>4320</b>	<b>112</b>
<b>GRO</b>	TPH 8015M		<10.0	n/a	n/a	n/a	n/a	n/a
<b>DRO</b>	TPH 8015M		<10.0	n/a	n/a	n/a	n/a	n/a

		Sample	SP5 @ 1'	SP5 @ 2'	SP5 @ 3'	SP5 @ 4'
Analyte	Method	Date	11/22/13	11/22/13	12/19/13	12/19/13
			mg/Kg	mg/Kg	mg/Kg	mg/Kg
<b>Benzene</b>	BTEX 8021B		<0.050	n/a	n/a	n/a
<b>Toluene</b>	BTEX 8021B		<b>0.053</b>	n/a	n/a	n/a
<b>Ethylbenzene</b>	BTEX 8021B		<0.050	n/a	n/a	n/a
<b>Total Xylenes</b>	BTEX 8021B		<0.150	n/a	n/a	n/a
<b>Total BTEX</b>	BTEX 8021B		<0.300	n/a	n/a	n/a
<b>Chloride</b>	SM4500Cl-B		<b>32</b>	<b>576</b>	<b>256</b>	<b>80</b>
<b>GRO</b>	TPH 8015M		<10.0	n/a	n/a	n/a
<b>DRO</b>	TPH 8015M		<10.0	n/a	n/a	n/a



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

---

December 06, 2013

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: OXY SPUMONI

Enclosed are the results of analyses for samples received by the laboratory on 11/26/13 9:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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](http://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

**Analytical Results For:**

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

 Received: 11/26/2013  
 Reported: 12/06/2013  
 Project Name: OXY SPUMONI  
 Project Number: NONE GIVEN  
 Project Location: LOCO HILLS, NM

 Sampling Date: 11/21/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Amanda Ponce

**Sample ID: SP 1 @ 1 FT (H302887-01)**

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/05/2013	ND	2.37	119	2.00	0.0493	
Toluene*	<0.050	0.050	12/05/2013	ND	2.38	119	2.00	0.812	
Ethylbenzene*	<0.050	0.050	12/05/2013	ND	2.36	118	2.00	0.924	
Total Xylenes*	<0.150	0.150	12/05/2013	ND	6.91	115	6.00	0.971	
Total BTEX	<0.300	0.300	12/05/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 124 % 89.4-126

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1070	16.0	12/04/2013	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: ck					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/05/2013	ND	188	93.8	200	1.52	
DRO >C10-C28	<10.0	10.0	12/05/2013	ND	184	92.1	200	1.31	

Surrogate: 1-Chlorooctane 108 % 65.2-140

Surrogate: 1-Chlorooctadecane 109 % 63.6-154

**Sample ID: SP 1 @ 2 FT (H302887-02)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	12/04/2013	ND	400	100	400	3.92	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

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

 Received: 11/26/2013  
 Reported: 12/06/2013  
 Project Name: OXY SPUMONI  
 Project Number: NONE GIVEN  
 Project Location: LOCO HILLS, NM

 Sampling Date: 11/21/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Amanda Ponce

**Sample ID: SP 2 @ 1 FT (H302887-03)**

BTEx 8021B			mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/02/2013	ND	2.19	110	2.00	0.949		
Toluene*	<0.050	0.050	12/02/2013	ND	2.17	108	2.00	0.646		
Ethylbenzene*	<0.050	0.050	12/02/2013	ND	2.15	107	2.00	0.0399		
Total Xylenes*	<0.150	0.150	12/02/2013	ND	6.23	104	6.00	0.167		
Total BTEx	<0.300	0.300	12/02/2013	ND						

Surrogate: 4-Bromofluorobenzene (PIC) 117 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	12/04/2013	ND	400	100	400	3.92	

TPH 8015M			mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	11/27/2013	ND	205	102	200	10.5		
DRO >C10-C28	<10.0	10.0	11/27/2013	ND	202	101	200	13.7		

Surrogate: 1-Chlorooctane 102 % 65.2-140

Surrogate: 1-Chlorooctadecane 103 % 63.6-154


**Sample ID: SP 2 @ 2 FT (H302887-04)**

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	12/04/2013	ND	400	100	400	3.92		

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

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

Received: 11/26/2013  
Reported: 12/06/2013  
Project Name: OXY SPUMONI  
Project Number: NONE GIVEN  
Project Location: LOCO HILLS, NM

Sampling Date: 11/21/2013  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Amanda Ponce

**Sample ID: SP 3 @ 1 FT (H302887-05)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/02/2013	ND	2.19	110	2.00	0.949		
Toluene*	<0.050	0.050	12/02/2013	ND	2.17	108	2.00	0.646		
Ethylbenzene*	<0.050	0.050	12/02/2013	ND	2.15	107	2.00	0.0399		
Total Xylenes*	<0.150	0.150	12/02/2013	ND	6.23	104	6.00	0.167		
Total BTEx	<0.300	0.300	12/02/2013	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 117 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	752	16.0	12/04/2013	ND	400	100	400	3.92	
TPH 8015M		mg/kg		Analyzed By: MS					

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/27/2013	ND	205	102	200	10.5	
DRO >C10-C28	<10.0	10.0	11/27/2013	ND	202	101	200	13.7	

Surrogate: 1-Chlorooctane 94.1 % 65.2-140

Surrogate: 1-Chlorooctadecane 94.1 % 63.6-154


**Sample ID: SP 3 @ 2 FT (H302887-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	12/04/2013	ND	400	100	400	3.92		

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 11/26/2013  
Reported: 12/06/2013  
Project Name: OXY SPUMONI  
Project Number: NONE GIVEN  
Project Location: LOCO HILLS, NM

Sampling Date: 11/21/2013  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Amanda Ponce

**Sample ID: SP 4 @ 1 FT (H302887-07)**

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/02/2013	ND	2.19	110	2.00	0.949	
Toluene*	<0.050	0.050	12/02/2013	ND	2.17	108	2.00	0.646	
Ethylbenzene*	<0.050	0.050	12/02/2013	ND	2.15	107	2.00	0.0399	
Total Xylenes*	<0.150	0.150	12/02/2013	ND	6.23	104	6.00	0.167	
Total BTEX	<0.300	0.300	12/02/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 116 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4800	16.0	12/04/2013	ND	400	100	400	3.92	
TPH 8015M	mg/kg		Analyzed By: MS						

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/27/2013	ND	205	102	200	10.5	
DRO >C10-C28	<10.0	10.0	11/27/2013	ND	202	101	200	13.7	

Surrogate: 1-Chlorooctane 106 % 65.2-140

Surrogate: 1-Chlorooctadecane 106 % 63.6-154

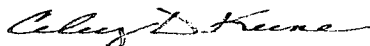
**Sample ID: SP 4 @ 2 FT (H302887-08)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	5040	16.0	12/04/2013	ND	400	100	400	3.92		

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Celest D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 11/26/2013  
Reported: 12/06/2013  
Project Name: OXY SPUMONI  
Project Number: NONE GIVEN  
Project Location: LOCO HILLS, NM

Sampling Date: 11/22/2013  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Amanda Ponce

**Sample ID: SP 4 @ 4 FT (H302887-09)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	19800	16.0	12/04/2013	ND	400	100	400	3.92	

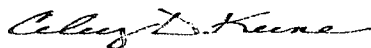
**Sample ID: SP 4 @ 6 FT (H302887-10)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	11600	16.0	12/04/2013	ND	400	100	400	3.92	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 11/26/2013  
Reported: 12/06/2013  
Project Name: OXY SPUMONI  
Project Number: NONE GIVEN  
Project Location: LOCO HILLS, NM

Sampling Date: 11/22/2013  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Amanda Ponce

**Sample ID: SP 5 @ 1 FT (H302887-11)**

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/02/2013	ND	2.19	110	2.00	0.949	
Toluene*	0.053	0.050	12/02/2013	ND	2.17	108	2.00	0.646	
Ethylbenzene*	<0.050	0.050	12/02/2013	ND	2.15	107	2.00	0.0399	
Total Xylenes*	<0.150	0.150	12/02/2013	ND	6.23	104	6.00	0.167	
Total BTEX	<0.300	0.300	12/02/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID) 118 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	12/04/2013	ND	400	100	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/27/2013	ND	205	102	200	10.5	
DRO >C10-C28	<10.0	10.0	11/27/2013	ND	202	101	200	13.7	

Surrogate: 1-Chlorooctane 107 % 65.2-140

Surrogate: 1-Chlorooctadecane 108 % 63.6-154


**Sample ID: SP 5 @ 2 FT (H302887-12)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	576	16.0	12/04/2013	ND	416	104	400	3.92		

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

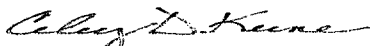
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received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

---

Cardinal Laboratories

\*=Accredited Analyte

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Celest D. Keene, Lab Director/Quality Manager



## Page 9 of 10

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## Page 10 of 10

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

January 03, 2014

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: SPUMONI

Enclosed are the results of analyses for samples received by the laboratory on 12/23/13 16:59.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

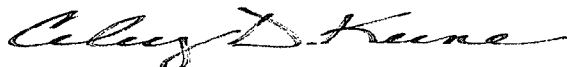
Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager



**Analytical Results For:**

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

Received: 12/23/2013  
Reported: 01/03/2014  
Project Name: SPUMONI  
Project Number: NONE GIVEN  
Project Location: LOCO HILLS, NM

Sampling Date: 12/19/2013  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: SP 4 @ 7 FT (H303122-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4320	16.0	01/02/2014	ND	400	100	400	11.3	

**Sample ID: SP 4 @ 8 FT (H303122-02)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	01/02/2014	ND	400	100	400	11.3	

**Sample ID: SP 5 @ 3 FT (H303122-03)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	256	16.0	01/02/2014	ND	400	100	400	11.3	


**Sample ID: SP 5 @ 4 FT (H303122-04)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	01/02/2014	ND	400	100	400	11.3	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

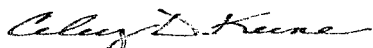
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received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

---

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]

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

Relinquished By: 		Date: 12-13-13 Time: 4:59		Received By: Jodi Benson		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:	
Relinquished By:		Date:		Received By:		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Fax #:	
		Time:				REMARKS:	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:				Sample Condition Cool Intact 4.6g <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No		CHECKED BY: 	

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

#54

# APPENDIX III

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**C-141**

*November 2013 and June 2014*

## **Oxy Spumoni State #001 (10/27/2013)**

Unit P, Section 16, Township 17 South, Range 31 East  
Eddy County, NM  
GPS: N 32.82961° W 103.86910°

**Prepared for:**  
COG Operating LLC  
Midland, Texas

**Prepared by:**  
BBC International, Inc.

**NM OIL CONSERVATION**  
ARTESIA DISTRICT

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, 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 **JUN 06 2014**  
Energy Minerals and Natural Resources  
Oil Conservation Division **RECEIVED**  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

**Release Notification and Corrective Action**

**OPERATOR**

☒ Initial Report    ☐ Final Report

Name of Company	COG OPERATING LLC	Contact	Robert McNeill
Address	600 West Illinois Avenue, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Oxy Spumoni State #001	Facility Type	Tank Battery
Surface Owner	State	Mineral Owner	
		Lease No. (API#) 30-015-33089	

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	16	17S	31E					Eddy

Latitude 32.82977      Longitude 103.86926

**NATURE OF RELEASE**

Type of Release	Oil and produced water	Volume of Release	1bbl of oil 510bbls of produced water	Volume Recovered	1bbl of oil 459bbls of produced water
Source of Release	Oil tank	Date and Hour of Occurrence	10-27-2013	Date and Hour of Discovery	10-27-2013 12:30pm
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher - NMOCD			
By Whom?	Michelle Mullins	Date and Hour	10-28-2013 07:42am		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

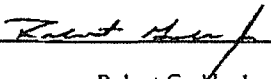
Water leg plugged upon the gun barrel, causing all the water from the gun barrel to go to the 210bbl oil tank. No alarm on oil tank. Clean out the plugged pipe and monitor.

Describe Area Affected and Cleanup Action Taken.\*

Initially 1bbl of oil and 510bbls of produced water were released due to the water leg on the gun barrel was plugged. We were able to recover 1bbls of oil and 459bbls produced water with vacuum trucks. The majority of the spill was contained in the lined facility. A 50X75 area adjacent to the location. All free fluid has been recovered. BBC will sample the spill site area to delineate any possible contamination from the release and we will present a work plan to the NMOCD for approval prior to any significant remediation work.

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

**OIL CONSERVATION DIVISION**

Signature:			
Printed Name:	Robert Grubbs Jr.		
Title:	Senior Environmental Coordinator	Approval Date:	Expiration Date:
E-mail Address:	rgrubbs@concho.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date:	11-7-2013	Phone:	432-661-6601

\* Attach Additional Sheets If Necessary

**NM OIL CONSERVATION**  
ARTESIA DISTRICT

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
100 Rio Brazos Road, Aztec, NM 87410  
District IV  
20 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

JUN 06 2014

**RECEIVED**

Form C-141  
Revised August 8, 2011

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

**Release Notification and Corrective Action**

**OPERATOR**

☐ Initial Report    ☒ Final Report

Name of Company	COG OPERATING LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Oxy Spumoni State #001	Facility Type	Tank Battery

Surface Owner	State	Mineral Owner	API No. 30-015-33089 (nearest well)
---------------	-------	---------------	-------------------------------------

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	16	17S	31E					Eddy

Latitude N 32.82977°    Longitude W 103.86926°

**NATURE OF RELEASE**

Type of Release	Oil and Produced water	Volume of Release	1 bbl of oil, 510 bbls of produced water	Volume Recovered	1 bbl of oil, 459 bbls of produced water
Source of Release	Oil Tank	Date and Hour of Occurrence	10/27/2013	Date and Hour of Discovery	10/27/2013 @ 12:30 pm
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher-OCD			
By Whom?	Michelle Mullins	Date and Hour	10/28/2013 @ 7:42 am		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*


Water leg plugged upon the gun barrel, causing all the water from the gun barrel to go to the 210 bbl oil tank. No alarm on oil tank. Clean out the plugged pipe and monitor.

Describe Area Affected and Cleanup Action Taken.\*

Initially 1 bbl of oil and 510 bbls of produced water were released due to the water leg on the gun barrel was plugged. We were able to recover 1 bbl of oil and 459 bbls of produced water with vacuum trucks. The majority of the spill was contained in the lined facility. A 50' x 75' area adjacent to the location. All free fluid has been recovered. Remediation was completed by BBC International Inc. in accordance with the remediation plan approved by Mike Bratcher of NMOCD in a meeting on 02/19/2014.

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.

**OIL CONSERVATION DIVISION**

Signature: 	Approved by Environmental Specialist:		
Printed Name: Robert Grubbs	Approval Date:	Expiration Date:	
Title: Senior Environmental Coordinator	Conditions of Approval:		Attached <input type="checkbox"/>
E-mail Address: rgrubbs@concho.com			
Date: 6-4-14	Phone: (432) 661-6601		

\* Attach Additional Sheets If Necessary

# APPENDIX IV

---

## Correspondence

*February 2014*

### **Oxy Spumoni State #001 (10/27/2013)**

Unit P, Section 16, Township 17 South, Range 31 East  
Eddy County, NM  
GPS: N 32.82961° W 103.86910°

**Prepared for:**  
COG Operating LLC  
Midland, Texas

**Prepared by:**  
BBC International, Inc.

## Kathy Purvis

---

**From:** Cliff P. Brunson <cbrunson@bbcinternational.com>  
**Sent:** Tuesday, February 25, 2014 4:40 PM  
**To:** Mike Bratcher  
**Cc:** Robert Grubbs; Michelle Mullins; Ken Swinney; Jennifer Gilkey; Kathy Purvis  
**Subject:** Concho-Oxy Spumoni State #001-Remediation Plan  
**Attachments:** Remediation Plan Report, Oxy Spumoni St #1.pdf

Mike,

This e-mail is to confirm our conversation on February 19, 2014 about the remediation plan for the above referenced site. I have attached the materials that we used in our discussion. As discussed, Concho will excavate to a depth of 6 inches in the area covering SP1, SP2, SP3, and SP5 as depicted on the attached site diagram. The area around SP4 off the location will be excavated to a depth of 4 feet then backfilled with one foot of compacted caliche and the remainder will be top soil.

If you would please e-mail your concurrence with this remediation plan, it would be greatly appreciated.

Thanks, Cliff

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