

Office  
District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Ave., Artesia, NM 88210  
District III  
1000 Rio Brazos Rd., Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM  
87505

Energy, Minerals and Natural Resources

May 27, 2004

OIL CONSERVATION DIVISION

30 South St. Francis Dr.  
Santa Fe, NM 87505

WELL API NO.

30-015-33746

5. Indicate Type of Lease **FEDERAL**  
STATE ☐ FEE ☐

6. State Oil & Gas Lease No.

7. Lease Name or Unit Agreement Name

**REINDEER FEDERAL**

8. Well Number **1**

9. OGRID Number  
**229137**

10. Pool name or Wildcat  
**CROWS FLAT; MORROW**

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well: Oil Well ☐ Gas Well ☒ Other

2. Name of Operator  
**COG Operating LLC**

3. Address of Operator  
**550 W. Texas Ave., Suite 1300 Midland, TX 79701**

4. Well Location

Unit Letter **N** : **660'** feet from the **South** line and **1980'** feet from the **West** line  
Section **21** Township **16S** Range **32E 28E** NMPM County **EDDY**

11. Elevation (Show whether DR, RKB, RT, GR, etc.)  
**3589' GR**

Pit or Below-grade Tank Application ☐ or Closure ☒

Pit type **DRILLING** Depth to Groundwater **100'** Distance from nearest fresh water well **1000'** Distance from nearest surface water **1000'**

Pit Liner Thickness: **12 mil** Below-Grade Tank: Volume **bbls;** Construction Material

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐  
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐  
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐  
COMMENCE DRILLING OPNS. ☐ P AND A ☐  
CASING/CEMENT JOB ☐

OTHER: **Revised pit closure-to show trench depth** ☒

OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Highlander Environmental drilled a test water well at Reindeer Federal #1 on April 26, 2007 to a Total Depth of 80 feet.

Highlander measured the water level at 61 feet below surface on April 30, 2007.

Mike Bratcher with Artesia NMOCDD requested that

COG Operating LLC follow the pit closure procedure guidelines below:

1. Remove fluids from pit.
2. A 10' deep trench pit will be constructed next to all sides of the existing reserve pit and lined with a 12 mil liner. The contents will be encapsulated in this pit and the liner will be folded over the mud and cuttings.
3. Cover liner with 20 mil liner with excess of 3' on all sides as per option IV.B.3.(b) of the Pit and Below-Grade Tank Guidelines.
4. Cover with a minimum 3' of native soil.
5. Contour pit to prevent erosion and ponding of rainwater.

Notify OCD 24 hours prior to beginning pit closure.

*Pit was cleared to close by Mike Bratcher 7-11-07, as per Mike Bratcher 30' of material was removed from the south-east corner and blended with fresh top soil from when spread evenly on bottom of reserve pit*

I hereby certify  
grade tank has

Samples are to be obtained from  
pit area and analysis submitted to  
NMOCDD prior to back-filling

I certify to the best of my knowledge and belief. I further certify that any pit or below-grade tank complies with the guidelines ☒, a general permit ☐ or an (attached) alternative OCD-approved plan ☐.

SIGNATURE Phyllis Edwards TITLE Regulatory Analyst DATE 5-1-07

Type or print name Phyllis Edwards E-mail address: pedwards@conchoresources.com Telephone No. 432-685-4340  
For State Use Only

APPROVED BY: Mike Bratcher TITLE Field Supervisor DATE MAY 07 2007  
Conditions of Approval (if any):

## Summary Report

Gary Miller  
Highlander Environmental Services  
1910 N. Big Spring Street  
Midland, TX, 79705

Report Date: July 16, 2007

Work Order: 7071216



Project Location: Eddy County, NM  
Project Name: COG Operating/Reindeer Federal #1  
Project Number: 3044

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
129709	North West 5.0' BPB	soil	2007-07-10	00:00	2007-07-11
129710	North East 5.0' BPB	soil	2007-07-10	00:00	2007-07-11
129711	South West 5.0' BPB	soil	2007-07-10	00:00	2007-07-11
129712	South East 10.0' BPB	soil	2007-07-10	00:00	2007-07-11
129713	Center 2.0' BPB	soil	2007-07-10	00:00	2007-07-11
129714	North 2.0' BPB	soil	2007-07-10	00:00	2007-07-11
129715	South 5.0' BPB	soil	2007-07-10	00:00	2007-07-11

**Sample: 129709 - North West 5.0' BPB**

Param	Flag	Result	Units	RL
Chloride		<50.0	mg/Kg	2.00

**Sample: 129710 - North East 5.0' BPB**

Param	Flag	Result	Units	RL
Chloride		<50.0	mg/Kg	2.00

**Sample: 129711 - South West 5.0' BPB**

Param	Flag	Result	Units	RL
Chloride		<50.0	mg/Kg	2.00

**Sample: 129712 - South East 10.0' BPB**

Param	Flag	Result	Units	RL
Chloride		<50.0	mg/Kg	2.00

**Sample: 129713 - Center 2.0' BPB**

Param	Flag	Result	Units	RL
Chloride		<50.0	mg/Kg	2.00

**Sample: 129714 - North 2.0' BPB**

Param	Flag	Result	Units	RL
Chloride		<50.0	mg/Kg	2.00

**Sample: 129715 - South 5.0' BPB**

Param	Flag	Result	Units	RL
Chloride		<50.0	mg/Kg	2.00

Highlander Environmental Corp.  
Pit Sample Location Plat

Pit wall in feet 110'

Pit wall in feet 130'

x South East      x South West

x Center

Depth of pit in feet 7'

x North East      x North West

South

North

< 20' >

• Wellhead

Well Pad

x \_\_\_\_\_ Indicates Sample Location  
(Name by quarter i.e. NW, NE etc)

↓  
Draw in North Arrow

Client: COG Operating LLC

Well Name: REINDEER Federal #1

API# 30-015-33746

# Highlander Environmental Corp. Pit Closure Sampling Report

Job Number: 3044  
 Client: LOG Operating LLC  
 Well Name: REINDEER Federal #1  
 API#: 30-015-33746  
 Depth of Pit: 7.0'  
 Location and Depth of Background sample:

All pit sample depths are below pit bottom (BPB)

Sample Location	Depth (BPB)	Field Chloride Results (ppm)	Lab Chloride Results (ppm)
North West	2.0'	1,500	
	5.0'	250	<50.0
Center	2.0'	220	<50.0
North East	2.0'	360	
	5.0'	240	<50.0
South West	2.0'	280	
	5.0'	240	<50.0
South East	2.0'	3,120	
	5.0'	400	
	10.0'	220	<50.0
North	2.0'	240	<50.0
South	2.0'	260	
	5.0'	220	<50.0

DNR- Did not run at lab.  
 BGS- Below Ground Surface  
 BPB- Below Pit Bottom

## Summary Report

Gary Miller  
Highlander Environmental Services  
1910 N. Big Spring Street  
Midland, TX, 79705

Report Date: July 16, 2007

Work Order: 7071216



Project Location: Eddy County, NM  
Project Name: COG Operating/Reindeer Federal #1  
Project Number: 3044

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
129709	North West 5.0' BPB	soil	2007-07-10	00:00	2007-07-11
129710	North East 5.0' BPB	soil	2007-07-10	00:00	2007-07-11
129711	South West 5.0' BPB	soil	2007-07-10	00:00	2007-07-11
129712	South East 10.0' BPB	soil	2007-07-10	00:00	2007-07-11
129713	Center 2.0' BPB	soil	2007-07-10	00:00	2007-07-11
129714	North 2.0' BPB	soil	2007-07-10	00:00	2007-07-11
129715	South 5.0' BPB	soil	2007-07-10	00:00	2007-07-11

### Sample: 129709 - North West 5.0' BPB

Param	Flag	Result	Units	RL
Chloride		<50.0	mg/Kg	2.00

### Sample: 129710 - North East 5.0' BPB

Param	Flag	Result	Units	RL
Chloride		<50.0	mg/Kg	2.00

### Sample: 129711 - South West 5.0' BPB

Param	Flag	Result	Units	RL
Chloride		<50.0	mg/Kg	2.00

### Sample: 129712 - South East 10.0' BPB

Param	Flag	Result	Units	RL
Chloride		<50.0	mg/Kg	2.00

**Sample: 129713 - Center 2.0' BPB**

Param	Flag	Result	Units	RL
Chloride		<50.0	mg/Kg	2.00

**Sample: 129714 - North 2.0' BPB**

Param	Flag	Result	Units	RL
Chloride		<50.0	mg/Kg	2.00

**Sample: 129715 - South 5.0' BPB**

Param	Flag	Result	Units	RL
Chloride		<50.0	mg/Kg	2.00



3000 Alameda Avenue, Suite 9 Midland, Texas 79704 800•374•1146 806•794•1296 FAX 806•794•1297  
 3000 S. Santa Fe Street, Suite 1 Midland, Texas 79702 806•698•5043 806•685•5473 FAX 806•685•1917  
 5002 East 6 Street, Suite A Midland, Texas 79703 409•689•6306 FAX 409•681•6117  
 5015 North Parkway, Suite 100 Fort Worth, Texas 76137 817•281•5069  
 e-mail: info@traceanalysis.com

## Analytical and Quality Control Report

Gary Miller  
 Highlander Environmental Services  
 1910 N. Big Spring Street  
 Midland, TX, 79705

Report Date: July 17, 2007

Work Order: 7071216



Project Location: Eddy County, NM  
 Project Name: COG Operating/Reindeer Federal #1  
 Project Number: 3044

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
129709	North West 5.0' BPB	soil	2007-07-10	00:00	2007-07-11
129710	North East 5.0' BPB	soil	2007-07-10	00:00	2007-07-11
129711	South West 5.0' BPB	soil	2007-07-10	00:00	2007-07-11
129712	South East 10.0' BPB	soil	2007-07-10	00:00	2007-07-11
129713	Center 2.0' BPB	soil	2007-07-10	00:00	2007-07-11
129714	North 2.0' BPB	soil	2007-07-10	00:00	2007-07-11
129715	South 5.0' BPB	soil	2007-07-10	00:00	2007-07-11

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 4 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

### Standard Flags

**B** - The sample contains less than ten times the concentration found in the method blank



## Analytical Report

### Sample: 129709 - North West 5.0' BPB

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	39105	Date Analyzed:	2007-07-16	Analyzed By:	AR
Prep Batch:	33847	Sample Preparation:		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<50.0	mg/Kg	25	2.00

### Sample: 129710 - North East 5.0' BPB

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	39105	Date Analyzed:	2007-07-16	Analyzed By:	AR
Prep Batch:	33847	Sample Preparation:		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<50.0	mg/Kg	25	2.00

### Sample: 129711 - South West 5.0' BPB

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	39105	Date Analyzed:	2007-07-16	Analyzed By:	AR
Prep Batch:	33847	Sample Preparation:		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<50.0	mg/Kg	25	2.00

### Sample: 129712 - South East 10.0' BPB

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	39105	Date Analyzed:	2007-07-16	Analyzed By:	AR
Prep Batch:	33847	Sample Preparation:		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<50.0	mg/Kg	25	2.00

### Sample: 129713 - Center 2.0' BPB

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	39105	Date Analyzed:	2007-07-16	Analyzed By:	AR
Prep Batch:	33847	Sample Preparation:		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<50.0	mg/Kg	25	2.00

**Sample: 129714 - North 2.0' BPB**

Analysis: Chloride (Titration)      Analytical Method: SM 4500-Cl B      Prep Method: N/A  
QC Batch: 39105      Date Analyzed: 2007-07-16      Analyzed By: AR  
Prep Batch: 33847      Sample Preparation:      Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<50.0	mg/Kg	25	2.00

**Sample: 129715 - South 5.0' BPB**

Analysis: Chloride (Titration)      Analytical Method: SM 4500-Cl B      Prep Method: N/A  
QC Batch: 39105      Date Analyzed: 2007-07-16      Analyzed By: AR  
Prep Batch: 33847      Sample Preparation:      Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<50.0	mg/Kg	25	2.00

**Method Blank (1)      QC Batch: 39105**

QC Batch: 39105      Date Analyzed: 2007-07-16      Analyzed By: AR  
Prep Batch: 33847      QC Preparation: 2007-07-16      Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<0.500	mg/Kg	2

**Laboratory Control Spike (LCS-1)**

QC Batch: 39105      Date Analyzed: 2007-07-16      Analyzed By: AR  
Prep Batch: 33847      QC Preparation: 2007-07-16      Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	101	mg/Kg	1	100	<0.500	101	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<0.500	102	85 - 115	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 129936

QC Batch: 39105  
Prep Batch: 33847

Date Analyzed: 2007-07-16  
QC Preparation: 2007-07-16

Analyzed By: AR  
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	6130	mg/Kg	25	2500	3440.83	108	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	6150	mg/Kg	25	2500	3440.83	108	85 - 115	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Standard (ICV-1)**

QC Batch: 39105

Date Analyzed: 2007-07-16

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	97.4	97	85 - 115	2007-07-16

**Standard (CCV-1)**

QC Batch: 39105

Date Analyzed: 2007-07-16

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	103	103	85 - 115	2007-07-16

Work Order # 7071216

[illegible]

Please Fill out all copies - Laboratory retains yellow copy - Return original copy to Highlander Environmental Corp. - Project Manager retains pink copy - Accounting receives Gold copy.

obbs, NM 88240

ave., Artesia, NM 88210

razos Rd., Aztec, NM 87410

St. Francis Dr., Santa Fe, NM

## OIL CONSERVATION DIVISION

30 South St. Francis Dr.  
Santa Fe, NM 87505

WELL API NO.

30-015-33746

5. Indicate Type of Lease **FEDERAL**  
STATE ☐ FEE ☐

6. State Oil &amp; Gas Lease No.

7. Lease Name or Unit Agreement Name

**REINDEER FEDERAL**8. Well Number **1**

9. OGRID Number

**229137**

10. Pool name or Wildcat

**CROWS FLAT; MORROW**SUNDRY NOTICES AND REPORTS ON WELLS  
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)1. Type of Well: Oil Well ☐ Gas Well ☒ Other

2. Name of Operator

**COG Operating LLC**

3. Address of Operator

**550 W. Texas Ave., Suite 1300****Midland, TX 79701**

4. Well Location

Unit Letter **N** : **660'** feet from the **South** line and **1980'** feet from the **West** lineSection **21** Township **16S** Range **22E 28E** NMPM County **EDDY**

11. Elevation (Show whether DR, RKB, RT, GR, etc.)

**3589' GR**Fit or Below-grade Tank Application ☐ or Closure ☒Pit type **DRILLING** Depth to Groundwater **100'** Distance from nearest fresh water well **1000'** Distance from nearest surface water **1000'**Pit Liner Thickness: **12 mil** Below-Grade Tank: Volume **bbbls** Construction Material

## 12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

## NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐  
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐  
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐

## SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐  
COMMENCE DRILLING OPNS. ☐ P AND A ☐  
CASING/CEMENT JOB ☐OTHER: **Revised pit closure-to show trench depth** ☒OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Highlander Environmental drilled a test water well at Reindeer Federal #1 on April 26, 2007 to a Total Depth of 80 feet.Highlander measured the water level at 61 feet below surface on April 30, 2007.

Mike Bratcher with Artesia NMOCD requested that

COG Operating LLC follow the pit closure procedure guidelines below:

1. Remove fluids from pit.
2. A 10' deep trench pit will be constructed next to all sides of the existing reserve pit and lined with a 12 mil liner. The contents will be encapsulated in this pit and the liner will be folded over the mud and cuttings.
3. Cover liner with 20 mil liner with excess of 3' on all sides as per option IV.B.3.(b) of the Pit and Below-Grade Tank Guidelines.
4. Cover with a minimum 3' of native soil.
5. Contour pit to prevent erosion and ponding of rainwater.

Notify OCD 24 hours prior to beginning  
pit closure.I hereby cert  
grade tank hasSamples are to be obtained from  
pit area and analysis submitted to  
NMOCD prior to back-fillinglete to the best of my knowledge and belief. I further certify that any pit or below-  
D guidelines ☒, a general permit ☐ or an (attached) alternative OCD-approved plan ☐.SIGNATURE Phyllis Edwards TITLE Regulatory Analyst DATE 5-1-07Type or print name **Phyllis Edwards** E-mail address: **pedwards@conchoresources.com** Telephone No. **432-685-4340**  
For State Use OnlyAPPROVED BY: Mike Bratcher TITLE Field Supervisor DATE MAY 07 2007  
Conditions of Approval (if any):Rec'd  
5/27/07**Completed 7-17-07***[Signature]*