Highlander Environmental Corp.

Midland, Texas

August 12, 2004

Mr. Larry Johnson
Environmental Engineer Specialist
Oil Conservation Division- District I
1625 N. French Drive
P. O. Box 1980
Hobbs, New Mexico 88240

IR-006
8/16/04

RE: Closure Report for the Pogo Producing Company, Covington A Federal #9 Tank Battery Located 480' FSL, 1980' FWL, Section 25, Township 22 South, Range 32 East, Lea County, New Mexico

Dear Mr. Johnson:

Highlander Environmental Corp. (Highlander) was contacted by Pogo Producing Company (Pogo) to assess and remediate a spill on the Covington A Federal #9 Tank Battery located 480' FSL, 1980' FWL, Section 25, Township 22 South, Range 32 East, Lea County, New Mexico (Site). The State of New Mexico C-141 (Initial) is shown in Appendix A. The Site is shown in Figure 1.

Background

According to the State of New Mexico C-141 report, the spill occurred on March 8, 2004 from an overflow of a water tank, when the motor on the transfer pump burned out. This tank is located inside the battery firewalls. The overflow released 242 barrels of produced water and oil. 220 barrels of fluid were recovered by a vacuum truck, as the majority of the fluids pooled inside the tank battery firewalls. The fluids breached the north firewall and flowed onto the caliche pad. The spill flowed west approximately 90' and then southwest across the lease road and onto native soil in an area measuring approximately 150' x 15'. The impacted area inside the firewalls measured approximately 35' x 140'. The spill areas are shown on Figure 2.

Groundwater and Regulatory

According to published data from "Geology and Groundwater Resources of Lea County, New Mexico", dated 1952, no water wells were reported in Township 22 South, Range 32 East. The New Mexico State Engineer Office database did show wells in Section 14 and 19, Township 22 South, Range 32 East, with water levels of 350' and 280', respectively.

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

Previous Assessment and Corrective Action

Highlander submitted a report "Assessment Report for the Pogo Producing Company, Covington A Federal #9 Tank Battery located 480' FSL, 1980' FWL, Section 25, Township 22 South, Range 32 East, Lea County, New Mexico", dated April 12, 2004, to the NMOCD for review. The report discusses the assessment, sampling and cleanup activities performed at the Site. As recommended, shallow hydrocarbon impact inside the tank battery would be remediated in place. The soil would be worked and fertilized to remediate below the TPH RRAL of 5,000 mg/kg. A Micro-Blaze Product would be added to aid the remediation process. Periodic soil samples would be collected to monitor the remediation effectiveness. In addition, an attempt to vertically define the chloride impact in the area of AH-1 would be performed. A summary of the activities performed during the assessment phase are describe below.

On March 10, 2004 Highlander personnel installed a total of nine (9) auger holes using a stainless steel, bucket-type hand auger to evaluate and attempt to delineate the extent of impacted soil. Five (5) auger holes (AH-1 – AH-5) were placed inside the tank battery firewall. The hydrocarbon concentrations were below the RRAL for TPH (5,000 mg/kg) and BTEX at 1-1.5' below surface. Auger hole AH-1 was not vertically defined with chloride concentrations of 8,300 mg/kg (0-0.5') to 10,700 mg/kg (5-5.5').

Prior to inspection and sampling, the southwest spill area had been excavated and approximately 1.0' of top soil had been removed. The excavated soil was transported to proper disposal. A total of four (4) auger holes (AH-6 – AH-9) were placed in the southwest spill area. The soil samples did not exceed the RRAL for TPH and BTEX.

Soil Sampling and Remediation

As discussed in the assessment report, the area of AH-1 was not vertically defined with chloride concentrations of 8,300 mg/kg (0-0.5') to 10,700 mg/kg (5-5.5'). On May 12, 2004, Highlander personnel installed a hand augered borehole at AH-1 to attempt to define the extent of the chloride impact. Soil samples were collected at depths of 6-6.5', 8-8.5' and 8.5-9.0' below ground surface for chloride evaluation. The results are shown in Table 2. Referring to Table 1, the chloride levels decreased with depth to (106 mg/kg, 6-6.5'), (2,150 mg/kg, 8-8.5') and (447 mg/kg, 8.5-9.0').

On May 12, 2004, Highlander tilled and treated the soil at the tank battery with a Micro-Blaze Product. No samples were collected at the tank battery. On August 4, 2004, Highlander tilled and treated the area at the tank battery. After treatment, soil samples were collected from the tank battery. The tank battery was segregated into four areas (Area 1, Area 2, Area 3 and Area 4) for sampling. Composite samples were collected from 0-1' below surface for TPH evaluation. The laboratory results are shown in Appendix B. The soil sample results are shown in Table 2. Referring to Table 2, none of the 4 Areas exceeded the RRAL.

Conclusions

The evaluation at the tank battery did show a shallow hydrocarbon impact. The hydrocarbon concentrations were below the RRAL for TPH (5,000 mg/kg) and BTEX at 1-1.5' below surface. After remediation of the surface soils at the tank battery, the soil TPH concentrations were all below the RRAL. The chloride concentrations in AH-2, AH-3, AH-4 and AH-5 were somewhat elevated at 0-0.5' below surface. However, these levels significantly decreased with depth. Chloride concentrations detected in AH-1 was vertically defined and do not appear to be an environmental concern. The spill area southwest of the tank battery did not show levels above the RRAL.

Recommendation

Based upon the results of sampling and work performed on this Site, Pogo requests closure of this spill issue. The State of New Mexico C-141 (Final) is shown in Appendix A. If you require any additional information or have any questions or comments, please call.

HIGHLANDER ENVIRONMENTAL CORP,

Ike Tavarez, P.G.
Project Manager/Geologist

cc: Don Riggs – Pogo Producing Company
Barrett Smith – Pogo Producing Company

FIGURES

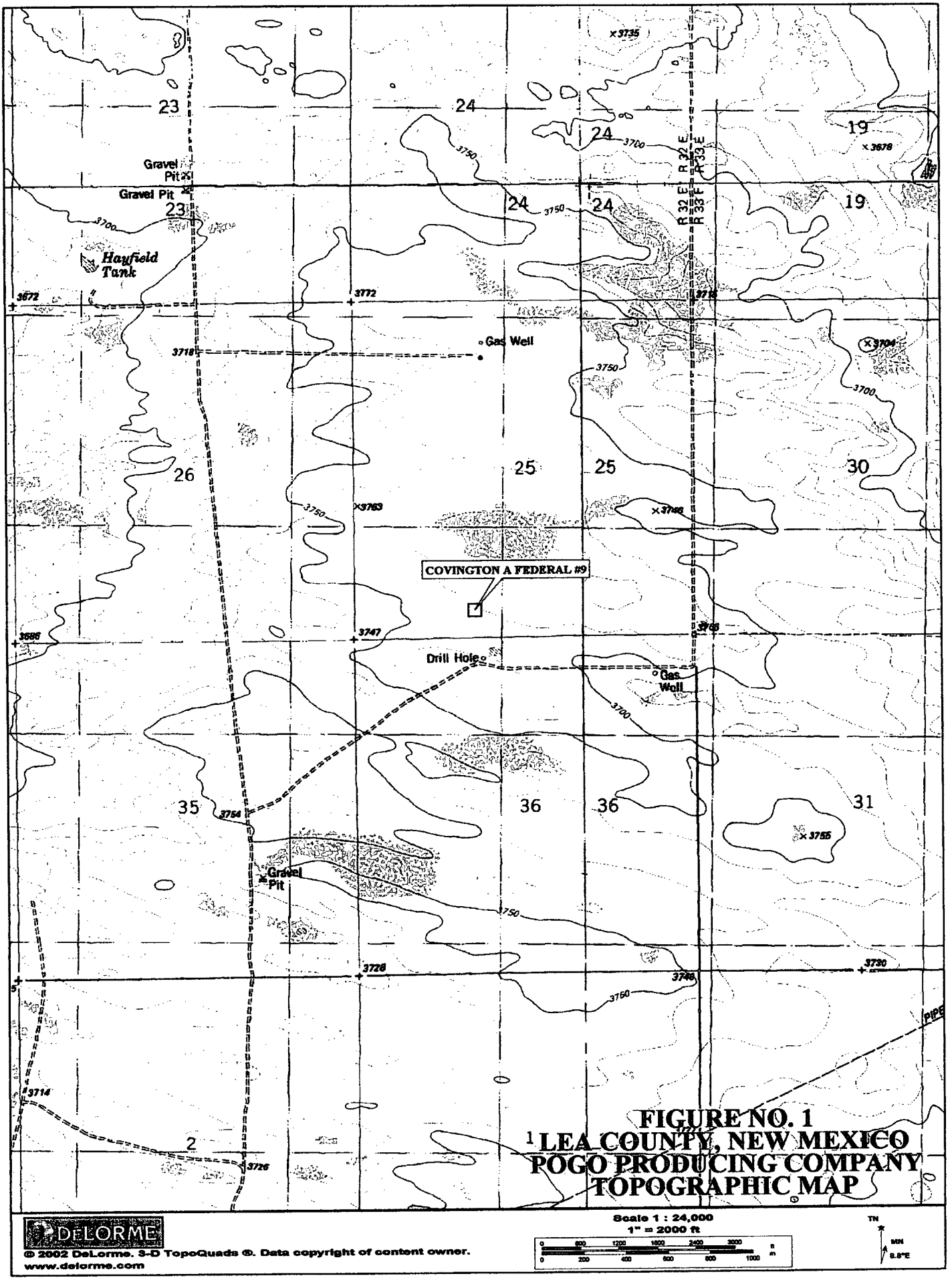

FIGURE NO. 1
LEA COUNTY, NEW MEXICO
POGO PRODUCING COMPANY
TOPOGRAPHIC MAP

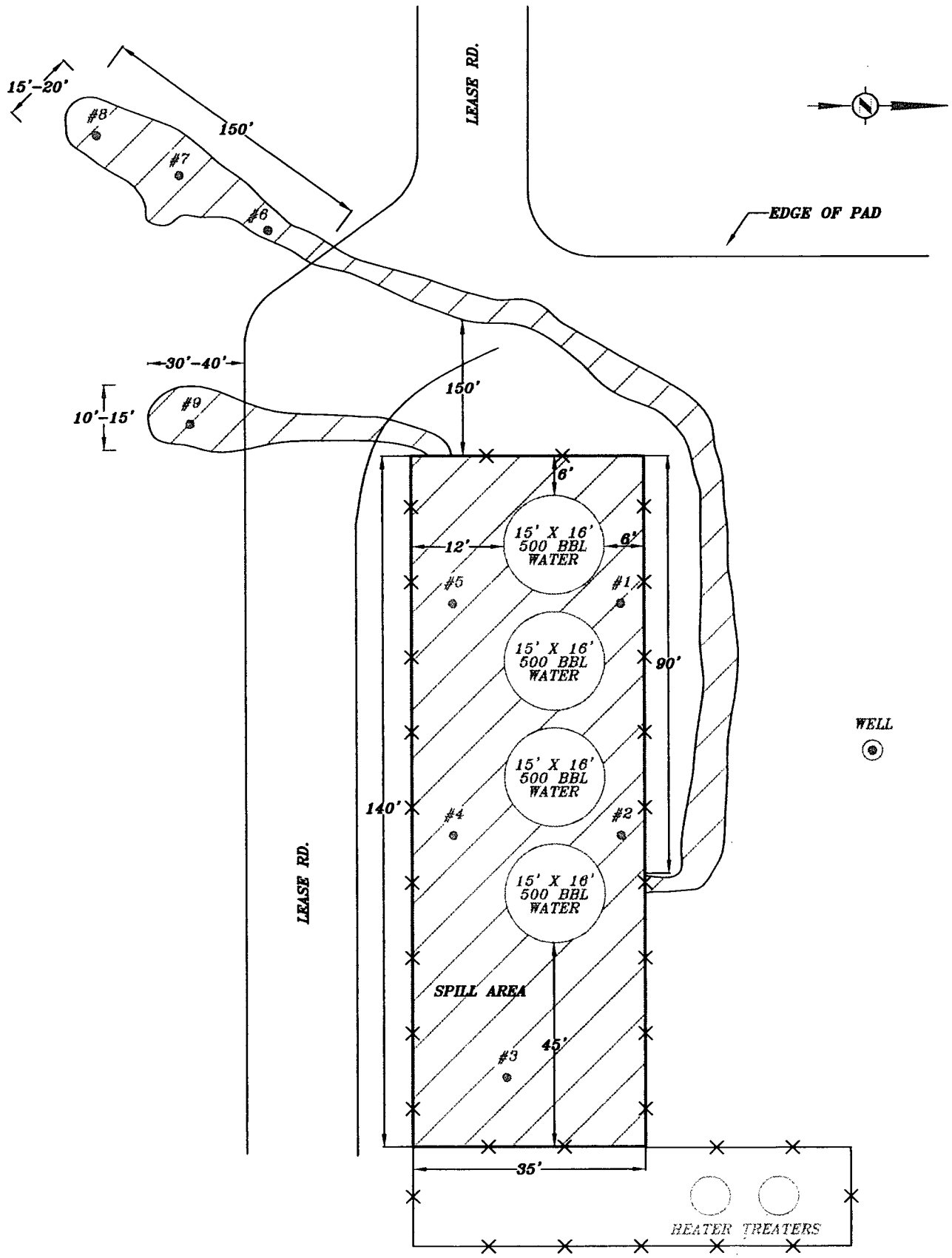

FIGURE NO. 2

LEA COUNTY, NEW MEXICO

POGO PRODUCING COMPANY

COVINGTON A FEDERAL #9

HIGHLANDER ENVIRONMENTAL CORP.
MIDLAND, TEXAS

DATE: 3/15/04
DWN. BY: JJ
FILE: C:\POGO\2141 COVINGTON A

NOT TO SCALE

@ AUGER HOLE LOCATION

TABLES

Table 1
Pogo Producing Company
Project # 2141- Covington Federal A #9
Lea County, New Mexico

Sample ID	Date Sampled	Sample Depth (ft)	TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
			C6-C12	C12-C35	Total					
AH-1	3/10/04	0-0.5	8,960	25,700	34,700	**16.9**	49.4	29.2	100.9	8,300
AH-1	3/10/04	1-1.5	97.0	526.0	624.0	<0.025	0.0435	0.0492	1.187	14,000
AH-1	3/10/04	3-3.5	-	-	-	-	-	-	-	10,000
AH-1	3/10/04	5-5.5	-	-	-	-	-	-	-	10,700
AH-2	3/10/04	0-0.5	407.0	1,850	2,260	-	-	-	-	9,150
AH-2	3/10/04	1-1.5	<10	19.8	19.8	-	-	-	-	396
AH-3	3/10/04	0-0.5	2,690	10,900	13,600	-	-	-	-	2,020
AH-3	3/10/04	1-1.5	<10	9.4	19.4	-	-	-	-	396
AH-4	3/10/04	0-0.5	2,340	7,930	10,300	-	-	-	-	5,100
AH-4	3/10/04	1-1.5	<10	19.2	19.2	-	-	-	-	840
AH-5	3/10/04	0-0.5	3,820	36,700	40,500	4	12.3	6.34	18.8	1,720
AH-5	3/10/04	1-1.5	15.9	2,190	2,210	-	-	-	-	30
AH-6	3/10/04	0-0.5	<10	<10	<10	-	-	-	-	<20
AH-7	3/10/04	0-0.5	10.6	179	190	-	-	-	-	<20
AH-8	3/10/04	0-0.5	469	2,200	2,670	0.026	0.258	0.581	3.07	80
AH-9	3/10/04	0-0.5	<10	75.8	75.8	-	-	-	-	<20

(-) not analyzed

Table 2
Pogo Producing Company
Project #2141, Covington Federal A #9
Lea County, New Mexico

Sample ID	Date Sampled	Sample Depth (ft)	TPH (mg/kg)			Chloride (mg/kg)
			C6-C12	C12-C35	Total	
Augerhole Sample Results						
AH-1	5/12/04	6-6.5	-	-	-	106
AH-1	5/12/04	8-8.5	-	-	-	2,150
AH-1	5/12/04	8.5-9.0	-	-	-	447
Soil Remediation Results						
Area 1	8/4/04	0-1	126	3,310	3,440	-
Area 2	8/4/04	0-1	143	3,610	3,750	-
Area 3	8/4/04	0-1	102	3,620	3,720	-
Area 4	8/4/04	0-1	220	4,690	4,910	-

(-) not analyzed

APPENDIX A

State of New Mexico
Form C-141

373-0720

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

Form C-141
Revised March 17, 1999

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: POGO PRODUCING Co.	Contact: BARRETT SMITH
Address: PO BOX 10340 MIDLAND TX 7702	Telephone No.: 432-685-8141
Facility Name: COWLETON "A" FEDERAL #9	Facility Type: TANK BATTERY

Surface Owner	Mineral Owner	Lease No.
		NM-2579

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	25	22S	32E	480	SOUTH	1980	WEST	LEA

NATURE OF RELEASE

Type of Release: PRODUCING WATER & OIL	Volume of Release: 242	Volume Recovered: 220
Source of Release: WATER TANK OVERFLOW	Date and Hour of Occurrence: 3/3/04 12:00 AM	Date and Hour of Discovery: 3/8/04 7:00 AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? SYLVIA	
By Whom? SCOTT HODGES	Date and Hour 3/8/04 10:45 AM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. NA	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* MOTOR ON TRANSFER PUMP FOR WATER DISPOSAL BURNED AND CAUSED TANK TO OVERFLOW. USED VACUUM TRUCK TO REMOVE ALL FREE STANDING FLUIDS AND BACKHOE TO CLEAN UP.

Describe Area Affected and Cleanup Action Taken.* 99% OF ALL FLUIDS WERE CONTAINED IN DIKED AREA AND REMAINING FLUID RAN ONTO PACKED CALICHE WELL PAD.

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: Scott Hodges	OIL CONSERVATION DIVISION
Printed Name: SCOTT HODGES	Approved by District Supervisor:
Title: PRODUCTION SUPERVISOR	Approval Date: / Expiration Date:
Date: 3/8/04 Phone: 432-631-2343	Conditions of Approval: / Attached ☐

* Attach Additional Sheets If Necessary

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
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised June 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 **Pogo Producing Company**	Contact **Barritt Smith**
Address **300 N. Marienfeld, Ste 600, Midland, Tx. 79701**	Telephone No. **(432) 685-8100**
Facility Name **Covington A Federal #9**	Facility Type **Tank Battery**

Surface Owner	Mineral Owner	Lease No. **NM – 2379**

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	**25**	**22S**	**32E**	**480**	**South**	**1980**	**West**	**Lea**

NATURE OF RELEASE

Type of Release **Oil and Water**	Volume of Release **242**	Volume Recovered **220**
Source of Release **Water tank over flow**	Date and Hour of Occurrence **3/8/04, 12:00 AM**	Date and Hour of Discovery **3/8/04 7:00 am**
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? **Silva (NMOCD, Hobbs)**	
By Whom? Scott Hodges (Pogo)	Date and Hour **3/8/04 10:45 am**	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Motor at transfer pump for water disposal burned and caused the tank to overflow. Used vacuum truck to remove free oil. The fluids released were all contained inside dike, except in section at the dike breached and flowed southwest of the tank battery on native soil. This area was immediately excavated and hauled to disposal.

Describe Area Affected and Cleanup Action Taken.*

The spill area inside the tank battery dike measured approximately 35'x 140' and the southwest spill area (native soil) measured approximately 15'x 150' and 30' x 10'. The impacted soil in the native soil was immediately excavated and properly disposed. Confirmation samples collected from the southwest spill area were below the RRAL for TPH and BTEX. The impacted soil at the tank battery was remediated below the RRALs. A Closure Report was prepared and submitted to the NMOCD for review.

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: Ike Tavarez	OIL CONSERVATION DIVISION
Printed Name: Ike Tavarez (agent for Pogo Producing Company)	Approved by District Supervisor:
Title: Senior Geologist	Approval Date: / Expiration Date:
E-mail Address: itavarez@hec-enviro.com	Conditions of Approval: / Attached ☐
Date: 8/12/04 Phone: (432) 682-4559	

* Attach Additional Sheets If Necessary

APPENDIX B

Analytical Results

ENVIRONMENTAL LAB OF

12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Ike Tavarez

Highlander Environmental Corp.

1910 N. Big Spring St.

Midland, TX 79705

Project: Pogo/ Lovington A #9 TB

Project Number: 2141

Location: Lea Co., NM

Lab Order Number: 4H06008

Report Date: 08/09/04

Highlander Environmental Corp.	Project: Pogo/ Lovington A #9 TB	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 2141	**Reported:**
Midland TX, 79705	Project Manager: Ike Tavarez	08/09/04 16:26

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Area #1 (0-1.0')	4H06008-01	Soil	08/04/04 00:00	08/06/04 10:00
Area #2 (0-1.0')	4H06008-02	Soil	08/04/04 00:00	08/06/04 10:00
Area #3 (0-1.0')	4H06008-03	Soil	08/04/04 00:00	08/06/04 10:00
Area #4 (0-1.0')	4H06008-04	Soil	08/04/04 00:00	08/06/04 10:00

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Highlander Environmental Corp.	Project: Pogo/ Lovington A #9 TB	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 2141	**Reported:**
Midland TX, 79705	Project Manager: Ike Tavarez	08/09/04 16:26

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Area #1 (0-1.0') (4H06008-01) Soil									
Gasoline Range Organics C6-C12	**126**	50.0	mg/kg dry	5	EH40602	08/06/04	08/07/04	EPA 8015M	
Diesel Range Organics >C12-C35	**3310**	50.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**3440**	50.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*16.5 %*	*70-130*		"	"	"	"	*S-06*
Surrogate: 1-Chlorooctadecane		*25.2 %*	*70-130*		"	"	"	"	*S-06*
Area #2 (0-1.0') (4H06008-02) Soil									
Gasoline Range Organics C6-C12	**143**	50.0	mg/kg dry	5	EH40602	08/06/04	08/07/04	EPA 8015M	
Diesel Range Organics >C12-C35	**3610**	50.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**3750**	50.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*17.2 %*	*70-130*		"	"	"	"	*S-06*
Surrogate: 1-Chlorooctadecane		*25.6 %*	*70-130*		"	"	"	"	*S-06*
Area #3 (0-1.0') (4H06008-03) Soil									
Gasoline Range Organics C6-C12	**102**	50.0	mg/kg dry	5	EH40602	08/06/04	08/07/04	EPA 8015M	
Diesel Range Organics >C12-C35	**3620**	50.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**3720**	50.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*16.2 %*	*70-130*		"	"	"	"	*S-06*
Surrogate: 1-Chlorooctadecane		*24.4 %*	*70-130*		"	"	"	"	*S-06*
Area #4 (0-1.0') (4H06008-04) Soil									
Gasoline Range Organics C6-C12	**220**	50.0	mg/kg dry	5	EH40602	08/06/04	08/07/04	EPA 8015M	
Diesel Range Organics >C12-C35	**4690**	50.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**4910**	50.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*17.3 %*	*70-130*		"	"	"	"	*S-06*
Surrogate: 1-Chlorooctadecane		*27.8 %*	*70-130*		"	"	"	"	*S-06*

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Highlander Environmental Corp.	Project: Pogo/ Lovington A #9 TB	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 2141	**Reported:**
Midland TX, 79705	Project Manager: Ike Tavarez	08/09/04 16:26

General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Area #1 (0-1.0') (4H06008-01) Soil									
% Solids	**89.0**		%	1	EH40901	08/06/04	08/06/04	% calculation	
Area #2 (0-1.0') (4H06008-02) Soil									
% Solids	**89.0**		%	1	EH40901	08/06/04	08/06/04	% calculation	
Area #3 (0-1.0') (4H06008-03) Soil									
% Solids	**89.0**		%	1	EH40901	08/06/04	08/06/04	% calculation	
Area #4 (0-1.0') (4H06008-04) Soil									
% Solids	**89.0**		%	1	EH40901	08/06/04	08/06/04	% calculation	

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Highlander Environmental Corp.	Project: Pogo/ Lovington A #9 TB	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 2141	**Reported:**
Midland TX, 79705	Project Manager: Ike Tavarez	08/09/04 16:26

Organics by GC - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH40602 - Solvent Extraction (GC)										
Blank (EH40602-BLK1)				Prepared & Analyzed: 08/06/04						
Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	"							
Total Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	*56.1*		*mg kg*	*50.0*		*112*	*70-130*			
Surrogate: 1-Chlorooctadecane	*64.4*		*"*	*50.0*		*129*	*70-130*			
Blank (EH40602-BLK2)				Prepared & Analyzed: 08/06/04						
Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	"							
Total Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	*55.6*		*mg kg*	*50.0*		*111*	*70-130*			
Surrogate: 1-Chlorooctadecane	*62.4*		*"*	*50.0*		*125*	*70-130*			
LCS (EH40602-BS1)				Prepared & Analyzed: 08/06/04						
Gasoline Range Organics C6-C12	541	10.0	mg/kg wet	500		108	75-125			
Diesel Range Organics >C12-C35	548	10.0	"	500		110	75-125			
Total Hydrocarbon C6-C35	1090	10.0	"	1000		109	75-125			
Surrogate: 1-Chlorooctane	*64.4*		*mg kg*	*50.0*		*129*	*70-130*			
Surrogate: 1-Chlorooctadecane	*63.4*		*"*	*50.0*		*127*	*70-130*			
LCS (EH40602-BS2)				Prepared: 08/06/04 Analyzed: 08/07/04						
Gasoline Range Organics C6-C12	499	10.0	mg/kg wet	500		99.8	75-125			
Diesel Range Organics >C12-C35	468	10.0	"	500		93.6	75-125			
Total Hydrocarbon C6-C35	967	10.0	"	1000		96.7	75-125			
Surrogate: 1-Chlorooctane	*64.8*		*mg kg*	*50.0*		*130*	*70-130*			
Surrogate: 1-Chlorooctadecane	*51.9*		*"*	*50.0*		*104*	*70-130*			
LCS Dup (EH40602-BSD2)				Prepared: 08/06/04 Analyzed: 08/07/04						
Gasoline Range Organics C6-C12	471	10.0	mg/kg wet	500		94.2	75-125	5.77	20	
Diesel Range Organics >C12-C35	485	10.0	"	500		97.0	75-125	3.57	20	
Total Hydrocarbon C6-C35	996	10.0	"	1000		99.6	75-125	2.95	20	
Surrogate: 1-Chlorooctane	*60.8*		*mg kg*	*50.0*		*122*	*70-130*			
Surrogate: 1-Chlorooctadecane	*54.5*		*"*	*50.0*		*109*	*70-130*			

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Organics by GC - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH40602 - Solvent Extraction (GC)										
Calibration Check (EH40602-CCV1)				Prepared & Analyzed: 08/06/04						
Gasoline Range Organics C6-C12	510		mg/kg	500		102	80-120			
Diesel Range Organics >C12-C35	518		"	500		104	80-120			
Total Hydrocarbon C6-C35	1030		"	1000		103	80-120			
Surrogate: 1-Chlorooctane	*60.5*		"	*50.0*		*121*	*70-130*			
Surrogate: 1-Chlorooctadecane	*58.2*		"	*50.0*		*116*	*70-130*			
Calibration Check (EH40602-CCV2)				Prepared: 08/06/04 Analyzed: 08/07/04						
Gasoline Range Organics C6-C12	493		mg/kg	500		98.6	80-120			
Diesel Range Organics >C12-C35	522		"	500		104	80-120			
Total Hydrocarbon C6-C35	1020		"	1000		102	80-120			
Surrogate: 1-Chlorooctane	*61.4*		"	*50.0*		*123*	*70-130*			
Surrogate: 1-Chlorooctadecane	*61.9*		"	*50.0*		*124*	*70-130*			
Matrix Spike (EH40602-MS1)	**Source: 4H06001-02**			Prepared & Analyzed: 08/06/04						
Gasoline Range Organics C6-C12	531	10.0	mg/kg dry	581	ND	91.4	75-125			
Diesel Range Organics >C12-C35	597	10.0	"	581	ND	103	75-125			
Total Hydrocarbon C6-C35	1130	10.0	"	1160	ND	97.4	75-125			
Surrogate: 1-Chlorooctane	*56.8*		*mg kg*	*50.0*		*114*	*70-130*			
Surrogate: 1-Chlorooctadecane	*48.5*		"	*50.0*		*97.0*	*70-130*			
Matrix Spike Dup (EH40602-MSD1)	**Source: 4H06001-02**			Prepared & Analyzed: 08/06/04						
Gasoline Range Organics C6-C12	549	10.0	mg/kg dry	581	ND	94.5	75-125	3.33	20	
Diesel Range Organics >C12-C35	561	10.0	"	581	ND	96.6	75-125	6.22	20	
Total Hydrocarbon C6-C35	1110	10.0	"	1160	ND	95.7	75-125	1.79	20	
Surrogate: 1-Chlorooctane	*57.1*		*mg kg*	*50.0*		*114*	*70-130*			
Surrogate: 1-Chlorooctadecane	*49.3*		"	*50.0*		*98.6*	*70-130*			

Highlander Environmental Corp.	Project: Pogo/ Lovington A #9 TB	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 2141	**Reported:**
Midland TX, 79705	Project Manager: Ike Tavarez	08/09/04 16:26

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH40901 - General Preparation (Prep)										
Blank (EH40901-BLK1)				Prepared & Analyzed: 08/05/04						
% Solids	100		%							
Duplicate (EH40901-DUP1)		**Source: 4H04012-01**		Prepared & Analyzed: 08/05/04						
% Solids	95.0		%		95.0			0.00	20	

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Highlander Environmental Corp.	Project: Pogo/ Lovington A #9 TB	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 2141	**Reported:**
Midland TX, 79705	Project Manager: Ike Tavarez	08/09/04 16:26

Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By: Raland K Tuttle Date: 8/9/04

Raland K. Tuttle, QA Officer
Celey D. Keene, Lab Director, Org. Tech Director
Jeanne Mc Murrey, Inorg. Tech Director
James L. Hawkins, Chemist/Geologist
Sara Molina, Chemist
Sandra Biezugbe, Lab Tech.

PAGE: 1 OF: 1

Analysis Request and Chain of Custody Record

HIGHLANDER ENVIRONMENTAL CORP.

1910 N. Big Spring St.
Midland, Texas 79705
(915) 682-4559 Fax (915) 682-3946

CLIENT NAME: POGO **SITE MANAGER:** Ike Tavarez

PROJECT NO.: 2141 **PROJECT NAME:** POGO/Covington A #9 TB Lea Co., NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE
	[illegible]		S	X		Area #1 (0-1.0')	1				X	
	[illegible]		S	X		Area #2 (0-1.0')	1				X	
	[illegible]		S	X		Area #3 (0-1.0')	1				X	
	[illegible]		S	X		Area #4 (0-1.0')	1				X	

ANALYSIS REQUEST (Circle or Specify Method No.)

SAMPLE IDENTIFICATION	BTEX 8020/602	MTBE 8020/602	TPH 418.1 (8015 MOD.) TX1005	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	BOD, TSS, pH, TDS, Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)				
Area #1 (0-1.0')			X																		
Area #2 (0-1.0')			X																		
Area #3 (0-1.0')			X																		
Area #4 (0-1.0')			X																		

RELINQUISHED BY: (Signature)	Date / Time	RECEIVED BY: (Signature)	Date / Time
[illegible signature]	Date: [illegible] Time: [illegible]		Date: Time:
	Date: Time:		Date: Time:
	Date: Time:		Date: Time:

SAMPLED BY: (Print & Sign) [illegible] Date: [illegible] Time: [illegible]

SAMPLE SHIPPED BY: (Circle) FEDEX BUS AIRBILL #: HAND DELIVERED UPS OTHER:

RECEIVING LABORATORY: [illegible]
ADDRESS:
CITY: [illegible] STATE: [illegible] ZIP:
CONTACT: PHONE:

RECEIVED BY: (Signature) [illegible signature]
DATE: [illegible] TIME: [illegible]

HIGHLANDER CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: [illegible]

MATRIX: W-Water A-Air SD-Solid S-Soil SL-Sludge O-Other

REMARKS:

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

ENVIRONMENTAL LAB OF

12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Ike Tavarez
Highlander Environmental Corp.
1910 N. Big Spring St.
Midland, TX 79705

Project: Pogo/Lovington A Fed #9
Project Number: 2141
Location: Lea County, New Mexico

Lab Order Number: 4E13004

Report Date: 05/15/04

Highlander Environmental Corp.	Project: Pogo/Lovington A Fed #9	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 2141	**Reported:**
Midland TX, 79705	Project Manager: Ike Tavarez	05/15/04 07:10

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AH-1 (6.0'-6.5')	4E13004-01	Soil	05/12/04 00:00	05/13/04 14:30
AH-1 (8.0'-8.5')	4E13004-02	Soil	05/12/04 00:00	05/13/04 14:30
AH-1 (8.5'-9.0')	4E13004-03	Soil	05/12/04 00:00	05/13/04 14:30

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Highlander Environmental Corp.	Project: Pogo/Lovington A Fed #9	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 2141	**Reported:**
Midland TX, 79705	Project Manager: Ike Tavarez	05/15/04 07:10

General Chemistry Parameters by EPA / Standard Methods
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
AH-1 (6.0'-6.5') (4E13004-01) Soil									
Chloride	**106**	20.0	mg/kg Wet	2	EE41413	05/13/04	05/14/04	SW 846 9253	
AH-1 (8.0'-8.5') (4E13004-02) Soil									
Chloride	**2150**	20.0	mg/kg Wet	2	EE41413	05/13/04	05/14/04	SW 846 9253	
AH-1 (8.5'-9.0') (4E13004-03) Soil									
Chloride	**447**	20.0	mg/kg Wet	2	EE41413	05/13/04	05/14/04	SW 846 9253	

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory.. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Raland K Tuttle
Quality Assurance Review

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Highlander Environmental Corp.	Project: Pogo/Lovington A Fed #9	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 2141	**Reported:**
Midland TX, 79705	Project Manager: Ike Tavarez	05/15/04 07:10

General Chemistry Parameters by EPA / Standard Methods - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE41413 - Water Extraction										
Blank (EE41413-BLK1)				Prepared: 05/13/04 Analyzed: 05/14/04						
Chloride	ND	20.0	mg/kg Wet							
Matrix Spike (EE41413-MS1)		**Source: 4E13004-03**		Prepared: 05/13/04 Analyzed: 05/14/04						
Chloride	946	20.0	mg/kg Wet	500	447	99.8	80-120			
Matrix Spike Dup (EE41413-MSD1)		**Source: 4E13004-03**		Prepared: 05/13/04 Analyzed: 05/14/04						
Chloride	957	20.0	mg/kg Wet	500	447	102	80-120	1.16	20	
Reference (EE41413-SRM1)				Prepared & Analyzed: 05/14/04						
Chloride	5000		mg/kg	5000		100	80-120			

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory.. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Quality Assurance Review

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Quality Assurance Review

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Environmental Lab of Texas
Variance / Corrective Action Report – Sample Log-In

Client: Highlander Environmental Corp

Date/Time: 5/13/04 / 15:39

Order #: 4E1300 4

Initials: MN

Sample Receipt Checklist

Temperature of container/cooler?	(Yes)	No	6.0 C
Shipping container/cooler in good condition?	(Yes)	No	
Custody Seals intact on shipping container/cooler? MN	(Yes)	No	(Not present)
Custody Seals intact on sample bottles?	Yes	No	(Not present)
Chain of custody present?	(Yes)	No	
Sample Instructions complete on Chain of Custody?	Yes	(No)	Sample time Not given
Chain of Custody signed when relinquished and received?	(Yes)	No	
Chain of custody agrees with sample label(s)	(Yes)	No	
Container labels legible and intact?	(Yes)	No	
Sample Matrix and properties same as on chain of custody?	(Yes)	No	
Samples in proper container/bottle?	(Yes)	No	
Samples properly preserved?	(Yes)	No	
Sample bottles intact?	(Yes)	No	
Preservations documented on Chain of Custody?	(Yes)	No	
Containers documented on Chain of Custody?	(Yes)	No	
Sufficient sample amount for indicated test?	(Yes)	No	
All samples received within sufficient hold time?	(Yes)	No	
VOC samples have zero headspace?	Yes	No	(Not Applicable)

Other observations:

_____

_____

_____

Variance Documentation:

Contact Person: -_____ Date/Time: _____ Contacted by: _____

Regarding:

_____

_____

_____

Corrective Action Taken:

_____

_____

_____

_____

_____

_____

_____

_____

Analysis Request and Chain of Custody Record

HIGHLANDER ENVIRONMENTAL CORP.

1910 N. Big Spring St.
Midland, Texas 79705

(915) 682-4559 Fax (915) 682-3946

PAGE: 1 OF: 1

CLIENT NAME: POGO

SITE MANAGER: Ike Tavarez

PROJECT NO.: 2141

PROJECT NAME: POGO / Covington A Fed # 9 TB Lea County, NM

(E13004)

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8020/602	MTBE 8020/602	TPH 418.1 8015 MOD. TX1005	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 608/608	BOD, TSS, pH, TDS, (Chloride)	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)
-01	5/12/04		S		X	AH-1 (6.0'-6.5')	1				X															X			
-02	5/12/04		S		X	AH-1 (8.0'-8.5')	1				X															X			
-03	5/12/04		S		X	AH-1 (8.5'-9.0')	1				X															X			

RELINQUISHED BY: (Signature) Date: 5/13/04 Time: 2:30

RECEIVED BY: (Signature) Date: Time:

SAMPLED BY: (Print & Sign) Ray Taylor Date: 5/13/04 Time: 1:00

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS AIRBILL # HAND DELIVERED UPS OTHER:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY: Environmental Lab of Texas

ADDRESS:

CITY: Odessa STATE: TX ZIP:

CONTACT: PHONE:

RECEIVED BY: (Signature)

DATE: 05-13-04 TIME: 1430

HIGHLANDER CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 6.0°C 4ozglass

MATRIX: W-Water A-Air SD-Solid S-Soil SL-Sludge O-Other

REMARKS:

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