



Highlander Environmental Corp.

Midland, Texas

January 10, 2005

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

RE: Assessment and Closure Report for the Pogo Producing Company, M.K. Stewart Tank Battery Located in Section 28, Township 23 South, Range 36 East, Unit Letter N, Lea County, New Mexico.

Dear Mr. Johnson:

Highlander Environmental Corp. (Highlander) was contacted by Pogo Producing Company (Pogo) to assess a spill on the M.K. Stewart Tank Battery, located in Unit Letter N, Section 28, Township 23 South, Range 36 East, Lea County, New Mexico (Site). The State of New Mexico C-141 (Initial) is shown in Appendix C. The Site is shown on Figure 1.

On February 6, 2005, a spill occurred at this facility, when a leak developed in the fire tube of the heater treater. According to the C-141, approximately 80 barrels of crude oil and produced water was spilled 30 barrels of fluid were recovered.

Groundwater and Regulatory

According to published data from "Geology and Groundwater Resources of Lea County, New Mexico", dated 1952, four water wells are located in Sections 15, 16, 22 and 23 with reported depths to water ranging from 144' to 189'. Additional wells in Sections 35 and 36 had reported water levels of 120 to 124'. Five wells were located in the USGS database with reported depths to water ranging from 120' to 180'. The New Mexico State Engineer Office database reports 10 well in T-23-S, R-36-E with average depths to water ranging from 127' to 400'. The well records are enclosed in Appendix A.

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

Pogo - 17891

Facility - PPAC0603840286

Incident - PPAC0603840429

Application - PPAC0603840724

1910 N. Big Spring

Midland, Texas 79705

(432) 682-4559

Fax (432) 682-3946

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 on the regional groundwater data, the proposed RRAL for TPH is 5,000 mg/kg.

Site Assessment and Corrective Action

WHERE - NEED TO CLARIFY
SQ

On February 9, 2005, Highlander personnel inspected the spill area. Much of the spill remained inside the facility dike, however, some fluid breached the north dike wall and flowed out into the pasture, north of the facility. The spill area is shown on Figure 2. As it was raining at the time of inspection, it was decided to address the impact in the pasture first. Approximately 1.5' of impacted soil was removed from the spill area and taken to disposal. In the pasture, a total of three (3) hand augers (AH-1, AH-2 and AH-3) were installed in the excavated spill area to assess and define the vertical extent of the impact. The site was re-inspected on February 14, 2005. A total of three (3) auger holes (AH-4, AH-5 and AH-6) were installed to assess the spill inside the dike.

Soil samples from all auger holes were evaluated for Total Petroleum Hydrocarbon (TPH) by EPA 418.1, Benzene, Toluene, Ethylbenzene and Xylene (BTEX) by method SW 846-8020 and chloride by method SW846-9252. The spill area and augerhole locations are shown on Figure 2. The results are summarized in Table 1.

Referring to Table 1, the TPH and BTEX were all below the RRAL for the auger holes (AH-1, AH-2 and AH-3) installed north of the facility. However, the chloride concentrations in the area of AH-2 were elevated. Inside the facility firewall, the TPH and BTEX concentration exceeded the RRAL for the 0-1.0' sample from AH-5. The deeper sample at 1.0'-1.5' showed TPH and BTEX concentrations below the RRAL. Elevated chloride concentrations were also detected at 0-1' and 1.0'-1.5' below surface in the samples from AH-4.

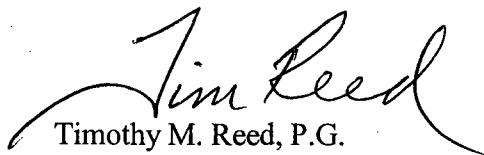
Based upon the results, additional excavation was performed on April 6, 2005, in the vicinity of AH-2, AH-4, and AH-5. After excavating 1.0' of impacted soil in the vicinity of AH-4 additional samples were collected at 2-2.5' and 3-3.5' below excavation bottom (BEB) to delineate the chloride impact. The results showed chloride concentrations decreasing well below 250 mg/kg at 3.0' BEB in AH-4. In the area of AH-2, an additional 1.0' of soil was removed. A composite sample was collected at 2.0' below surface. The composite sample from the vicinity of AH-2 remained elevated.

On October 25, 2005, an additional 2.0' of soil was removed from the vicinity of AH-2 to an approximate depth of 4.0' below surface. After excavation, a trench (T-1A) was installed and samples were collected at 0-1.0', 2.0' and 3.0' BEB for chloride analysis. The samples showed chloride concentrations decreasing below 250 mg/kg at 3.0' below the excavation bottom.



Based upon the depth to groundwater, and remediation performed at this facility, Pogo requests closure of this site. A copy of the C-141 (Final) is included in Appendix C. If you require any additional information or have any questions or comments concerning the assessment report, please call (432) 682-4559.

HIGHLANDER ENVIRONMENTAL CORP,


Timothy M. Reed, P.G.
Vice President

cc: Don Riggs – Pogo Producing Company
Pat Ellis – Pogo Producing Company





NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON

Governor

Joanna Prukop

Cabinet Secretary

Mark E. Fesmire, P.E.

Director

Oil Conservation Division

February 7, 2006

Mr. Pat Ellis EllisP@pogoproducing.com
Pogo Producing Company
300 N. Marienfield
Midland, TX 79701-7340

Re: M.K. Stewart Battery Closure Report
 Site Location: Sec 28 – T23S - R36E
 Closure Report Dated: January 10, 2005

Dear Mr. Ellis,

The New Mexico Oil Conservation Division (OCD) reviewed the above referenced report Submitted by your agent, Highlander Environmental Corp. (HEC). Based on information provided, the site requires no further action.

Please be advised that OCD approval does not relieve Pogo Producing Company of responsibility should operations result in pollution of surface water, ground water, or the environment. In addition, OCD approval does not relieve Pogo Producing Company of responsibility for compliance with any federal, state or local laws and/or regulations. If you have any questions or need assistance please call me at (505) 393-6161, x111 or e-mail larry.johnson@state.nm.us

Sincerely,

Larry Johnson - Environmental Engineer

CC: Wayne Price - Environmental Bureau Chief
 Chris Williams - District I Supervisor
 Paul Sheeley- Environmental Engineer

Caperton, Patricia, EMNRD

From: Ike T [itavarez@hec-enviro.com]
Sent: Wednesday, January 25, 2006 7:23 AM
To: Caperton, Patricia, EMNRD
Subject: Pogo - M.K.Stewart Tank Battery, Lea Co. NM

Pogo Producing Company – (Arch Petroleum)
M.K Stewart Tank Battery
Section 28, T23S, R36E

Patricia,

As requested, the excavated material removed from the Site was transported to Sundance Services, Inc. located in Eunice, New Mexico. If you need additional information please call me, Thanks.

Highlander Environmental Corp.
Ike Tavarez, PG
Senior Geologist

1/26/2006

Table 1

Pogo Producing Company
M.K. Stewart Tank Battery
Lea County, New Mexico

Sample ID	Date Sampled	Sample Depth (ft)	TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
			C6-C12	C12-C35	Total					
Auger holes north of facility										
AH-1	2/09/05	0-0.5	19.4	75.8	95	ND	ND	ND	0.0314	121
AH-1	2/09/05	1.0-1.5	13.5	31.6	45.1	-	-	-	-	142
AH-1	2/09/05	2.0-2.5	ND	ND	ND	-	-	-	-	311
AH-2	2/09/05	0-0.5	ND	ND	ND	-	-	-	-	2600
AH-2	2/09/05	1.0-1.5	16.9	75.1	92	-	-	-	-	471
AH-2 Comp.1	4/07/05	-	-	-	-	-	-	-	-	773
T-1A	10/25/05	1.0 (BEB)	-	-	-	-	-	-	-	850
T-1A	10/25/05	2.0(BEB)	-	-	-	-	-	-	-	906
T-1A	10/25/05	3.0 (BEB)	-	-	-	-	-	-	-	229
AH-3	2/09/05	0-0.5	ND	ND	ND	-	-	-	-	16.7
Auger holes inside facility firewall										
AH-4	2/14/05	0-1.0	82.8	1770	1,850	-	-	-	-	1430
AH-4	2/14/05	1.0-1.5	ND	102	102	-	-	-	-	1310
AH-4	4/06/05	2.0-2.5	-	-	-	-	-	-	-	466
AH-4	4/06/05	3.0-3.5	-	-	-	-	-	-	-	142
AH-5	2/14/05	0-1.0	4270	7,100	11,400	5.22	75.3	56.2	155.1	601
AH-5	2/14/05	1.0-1.5	ND	22.8	22.8	-	-	-	-	224
AH-6	2/14/05	0-0.5	ND	ND	ND	-	-	-	-	71

ND

Analyte Not Detected at or Above Reporting Limits

(-)

Not Analyzed

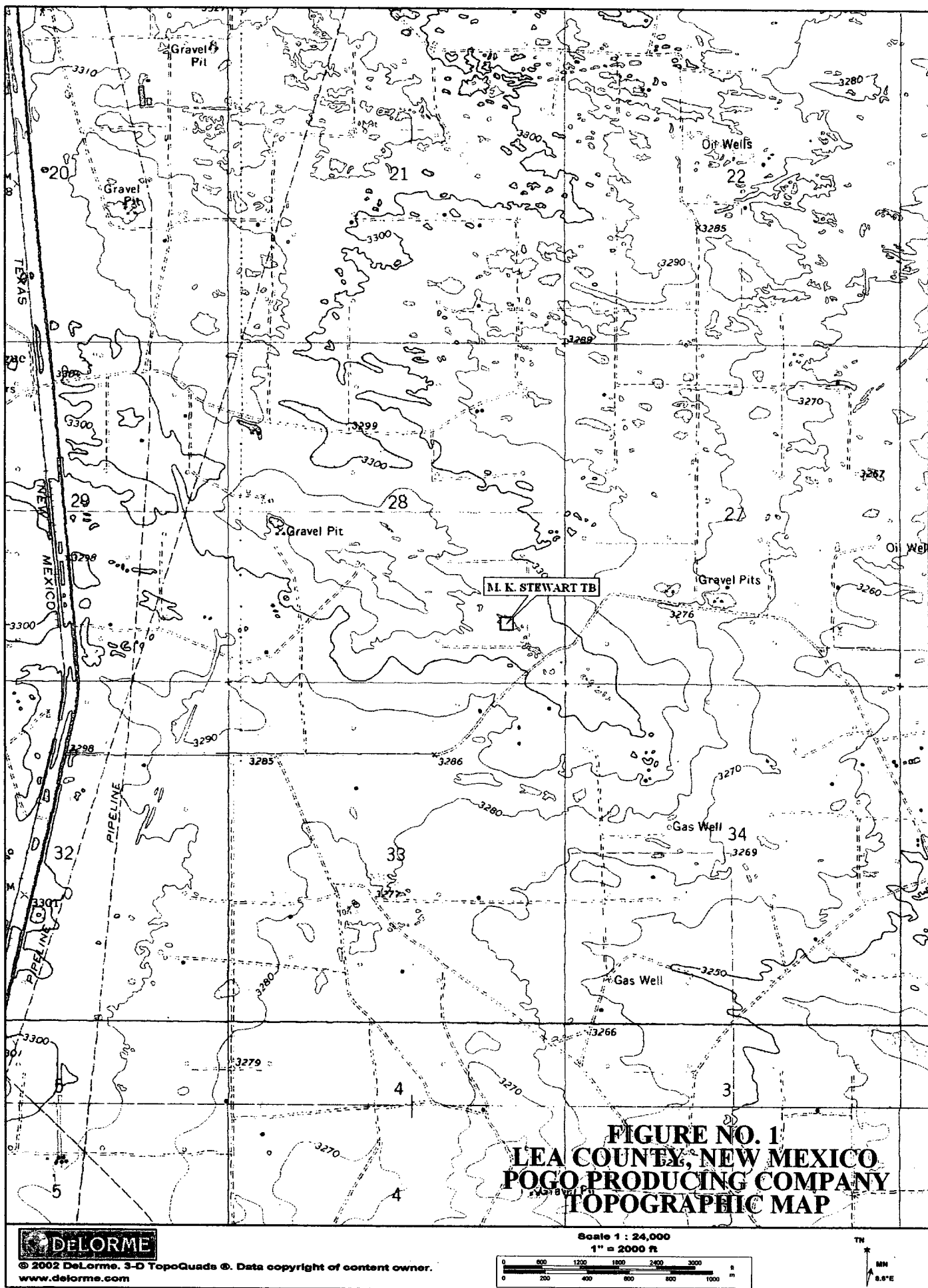
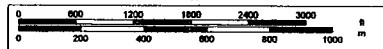


FIGURE NO. 1
LEA COUNTY, NEW MEXICO
POGO PRODUCING COMPANY
TOPOGRAPHIC MAP



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www.delorme.com

Scale 1 : 24,000
1" = 2000 ft



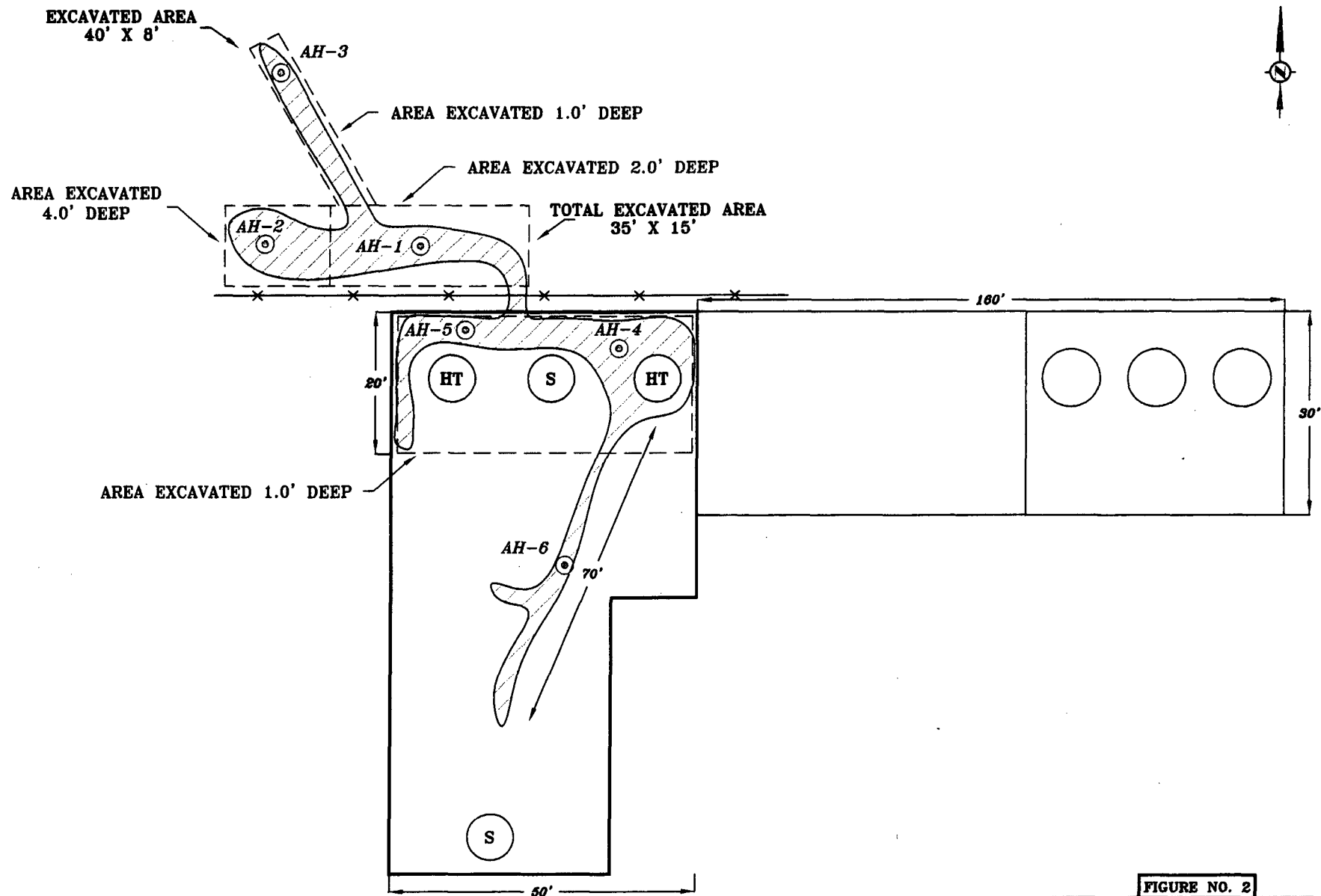


FIGURE NO. 2

LEA COUNTY, NEW MEXICO

POGO PRODUCING COMPANY
M. K. STEWART TB

HIGHLANDER ENVIRONMENTAL CORP.
MIDLAND, TEXAS

DATE:
3/17/05
OWN. BY:
JJ
FILE:
C:\V000\3335
M K STEWART

NOT TO SCALE

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 23S Range: 36E Sections:

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) ☐ Non-Domestic ☐ Domestic
☒ All

POD / Surface Data Report Avg Depth to Water Report

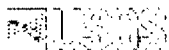
Water Column Report

Clear Form WATERS Menu Help

AVERAGE DEPTH OF WATER REPORT 01/16/2006

Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	(Depth Water in Feet)		
								Min	Max	Avg
CP	23S	36E	15				1	149	149	149
CP	23S	36E	16				1	220	220	220
CP	23S	36E	22				1	400	400	400
CP	23S	36E	31				2	178	200	189
CP	23S	36E	36				5	123	133	127

Record Count: 10



Water Resources

Data Category:

Ground Water

Geographic Area:

New Mexico

go

Ground-water levels for New Mexico

Search Results -- 1 sites found

Search Criteria

site_no list = • 321532103180002

Save file of selected sites to local disk for future upload

USGS 321532103180002 23S.36E.31.21443B

Available data for this site

Ground-water: Levels

GO

Lea County, New Mexico

Hydrologic Unit Code 13070007

Latitude 32°15'32", Longitude 103°18'00" NAD27

Land-surface elevation 3,429.00 feet above sea level NGVD29

The depth of the well is 227 feet below land surface.

This well is completed in the OGALLALA FORMATION (121OGLL) local aquifer.

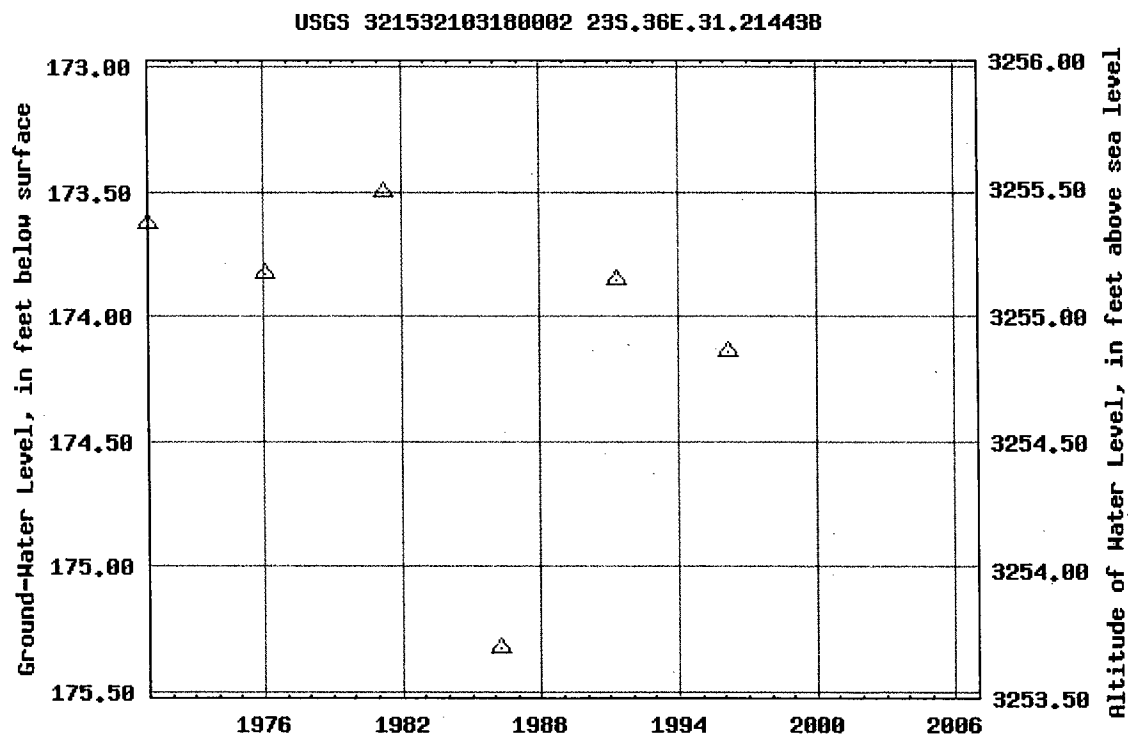
Output formats

[Table of data](#)

[Tab-separated data](#)

[Graph of data](#)

[Reselect period](#)



Breaks in the plot represent a gap of at least one calendar year between two consecutive points.

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Questions about data [New Mexico NWISWeb Data Inquiries](#)

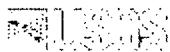
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Ground water for New Mexico: Water Levels

<http://waterdata.usgs.gov/nm/nwis/gwlevels?>

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Water Resources

Data Category:

Ground Water

Geographic Area:

New Mexico

go

Ground-water levels for New Mexico

Search Results -- 1 sites found

Search Criteria

site_no list = • 321540103125701

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USGS 321540103125701 23S.36E.36.314122

Available data for this site

Ground-water: Levels

GO

Lea County, New Mexico

Hydrologic Unit Code 13070007

Latitude 32°15'40", Longitude 103°12'57" NAD27

Land-surface elevation 3,330.20 feet above sea level NGVD29

The depth of the well is 263 feet below land surface.

This well is completed in the OGALLALA FORMATION (121OGLL) local aquifer.

Output formats

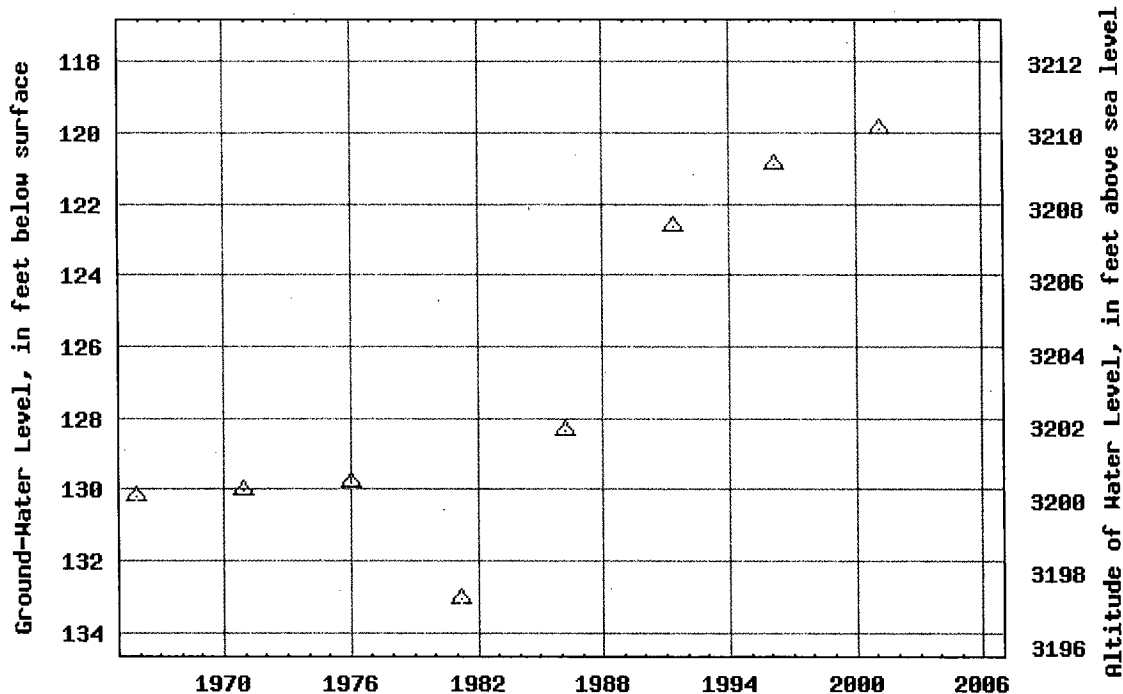
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Ground-water levels for New Mexico

Search Results -- 1 sites found

Search Criteria

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USGS 321544103140201 23S.36E.35.21124

Available data for this site

Ground-water: Levels

GO

Lea County, New Mexico
Hydrologic Unit Code 13070007
Latitude 32°15'44", Longitude 103°14'02" NAD27
Land-surface elevation 3,337.10 feet above sea level NGVD29
The depth of the well is 170 feet below land surface.
This well is completed in the OGALLALA FORMATION (121OGLL) local aquifer.

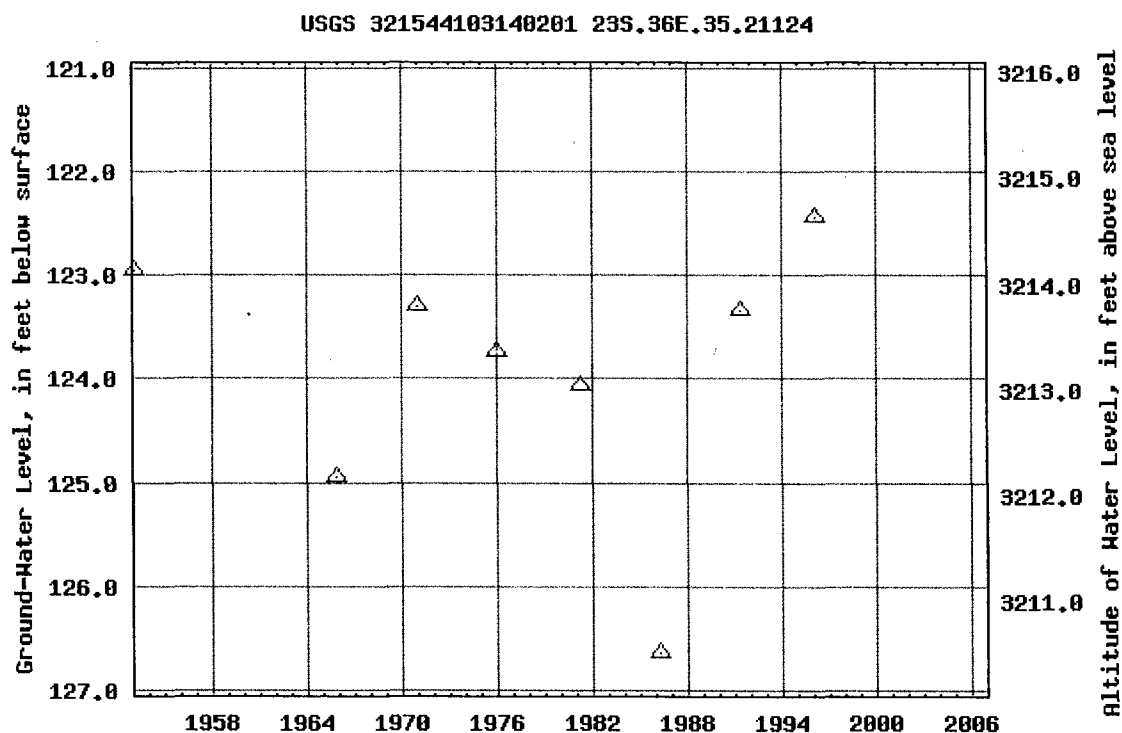
Output formats

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Graph of data

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Ground-water levels for New Mexico

Search Results -- 1 sites found

Search Criteria

site_no list = • 321549103143901

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USGS 321549103143901 23S.36E.26.33330

Available data for this site

Ground-water: Levels

GO

Lea County, New Mexico

Hydrologic Unit Code 13070007

Latitude 32°15'49", Longitude 103°14'39" NAD27

Land-surface elevation 3,359.60 feet above sea level NGVD29

The depth of the well is 160 feet below land surface.

This well is completed in the OGALLALA FORMATION (121OGLL) local aquifer.

Output formats

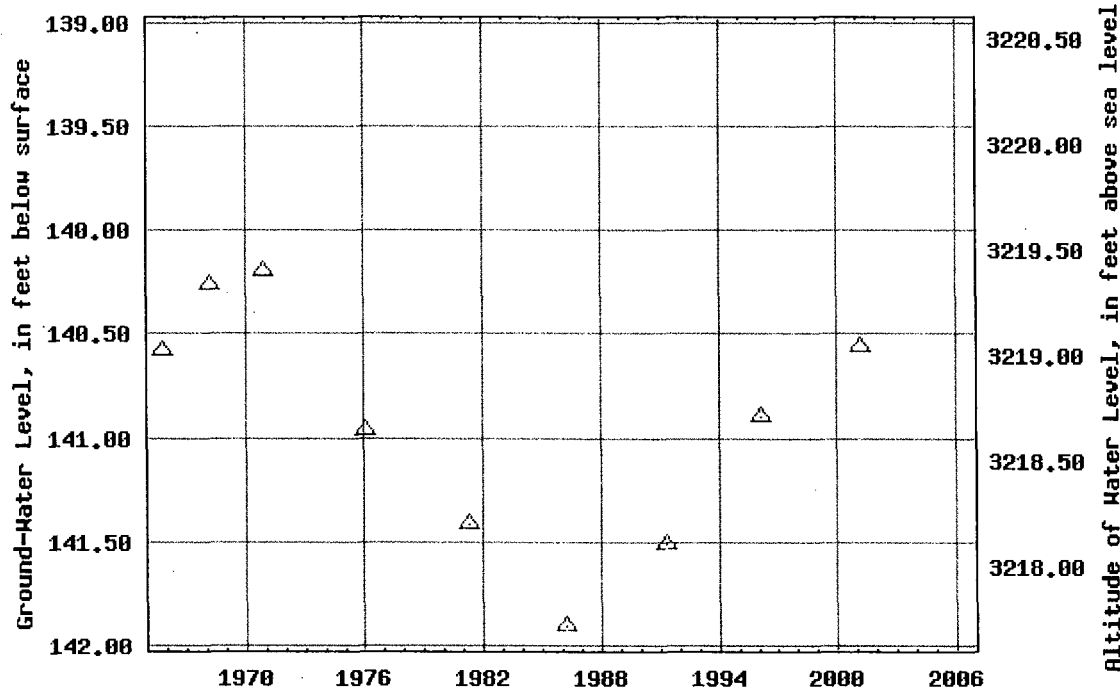
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[Tab-separated data](#)

[Graph of data](#)

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USGS 321549103143901 23S.36E.26.33330



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Ground-water levels for New Mexico

Search Results -- 1 sites found

Search Criteria

site_no list = • 321936103154601

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USGS 321936103154601 23S.36E.04.42431

Available data for this site

Ground-water: Levels

GO

Lea County, New Mexico

Hydrologic Unit Code 13070007

Latitude 32°19'36", Longitude 103°15'46" NAD27

Land-surface elevation 3,492.50 feet above sea level NGVD29

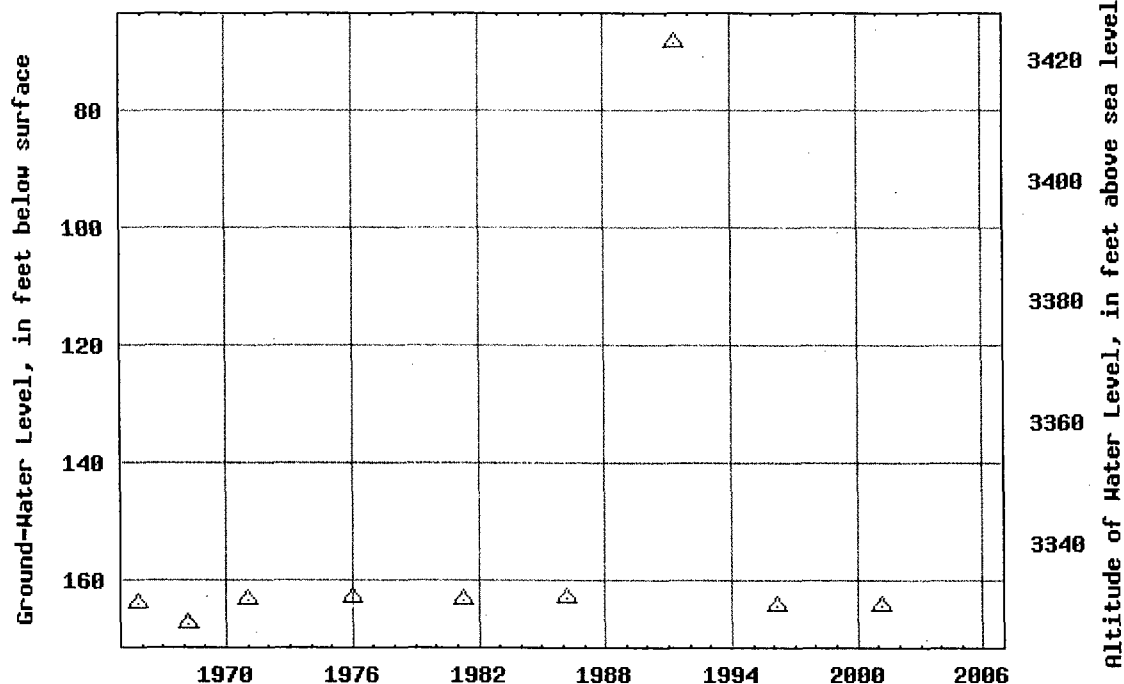
The depth of the well is 206 feet below land surface.

This well is completed in the OGALLALA FORMATION (121OGLL) local aquifer.

Output formats

[Table of data](#)[Tab-separated data](#)[Graph of data](#)[Reselect period](#)

USGS 321936103154601 23S.36E.04.42431



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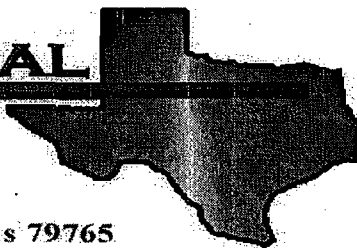
Ground water for New Mexico: Water Levels

<http://waterdata.usgs.gov/nm/nwis/gwlevels?>[Top](#)
[Explanation of terms](#)

Laboratory Analysis

February 9, 2005 Sampling

ENVIRONMENTAL LAB OF



12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Ike Tavaréz

Highlander Environmental Corp.

1910 N. Big Spring St.

Midland, TX 79705

Project: Pogo/ M.K. Stewart Tank Battery Spill

Project Number: 2326

Location: Lea County, NM

Lab Order Number: 5B11029

Report Date: 02/22/05

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

Project: Pogo/ M.K. Stewart Tank Battery Spill
Project Number: 2326
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:
02/22/05 17:02

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AH-1 (0-0.5') North of TB	5B11029-01	Soil	02/09/05 00:00	02/11/05 14:30
AH-1 (1.0'-1.5') North of TB	5B11029-02	Soil	02/09/05 00:00	02/11/05 14:30
AH-1 (2.0'-2.5') North of TB	5B11029-03	Soil	02/09/05 00:00	02/11/05 14:30
AH-2 (0-0.5') North of TB	5B11029-04	Soil	02/09/05 00:00	02/11/05 14:30
AH-2 (1.0'-1.5') North of TB	5B11029-05	Soil	02/09/05 00:00	02/11/05 14:30
AH-3 (0-0.5') North of TB	5B11029-06	Soil	02/09/05 00:00	02/11/05 14:30

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

Project: Pogo/ M.K. Stewart Tank Battery Spill
Project Number: 2326
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:
02/22/05 17:02

Organics by GC
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
AH-1 (0-0.5') North of TB (5B11029-01) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EB52215	02/21/05	02/21/05	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	0.0314	0.0250	"	"	"	"	"	"	
Xylene (o)	J [0.0164]	0.0250	"	"	"	"	"	"	J
Surrogate: a,a,a-Trifluorotoluene		84.1 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.7 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	19.4	10.0	mg/kg dry	1	EB51403	02/12/05	02/14/05	EPA 8015M	
Diesel Range Organics >C12-C35	75.8	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	95.2	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		99.0 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		83.0 %	70-130		"	"	"	"	

AH-1 (1.0'-1.5') North of TB (5B11029-02) Soil

Gasoline Range Organics C6-C12	13.5	10.0	mg/kg dry	1	EB51403	02/12/05	02/14/05	EPA 8015M	
Diesel Range Organics >C12-C35	31.6	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	45.1	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		92.2 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		80.6 %	70-130		"	"	"	"	

AH-1 (2.0'-2.5') North of TB (5B11029-03) Soil

Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EB51403	02/12/05	02/14/05	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		92.0 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		84.0 %	70-130		"	"	"	"	

AH-2 (0-0.5') North of TB (5B11029-04) Soil

Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EB51403	02/12/05	02/14/05	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		92.6 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		78.4 %	70-130		"	"	"	"	

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.

Page 2 of 9

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

Project: Pogo/ M.K. Stewart Tank Battery Spill
Project Number: 2326
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:
02/22/05 17:02

Organics by GC
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
AH-2 (1.0'-1.5') North of TB (5B11029-05) Soil									
Gasoline Range Organics C6-C12	16.9	10.0	mg/kg dry	1	EB51403	02/12/05	02/14/05	EPA 8015M	
Diesel Range Organics >C12-C35	75.1	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	92.0	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		96.0 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		76.8 %	70-130		"	"	"	"	
AH-3 (0-0.5') North of TB (5B11029-06) Soil									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EB51403	02/12/05	02/14/05	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		91.6 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		71.2 %	70-130		"	"	"	"	

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

Project: Pogo/ M.K. Stewart Tank Battery Spill
Project Number: 2326
Project Manager: Ike Tavaréz

Fax: (432) 682-3946

Reported:
02/22/05 17:02

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
AH-1 (0-0.5') North of TB (SB11029-01) Soil									
Chloride	121	5.00	mg/kg	10	EB52106	02/18/05	02/18/05	EPA 300.0	
% Moisture	3.9	0.1	%	1	EB51411	02/11/05	02/14/05	% calculation	
AH-1 (1.0'-1.5') North of TB (SB11029-02) Soil									
Chloride	142	5.00	mg/kg	10	EB52106	02/18/05	02/18/05	EPA 300.0	
% Moisture	3.7	0.1	%	1	EB51411	02/11/05	02/14/05	% calculation	
AH-1 (2.0'-2.5') North of TB (SB11029-03) Soil									
Chloride	311	20.0	mg/kg	40	EB52106	02/18/05	02/18/05	EPA 300.0	
% Moisture	7.5	0.1	%	1	EB51411	02/11/05	02/14/05	% calculation	
AH-2 (0-0.5') North of TB (SB11029-04) Soil									
Chloride	2600	100	mg/kg	200	EB52106	02/18/05	02/18/05	EPA 300.0	
% Moisture	9.0	0.1	%	1	EB51411	02/11/05	02/14/05	% calculation	
AH-2 (1.0'-1.5') North of TB (SB11029-05) Soil									
Chloride	481	20.0	mg/kg	40	EB52106	02/18/05	02/18/05	EPA 300.0	
% Moisture	10.0	0.1	%	1	EB51411	02/11/05	02/14/05	% calculation	
AH-3 (0-0.5') North of TB (SB11029-06) Soil									
Chloride	16.7	5.00	mg/kg	10	EB52106	02/18/05	02/18/05	EPA 300.0	
% Moisture	11.7	0.1	%	1	EB51411	02/11/05	02/14/05	% calculation	

Environmental Lab of Texas

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

Project: Pogo/ M.K. Stewart Tank Battery Spill
Project Number: 2326
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:
02/22/05 17:02

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 EB51403 - Solvent Extraction (GC)

Blank (EB51403-BLK1)

Prepared & Analyzed: 02/12/05

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	40.6		mg/kg	50.0		81.2	70-130			
Surrogate: 1-Chlorooctadecane	37.6		"	50.0		75.2	70-130			

LCS (EB51403-BS1)

Prepared & Analyzed: 02/12/05

Gasoline Range Organics C6-C12	454	10.0	mg/kg wet	500		90.8	75-125			
Diesel Range Organics >C12-C35	480	10.0	"	500		96.0	75-125			
Total Hydrocarbon C6-C35	934	10.0	"	1000		93.4	75-125			
Surrogate: 1-Chlorooctane	40.5		mg/kg	50.0		81.0	70-130			
Surrogate: 1-Chlorooctadecane	37.3		"	50.0		74.6	70-130			

Calibration Check (EB51403-CCV1)

Prepared & Analyzed: 02/12/05

Gasoline Range Organics C6-C12	496		mg/kg	500		99.2	80-120			
Diesel Range Organics >C12-C35	535		"	500		107	80-120			
Total Hydrocarbon C6-C35	1030		"	1000		103	80-120			
Surrogate: 1-Chlorooctane	43.4		"	50.0		86.8	70-130			
Surrogate: 1-Chlorooctadecane	40.9		"	50.0		81.8	70-130			

Matrix Spike (EB51403-MS1)

Source: 5B11027-01

Prepared & Analyzed: 02/12/05

Gasoline Range Organics C6-C12	517	10.0	mg/kg dry	550	ND	94.0	75-125			
Diesel Range Organics >C12-C35	569	10.0	"	550	ND	103	75-125			
Total Hydrocarbon C6-C35	1090	10.0	"	1100	ND	99.1	75-125			
Surrogate: 1-Chlorooctane	49.6		mg/kg	50.0		99.2	70-130			
Surrogate: 1-Chlorooctadecane	43.0		"	50.0		86.0	70-130			

Matrix Spike Dup (EB51403-MSD1)

Source: 5B11027-01

Prepared & Analyzed: 02/12/05

Gasoline Range Organics C6-C12	516	10.0	mg/kg dry	550	ND	93.8	75-125	0.194	20	
Diesel Range Organics >C12-C35	587	10.0	"	550	ND	107	75-125	3.11	20	
Total Hydrocarbon C6-C35	1100	10.0	"	1100	ND	100	75-125	0.913	20	
Surrogate: 1-Chlorooctane	49.5		mg/kg	50.0		99.0	70-130			
Surrogate: 1-Chlorooctadecane	41.3		"	50.0		82.6	70-130			

Environmental Lab of Texas

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Page 5 of 9

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

Project: Pogo/ M.K. Stewart Tank Battery Spill
Project Number: 2326
Project Manager: Ike Tavaréz

Fax: (432) 682-3946

Reported:
02/22/05 17:02

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
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Batch EB52215 - EPA 5030C (GC)

Blank (EB52215-BLK1)

Prepared & Analyzed: 02/21/05

Benzene	ND	0.0250	mg/kg wet							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
Xylene (p/m)	ND	0.0250	"							
Xylene (o)	ND	0.0250	"							
Surrogate: a,a,a-Trifluorotoluene	80.4		ug/kg	100		80.4	80-120			
Surrogate: 4-Bromofluorobenzene	89.9		"	100		89.9	80-120			

LCS (EB52215-BS1)

Prepared & Analyzed: 02/21/05

Benzene	107		ug/kg	100		107	80-120			
Toluene	111		"	100		111	80-120			
Ethylbenzene	117		"	100		117	80-120			
Xylene (p/m)	239		"	200		120	80-120			
Xylene (o)	116		"	100		116	80-120			
Surrogate: a,a,a-Trifluorotoluene	102		"	100		102	80-120			
Surrogate: 4-Bromofluorobenzene	111		"	100		111	80-120			

Calibration Check (EB52215-CCV1)

Prepared: 02/21/05 Analyzed: 02/22/05

Benzene	102		ug/kg	100		102	80-120			
Toluene	103		"	100		103	80-120			
Ethylbenzene	93.8		"	100		93.8	80-120			
Xylene (p/m)	211		"	200		106	80-120			
Xylene (o)	101		"	100		101	80-120			
Surrogate: a,a,a-Trifluorotoluene	104		"	100		104	80-120			
Surrogate: 4-Bromofluorobenzene	90.2		"	100		90.2	80-120			

Matrix Spike (EB52215-MS1)

Source: 5B18009-05

Prepared: 02/21/05 Analyzed: 02/22/05

Benzene	2660		ug/kg	2500	ND	106	80-120			
Toluene	2760		"	2500	23.7	109	80-120			
Ethylbenzene	2690		"	2500	26.6	107	80-120			
Xylene (p/m)	5980		"	5000	76.6	118	80-120			
Xylene (o)	2820		"	2500	36.5	111	80-120			
Surrogate: a,a,a-Trifluorotoluene	103		"	100		103	80-120			
Surrogate: 4-Bromofluorobenzene	113		"	100		113	80-120			

Environmental Lab of Texas

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

Project: Pogo/ M.K. Stewart Tank Battery Spill
Project Number: 2326
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:
02/22/05 17:02

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
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Batch EB52215 - EPA 5030C (GC)

Matrix Spike Dup (EB52215-MSD1)

Source: 5B18009-05

Prepared: 02/21/05

Analyzed: 02/22/05

Benzene	2600		ug/kg	2500	ND	104	80-120	1.90	20	
Toluene	2700		"	2500	23.7	107	80-120	1.85	20	
Ethylbenzene	2560		"	2500	26.6	101	80-120	5.77	20	
Xylene (p/m)	5790		"	5000	76.6	114	80-120	3.45	20	
Xylene (o)	2710		"	2500	36.5	107	80-120	3.67	20	
Surrogate: a,a,a-Trifluorotoluene	104		"	100		104	80-120			
Surrogate: 4-Bromofluorobenzene	108		"	100		108	80-120			

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

Project: Pogo/ M.K. Stewart Tank Battery Spill
Project Number: 2326
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:
02/22/05 17:02

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch EB51411 - General Preparation (Prep)									
Blank (EB51411-BLK1)		Prepared: 02/11/05 Analyzed: 02/14/05							
% Moisture	ND	0.1	%						
Duplicate (EB51411-DUP1)		Source: 5B10014-01		Prepared: 02/11/05 Analyzed: 02/14/05					
% Moisture	10.9	0.1	%		12.1		10.4	20	
Batch EB52106 - Water Extraction									
Blank (EB52106-BLK1)		Prepared & Analyzed: 02/18/05							
Chloride	ND	0.500	mg/kg						
LCS (EB52106-BS1)		Prepared & Analyzed: 02/18/05							
Chloride	8.81		mg/L	10.0		88.1	80-120		
LCS Dup (EB52106-BSD1)		Prepared & Analyzed: 02/18/05							
Chloride	8.80		mg/L	10.0		88.0	80-120	0.114	20
Calibration Check (EB52106-CCV1)		Prepared & Analyzed: 02/18/05							
Chloride	9.00		mg/L	10.0		90.0	80-120		
Duplicate (EB52106-DUP1)		Source: 5B11018-01		Prepared & Analyzed: 02/18/05					
Chloride	22.2	5.00	mg/kg		22.2		0.00	20	

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

Project: Pogo/ M.K. Stewart Tank Battery Spill
Project Number: 2326
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:
02/22/05 17:02

Notes and Definitions

J Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
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: 2-23-05

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director
James L. Hawkins, Chemist/Geologist
Sandra Sanchez, Lab Tech.

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If you have received this material in error, please notify us immediately at 432-563-1800.

Environmental Lab of Texas

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Page 9 of 9

Environmental Lab of Texas

Variance / Corrective Action Report – Sample Log-In

Client: Highlander Environmental

Date/Time: 02-11-05 @ 1430

Order #: 5B11029

Initials: JMM

Sample Receipt Checklist

Temperature of container/cooler?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	1.5	C
Shipping container/cooler in good condition?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	N/A	
Custody Seals intact on shipping container/cooler?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Not present	N/A
Custody Seals intact on sample bottles?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<u>Not present</u>	
Chain of custody present?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Sample Instructions complete on Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Chain of Custody signed when relinquished and received?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Chain of custody agrees with sample label(s)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Container labels legible and intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Sample Matrix and properties same as on chain of custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Samples in proper container/bottle?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Samples properly preserved?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Sample bottles intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Containers documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Sufficient sample amount for indicated test?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
All samples received within sufficient hold time?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
VOC samples have zero headspace?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> 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

(432) 682-4559

Fax (432) 682-3946

CLIENT NAME: POGO

SITE MANAGER: Ike Tawarez

PROJECT NO.: 2326

PROJECT NAME: POGO M.K. Stewart Tank Battery Spill
Lea County, NM

LAB I.D.
NUMBER
5B11029

DATE

TIME

MATRIX

COMP.

GRAB

SAMPLE IDENTIFICATION

NUMBER OF CONTAINERS

FILTERED (Y/N)

HCL

HNOS

ICE

NONE

PRESERVATIVE
METHOD

STEX 8020/802

MTHE 8030/803

SEH 418.1

PAH 8270

RCRA Metals Ag As Ba Cd Cr Pb Hg Se

TCLP Metals Ag As Ba Cd Cr Pb Hg Se

TCLP Volatiles

TCLP Semi Volatiles

RCI

GC-MS Vol. 8240/8260/824

GC-MS Semi. Vol. 8270/825

PCB's 8080/808

Pest. 808/808

BOD, TSS, pH, TDS, Chloride

Gamma Spec.

Alpha Beta (Air)

PLM (Asbestos)

RELINQUISHED BY: (Signature)

Date: 2/11/05

Time: 2:30

RECEIVED BY: (Signature)

Date: _____

Time: _____

SAMPLED BY: (Print & Sign)

Date: 2/10/05

Time: 2:30

RELINQUISHED BY: (Signature)

Date: _____

Time: _____

RECEIVED BY: (Signature)

Date: _____

Time: _____

SAMPLE SHIPPED BY: (Circle)

FEDEX ☐ BUS ☐

HAND DELIVERED ☒ UPS ☐

AIRBILL # _____

OTHER: _____

RELINQUISHED BY: (Signature)

Date: _____

Time: _____

RECEIVED BY: (Signature)

Date: _____

Time: _____

HIGHLANDER CONTACT PERSON:

Ike Tawarez

Results by:

RUSH Charges

Authorized:

Yes No

RECEIVING LABORATORY:

Enviro-Mark Lab of Tex

ADDRESS:

Odessa

CITY:

STATE: TX

CONTACT:

PHONE: _____

RECEIVED BY: (Signature)

Date: 02-11-05

Time: 1430

SAMPLE CONDITION WHEN RECEIVED:

4oz glass on ice 1.5°C

MATRIX:

W-Water

A-Air

SD-Solid

S-Sol

SL-Sludge

O-Other

REMARKS:

* Run BTEX on highest TPH

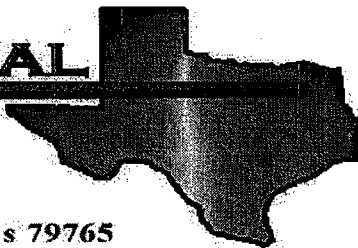
Please Fill out all copies - Laboratory retains yellow copy - Return original copy to Highlander Environmental Corp. - Project Manager retains pink copy - Accounting receives Gold copy.

Tim Reed 2-17-5

Laboratory Analysis

February 14, 2005 Sampling

E NVIRONMENTAL LAB OF



12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Ike Tavaréz

Highlander Environmental Corp.

1910 N. Big Spring St.

Midland, TX 79705

Project: Pogo/ M.K. Stewart Tank Battery Spill

Project Number: 2326

Location: Lea County, N.M.

Lab Order Number: 5B17011

Report Date: 02/23/05

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

Project: Pogo/ M.K. Stewart Tank Battery Spill
Project Number: 2326
Project Manager: Ike Tavaréz

Fax: (432) 682-3946

Reported:
02/23/05 08:37

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AH-4 (0-1.0')	5B17011-01	Soil	02/14/05 00:00	02/17/05 16:36
AH-4 (1.0-1.5')	5B17011-02	Soil	02/14/05 00:00	02/17/05 16:36
AH-5 (0-1.0')	5B17011-04	Soil	02/14/05 00:00	02/17/05 16:36
AH-5 (1.0-1.5')	5B17011-05	Soil	02/14/05 00:00	02/17/05 16:36
AH-6 (0-0.5')	5B17011-07	Soil	02/14/05 00:00	02/17/05 16:36

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

Project: Pogo/ M.K. Stewart Tank Battery Spill
Project Number: 2326
Project Manager: Ike Tavaréz

Fax: (432) 682-3946

Reported:
02/23/05 08:37

Organics by GC
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
AH-4 (0-1.0') (SB17011-01) Soil									
Gasoline Range Organics C6-C12	82.8	50.0	mg/kg dry	5	EB51808	02/18/05	02/18/05	EPA 8015M	
Diesel Range Organics >C12-C35	1770	50.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	1850	50.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		7.96 %	70-130		"	"	"	"	S-06
Surrogate: 1-Chlorooctadecane		15.0 %	70-130		"	"	"	"	S-06
AH-4 (1.0-1.5') (SB17011-02) Soil									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EB51808	02/18/05	02/18/05	EPA 8015M	
Diesel Range Organics >C12-C35	102	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	102	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		97.2 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		95.4 %	70-130		"	"	"	"	
AH-5 (0-1.0') (SB17011-04) Soil									
Benzene	5.22	0.500	mg/kg dry	500	EB52215	02/21/05	02/22/05	EPA 8021B	
Toluene	75.3	0.500	"	"	"	"	"	"	
Ethylbenzene	56.2	0.500	"	"	"	"	"	"	
Xylene (p/m)	115	0.500	"	"	"	"	"	"	
Xylene (o)	40.1	0.500	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		179 %	80-120		"	"	"	"	S-04
Surrogate: 4-Bromofluorobenzene		111 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	4270	50.0	mg/kg dry	5	EB51808	02/18/05	02/18/05	EPA 8015M	
Diesel Range Organics >C12-C35	7100	50.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	11400	50.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		29.2 %	70-130		"	"	"	"	S-06
Surrogate: 1-Chlorooctadecane		18.0 %	70-130		"	"	"	"	S-06
AH-5 (1.0-1.5') (SB17011-05) Soil									
Gasoline Range Organics C6-C12	J [5.72]	10.0	mg/kg dry	1	EB51808	02/18/05	02/18/05	EPA 8015M	J
Diesel Range Organics >C12-C35	22.8	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	22.8	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		84.2 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		82.0 %	70-130		"	"	"	"	

Environmental Lab of Texas

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Page 2 of 9

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

Project: Pogo/ M.K. Stewart Tank Battery Spill
Project Number: 2326
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:
02/23/05 08:37

Organics by GC
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
AH-6 (0-0.5') (5B17011-07) Soil									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EB51808	02/18/05	02/18/05	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		82.6 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		78.4 %	70-130		"	"	"	"	

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

Project: Pogo/ M.K. Stewart Tank Battery Spill
Project Number: 2326
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:
02/23/05 08:37

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
AH-4 (0-1.0') (SB17011-01) Soil									
Chloride	1430	50.0	mg/kg	100	EB52107	02/19/05	02/19/05	EPA 300.0	
% Moisture	4.3	0.1	%	1	EB52104	02/18/05	02/21/05	% calculation	
AH-4 (1.0-1.5') (SB17011-02) Soil									
Chloride	1310	50.0	mg/kg	100	EB52107	02/19/05	02/19/05	EPA 300.0	
% Moisture	4.7	0.1	%	1	EB52104	02/18/05	02/21/05	% calculation	
AH-5 (0-1.0') (SB17011-04) Soil									
Chloride	601	20.0	mg/kg	40	EB52107	02/19/05	02/19/05	EPA 300.0	
% Moisture	4.3	0.1	%	1	EB52104	02/18/05	02/21/05	% calculation	
AH-5 (1.0-1.5') (SB17011-05) Soil									
Chloride	224	10.0	mg/kg	20	EB52107	02/19/05	02/19/05	EPA 300.0	
% Moisture	3.9	0.1	%	1	EB52104	02/18/05	02/21/05	% calculation	
AH-6 (0-0.5') (SB17011-07) Soil									
Chloride	71.0	5.00	mg/kg	10	EB52107	02/19/05	02/19/05	EPA 300.0	
% Moisture	13.4	0.1	%	1	EB52104	02/18/05	02/21/05	% calculation	

Environmental Lab of Texas

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

Project: Pogo/ M.K. Stewart Tank Battery Spill
Project Number: 2326
Project Manager: Ike Tavaraz

Fax: (432) 682-3946

Reported:
02/23/05 08:37

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 EB51808 - Solvent Extraction (GC)

Blank (EB51808-BLK1)

Prepared & Analyzed: 02/18/05

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	36.6		mg/kg	50.0		73.2	70-130			
Surrogate: 1-Chlorooctadecane	37.9		"	50.0		75.8	70-130			

LCS (EB51808-BS1)

Prepared & Analyzed: 02/18/05

Gasoline Range Organics C6-C12	420	10.0	mg/kg wet	500		84.0	75-125			
Diesel Range Organics >C12-C35	538	10.0	"	500		108	75-125			
Total Hydrocarbon C6-C35	958	10.0	"	1000		95.8	75-125			
Surrogate: 1-Chlorooctane	39.4		mg/kg	50.0		78.8	70-130			
Surrogate: 1-Chlorooctadecane	47.2		"	50.0		94.4	70-130			

Calibration Check (EB51808-CCV1)

Prepared & Analyzed: 02/18/05

Gasoline Range Organics C6-C12	506		mg/kg	500		101	80-120			
Diesel Range Organics >C12-C35	532		"	500		106	80-120			
Total Hydrocarbon C6-C35	1040		"	1000		104	80-120			
Surrogate: 1-Chlorooctane	50.1		"	50.0		100	70-130			
Surrogate: 1-Chlorooctadecane	45.8		"	50.0		91.6	70-130			

Matrix Spike (EB51808-MS1)

Source: 5B17011-07

Prepared & Analyzed: 02/18/05

Gasoline Range Organics C6-C12	598	10.0	mg/kg dry	577	ND	104	75-125			
Diesel Range Organics >C12-C35	613	10.0	"	577	ND	106	75-125			
Total Hydrocarbon C6-C35	1210	10.0	"	1150	ND	105	75-125			
Surrogate: 1-Chlorooctane	61.0		mg/kg	50.0		122	70-130			
Surrogate: 1-Chlorooctadecane	57.7		"	50.0		115	70-130			

Matrix Spike Dup (EB51808-MSD1)

Source: 5B17011-07

Prepared & Analyzed: 02/18/05

Gasoline Range Organics C6-C12	585	10.0	mg/kg dry	577	ND	101	75-125	2.20	20	
Diesel Range Organics >C12-C35	616	10.0	"	577	ND	107	75-125	0.488	20	
Total Hydrocarbon C6-C35	1200	10.0	"	1150	ND	104	75-125	0.830	20	
Surrogate: 1-Chlorooctane	59.6		mg/kg	50.0		119	70-130			
Surrogate: 1-Chlorooctadecane	49.4		"	50.0		98.8	70-130			

Environmental Lab of Texas

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

Project: Pogo/ M.K. Stewart Tank Battery Spill
Project Number: 2326
Project Manager: Ike Tavaraz

Fax: (432) 682-3946

Reported:
02/23/05 08:37

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 EB52215 - EPA 5030C (GC)

Blank (EB52215-BLK1)

Prepared & Analyzed: 02/21/05

Benzene	ND	0.0250	mg/kg wet							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
Xylene (p/m)	ND	0.0250	"							
Xylene (o)	ND	0.0250	"							
Surrogate: <i>a,a,a</i> -Trifluorotoluene	80.4		ug/kg	100		80.4	80-120			
Surrogate: 4-Bromofluorobenzene	89.9		"	100		89.9	80-120			

LCS (EB52215-BS1)

Prepared & Analyzed: 02/21/05

Benzene	107		ug/kg	100		107	80-120			
Toluene	111		"	100		111	80-120			
Ethylbenzene	117		"	100		117	80-120			
Xylene (p/m)	239		"	200		120	80-120			
Xylene (o)	116		"	100		116	80-120			
Surrogate: <i>a,a,a</i> -Trifluorotoluene	102		"	100		102	80-120			
Surrogate: 4-Bromofluorobenzene	111		"	100		111	80-120			

Calibration Check (EB52215-CCV1)

Prepared: 02/21/05 Analyzed: 02/22/05

Benzene	102		ug/kg	100		102	80-120			
Toluene	103		"	100		103	80-120			
Ethylbenzene	93.8		"	100		93.8	80-120			
Xylene (p/m)	211		"	200		106	80-120			
Xylene (o)	101		"	100		101	80-120			
Surrogate: <i>a,a,a</i> -Trifluorotoluene	104		"	100		104	80-120			
Surrogate: 4-Bromofluorobenzene	90.2		"	100		90.2	80-120			

Matrix Spike (EB52215-MS1)

Source: 5B18009-05

Prepared: 02/21/05 Analyzed: 02/22/05

Benzene	2660		ug/kg	2500	ND	106	80-120			
Toluene	2760		"	2500	23.7	109	80-120			
Ethylbenzene	2690		"	2500	26.6	107	80-120			
Xylene (p/m)	5980		"	5000	76.6	118	80-120			
Xylene (o)	2820		"	2500	36.5	111	80-120			
Surrogate: <i>a,a,a</i> -Trifluorotoluene	103		"	100		103	80-120			
Surrogate: 4-Bromofluorobenzene	113		"	100		113	80-120			

Environmental Lab of Texas

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

Project: Pogo/ M.K. Stewart Tank Battery Spill
Project Number: 2326
Project Manager: Ike Tavaréz

Fax: (432) 682-3946

Reported:
02/23/05 08:37

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 EB52215 - EPA 5030C (GC)

Matrix Spike Dup (EB52215-MSD1)

Source: 5B18009-05

Prepared: 02/21/05 Analyzed: 02/22/05

Benzene	2600		ug/kg	2500	ND	104	80-120	1.90	20	
Toluene	2700		"	2500	23.7	107	80-120	1.85	20	
Ethylbenzene	2560		"	2500	26.6	101	80-120	5.77	20	
Xylene (p/m)	5790		"	5000	76.6	114	80-120	3.45	20	
Xylene (o)	2710		"	2500	36.5	107	80-120	3.67	20	
Surrogate: a,a,a-Trifluorotoluene	104		"	100		104	80-120			
Surrogate: 4-Bromofluorobenzene	108		"	100		108	80-120			

Environmental Lab of Texas

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Page 7 of 9

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

Project: Pogo/ M.K. Stewart Tank Battery Spill
Project Number: 2326
Project Manager: Ike Tavaraz

Fax: (432) 682-3946

Reported:
02/23/05 08:37

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 EB52104 - General Preparation (Prep)

Blank (EB52104-BLK1)

Prepared: 02/18/05 Analyzed: 02/21/05

% Moisture	ND	0.1	%							
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Duplicate (EB52104-DUP1)

Source: 5B17011-01

Prepared: 02/18/05 Analyzed: 02/21/05

% Moisture	4.2	0.1	%		4.3			2.35	20	
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Batch EB52107 - Water Extraction

Blank (EB52107-BLK1)

Prepared & Analyzed: 02/19/05

Chloride	ND	0.500	mg/kg							
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LCS (EB52107-BS1)

Prepared & Analyzed: 02/19/05

Chloride	9.49		mg/L	10.0		94.9	80-120			
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LCS Dup (EB52107-BSD1)

Prepared & Analyzed: 02/19/05

Chloride	9.17		mg/L	10.0		91.7	80-120	3.43	20	
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Calibration Check (EB52107-CCV1)

Prepared & Analyzed: 02/19/05

Chloride	9.40		mg/L	10.0		94.0	80-120			
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Duplicate (EB52107-DUP1)

Source: 5B16006-02

Prepared & Analyzed: 02/19/05

Chloride	88.4	20.0	mg/kg		85.8			2.99	20	
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Environmental Lab of Texas

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

Project: Pogo/ M.K. Stewart Tank Battery Spill
Project Number: 2326
Project Manager: Ike Tavaraz

Fax: (432) 682-3946

Reported:
02/23/05 08:37

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.

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

J Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).

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: 2-23-05

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director
James L. Hawkins, Chemist/Geologist
Sandra Sanchez, Lab Tech.

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If you have received this material in error, please notify us immediately at 432-563-1800.

Environmental Lab of Texas

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Page 9 of 9

Environmental Lab of Texas

Variance / Corrective Action Report – Sample Log-In

Client: Highlander Env

Date/Time: 2/17/05 4:30

Order #: SB17011

Initials: CK

Sample Receipt Checklist

Temperature of container/cooler?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	2.5 C
Shipping container/cooler in good condition?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Custody Seals intact on shipping container/cooler?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<u>Not present</u>
Custody Seals intact on sample bottles?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<u>Not present</u>
Chain of custody present?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Sample Instructions complete on Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Chain of Custody signed when relinquished and received?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Chain of custody agrees with sample label(s)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Container labels legible and intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Sample Matrix and properties same as on chain of custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Samples in proper container/bottle?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Samples properly preserved?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Sample bottles intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Containers documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Sufficient sample amount for indicated test?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
All samples received within sufficient hold time?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
VOC samples have zero headspace?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> 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

(432) 682-4559

Fax (432) 682-3946

PAGE: / OF: /

ANALYSIS REQUEST (Circle or Specify Method No.)

CLIENT NAME:

Pogo

SITE MANAGER:

Ike Tavaraz

PROJECT NO.:

2326

PROJECT NAME:

Pogo / MK Stewart Tank Battery

Lea Co., NM

SPILL

SAMPLE IDENTIFICATION

LAB I.D.
NUMBER

DATE

TIME

MATRIX

COMP.

GRAB

NUMBER OF CONTAINERS

FILTERED (Y/N)

HCL

HNOS

ICE

NONE

PRESERVATIVE
METHOD

BTEX 8020/802

MTBE 8020/802

TPH 418.1

PAH 8870

RCRA Metals Ag As Ba Cd Cr Pb Hg Se

TCLP Metals Ag As Ba Cd Cr Pb Hg Se

TCLP Volatiles

TCLP Semi Volatiles

RCI

GC/MS Vol. 8240/8260/824

GC/MS Semi. Vol. 8270/825

PCB's 8080/808

Pest. 808/808

HOD, TSS, pH, TDS, (Chloride)

Gamma Spec.

Alpha Beta (Air)

PLM (Asbestos)

-01

2-14-05

S

X

AH-4 (0-1.0')

1

X

X

X

-02

S

X

AH-4 (1.0'-1.5')

1

X

X

X

-03

S

X

AH-4 (2.0'-2.5')

1

X

SLH 2/19/05 Hold

-04

S

X

AH-5 (0-1.0')

1

X

X

X

X

-05

S

X

AH-5 (1.0'-1.5')

1

X

X

X

-06

S

X

AH-5 (2.0'-2.5')

1

X

Hold

-07

S

X

AH-6 (0-0.5')

1

X

X

X

-08

S

X

AH-6 (0.5'-1.0')

1

X

Hold

-09

✓

S

X

AH-6 (1.0'-1.5')

1

X

Hold

RELINQUISHED BY: (Signature)

Date: 2-17-05

Time: 4:20

RECEIVED BY: (Signature)

Date: _____

Time: _____

SAMPLED BY: (Print & Sign)

Ray Taylor

Date: 2-16-05

Time: _____

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: _____

HIGHLANDER CONTACT PERSON:

Ike Tavaraz

Results by:

RUSH Charges

Authorized:

Yes No

RECEIVING LABORATORY: ENVIRONMENTAL LAB OF TEXAS

ADDRESS:

CITY: odessa

STATE: TX

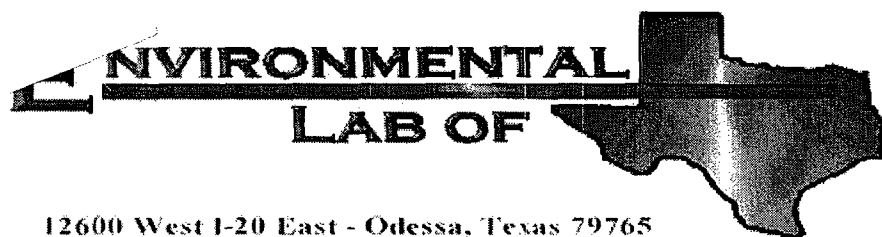
ZIP: _____

CONTACT:

PHONE: _____

Laboratory Analysis

April 06, 2005 Sampling



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/ M.K. Stewart Tank Battery

Project Number: 2326

Location: Lea County, NM

Lab Order Number: 5D11008

Report Date: 04/15/05

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

Project: Pogo/ M.K. Stewart Tank Battery
Project Number: 2326
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:
04/15/05 07:42

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AH-4 (2.0'-2.5')	5D11008-01	Soil	04/06/05 10:30	04/11/05 14:50
AH-4 (3.0-3.5')	5D11008-02	Soil	04/06/05 10:35	04/11/05 14:50
(AH-2) Composite #1 (0-0.5')	5D11008-08	Soil	04/07/05 09:30	04/11/05 14:50

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

Project: Pogo/ M.K. Stewart Tank Battery
Project Number: 2326
Project Manager: Ike Tavaréz

Fax: (432) 682-3946

Reported:
04/15/05 07:42

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
AH-4 (2.0'-2.5') (SD11008-01) Soil									
Chloride	466	20.0	mg/kg	40	ED51408	04/13/05	04/13/05	EPA 300.0	
AH-4 (3.0-3.5') (SD11008-02) Soil									
Chloride	142	5.00	mg/kg	10	ED51408	04/13/05	04/13/05	EPA 300.0	
(AH-2) Composite #1 (0-0.5') (SD11008-08) Soil									
Chloride	773	25.0	mg/kg	50	ED51409	04/14/05	04/14/05	EPA 300.0	

Environmental Lab of Texas

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

Project: Pogo/ M.K. Stewart Tank Battery
Project Number: 2326
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:
04/15/05 07:42

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch ED51408 - Water Extraction									
Blank (ED51408-BLK1)				Prepared & Analyzed: 04/13/05					
Chloride	ND	0.500	mg/kg						
LCS (ED51408-BS1)				Prepared & Analyzed: 04/13/05					
Chloride	10.7		mg/L	10.0		107	80-120		
Calibration Check (ED51408-CCV1)				Prepared & Analyzed: 04/13/05					
Chloride	10.6		mg/L	10.0		106	80-120		
Duplicate (ED51408-DUP1)				Source: 5D11005-11		Prepared & Analyzed: 04/13/05			
Chloride	237	50.0	mg/kg		221		6.99	20	
Batch ED51409 - Water Extraction									
Blank (ED51409-BLK1)				Prepared & Analyzed: 04/14/05					
Chloride	ND	0.500	mg/kg						
LCS (ED51409-BS1)				Prepared & Analyzed: 04/14/05					
Chloride	10.9		mg/L	10.0		109	80-120		
Calibration Check (ED51409-CCV1)				Prepared & Analyzed: 04/14/05					
Chloride	10.3		mg/L	10.0		103	80-120		
Duplicate (ED51409-DUP1)				Source: 5D11012-01		Prepared & Analyzed: 04/14/05			
Chloride	23.2	5.00	mg/kg		20.0		14.8	20	

Environmental Lab of Texas

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

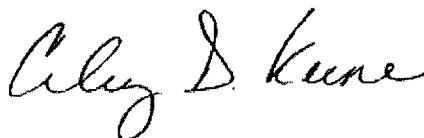
Project: Pogo/ M.K. Stewart Tank Battery
Project Number: 2326
Project Manager: Ike Tavarez

Fax: (432) 682-3946
Reported:
04/15/05 07:42

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
LCS Laboratory Control Spike
MS Matrix Spike
Dup Duplicate

Report Approved By:



Date:

4/15/2005

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director
James L. Hawkins, Chemist/Geologist
Sandra Sanchez, Lab Tech.

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-563-1800.

Environmental Lab of Texas

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Page 4 of 4

Analysis Request and Chain of Custody Record										PAGE: 1 OF 1	
HIGHLANDER ENVIRONMENTAL CORP. 1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 Fax (432) 682-3946										ANALYSIS REQUEST (Circle or Specify Method No.)	
CLIENT NAME: P060			SITE MANAGER: Ike Tovar			PRESERVATIVE METHOD		ANALYSIS REQUEST (Circle or Specify Method No.) BTEX 8220/808 MTBE 8020/808 TPH 413.1 8015 MOD. T1005 PAH 8270 HCB Metals Ag As Ba Cd Cr Pb Hg Se TCLP Metals Ag As Ba Cd Cr Pb Hg Se TCLP Volatiles TCLP Semi Volatiles PCB GC/MS Vol. 8240/8260/824 GC/MS Semi. Vol. 8270/825 PCB's 8080/808 Lead. 808/808 BOD, TSS, pH, TDS, Chloride Gamma Spec. Alpha Beta (Air) PLM (Asbestos)			
PROJECT NO.: 2326		PROJECT NAME: P0601 M.K. Stewart TB			NUMBER OF CONTAINERS						
LAB I.D. NUMBER: SD11008		SAMPLE IDENTIFICATION: Log County, NM			NUMBER OF CONTAINERS						
DATE	TIME	MATRIX	COMP.	GRAB		FILTERED (Y/N)	HCL	HNO3	ICE	NONE	
4-6-05	10:30	S	X		AH-4 (2.0'-2.5')	1			X		
4-6-05	10:35	S	X		AH-4 (3.0'-3.5')	1			X		
4-6-05	10:40	S	X		AH-4 (4.0'-4.5')	1			X		
4-6-05	10:45	S	X		AH-4 (5.0'-5.5')	1			X		
4-6-05	1:30	S	X		T-1 (2.0') BED, (AH-2)	1			X		
4-6-05	1:35	S	X		T-1 (3.0') BED, (AH-2)	1			X		
4-6-05	1:40	S	X		T-1 (5.0') BED, (AH-2)	1			X		
4-7-05	9:30	S	X		(AH-2) Composite #1 (0-0.5')	1			X		
RELINQUISHED BY: (Signature) [Signature] Date: 4-11-05 Time: 2:50 RECEIVED BY: (Signature) _____ Date: _____ Time: _____ SAMPLED BY: (Print & Sign) Ray Taylor Date: 4-11-05 Time: 11:40 SAMPLE SHIPPED BY: (Circle) FEDX AIRBILL # _____ HAND DELIVERED YES UPS OTHER: _____ RECEIVING LABORATORY: Environmental Affairs RECEIVED BY: (Signature) [Signature] ADDRESS: 04356 STATE: TX ZIP: _____ CITY: _____ PHONE: _____ DATE: 04-11-05 TIME: 1450 HIGHLANDER CONTACT PERSON: Ike Tovar Results by: _____ RUSH Charges Authorized: _____ Yes No SAMPLE CONDITION WHEN RECEIVED: 3.5°C MATRIX: W-Water A-Air SD-Solid REMARKS: 4oz glass on ice w/seals Seal on cooler SL-Sludge O-Other											

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.

Environmental Lab of Texas

Variance / Corrective Action Report – Sample Log-In

Client: Highlander Env.

Date/Time: 04-11-05 @ 1450

Order #: 5D11008

Initials: JMM

Sample Receipt Checklist

Temperature of container/cooler?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	3, 5	C
Shipping container/cooler in good condition?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Custody Seals intact on shipping container/cooler?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Not present	
Custody Seals intact on sample bottles?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Not present	
Chain of custody present?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Sample Instructions complete on Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Chain of Custody signed when relinquished and received?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Chain of custody agrees with sample label(s)	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Container labels legible and intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Sample Matrix and properties same as on chain of custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Samples in proper container/bottle?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Samples properly preserved?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Sample bottles intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Preservations documented on Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Containers documented on Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Sufficient sample amount for indicated test?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
All samples received within sufficient hold time?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
VOC samples have zero headspace?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Not Applicable	

Other observations:

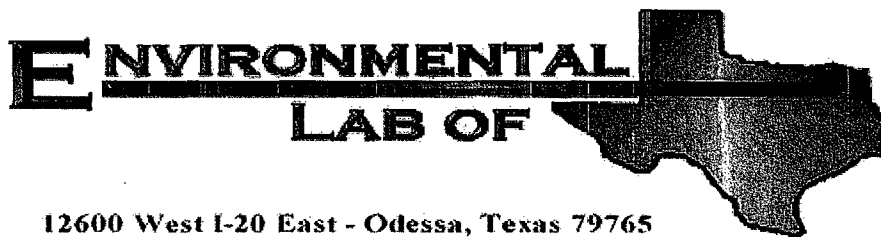
Variance Documentation:

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

Corrective Action Taken:

Laboratory Analysis

October 25, 2005 Sampling



12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Ike Tavaréz

Highlander Environmental Corp.

1910 N. Big Spring St.

Midland, TX 79705

Project: Pogo/ M.K. Stewart Tank Battery

Project Number: 2326

Location: Lea County, NM

Lab Order Number: 5J28002

Report Date: 11/02/05

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

Project: Pogo/ M.K. Stewart Tank Battery
Project Number: 2326
Project Manager: Ike Tavarez

Fax: (432) 682-3946
Reported:
11/02/05 12:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
T-1A 1.0' BEB	5J28002-01	Soil	10/25/05 00:00	10/27/05 17:25
T-1A 2.0' BEB	5J28002-02	Soil	10/25/05 00:00	10/27/05 17:25
T-1A 3.0' BEB	5J28002-03	Soil	10/25/05 00:00	10/27/05 17:25

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

Project: Pogo/ M.K. Stewart Tank Battery
Project Number: 2326
Project Manager: Ike Tavaraz

Fax: (432) 682-3946

Reported:
11/02/05 12:24

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
T-1A 1.0' BEB (5J28002-01) Soil									
Chloride	850	20.0	mg/kg	40	EK50206	10/31/05	11/02/05	EPA 300.0	
T-1A 2.0' BEB (5J28002-02) Soil									
Chloride	906	10.0	mg/kg	20	EK50206	10/31/05	11/02/05	EPA 300.0	
T-1A 3.0' BEB (5J28002-03) Soil									
Chloride	229	10.0	mg/kg	20	EK50206	10/31/05	11/02/05	EPA 300.0	

Environmental Lab of Texas

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Page 2 of 4

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

Project: Pogo/ M.K. Stewart Tank Battery
Project Number: 2326
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:
11/02/05 12:24

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 EK50206 - Water Extraction										
Blank (EK50206-BLK1)				Prepared: 10/31/17 Analyzed: 11/02/05						
Chloride	ND	0.500	mg/kg							
LCS (EK50206-BS1)				Prepared: 10/31/17 Analyzed: 11/02/05						
Chloride	8.58		mg/L	10.0		85.8	80-120			
Calibration Check (EK50206-CCV1)				Prepared: 10/31/17 Analyzed: 11/02/05						
Chloride	8.46		mg/L	10.0		84.6	80-120			
Duplicate (EK50206-DUP1)				Source: 5J19010-03 Prepared: 10/31/17 Analyzed: 11/02/05						
Chloride	130	5.00	mg/kg		133			2.28	20	

Environmental Lab of Texas

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Page 3 of 4

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

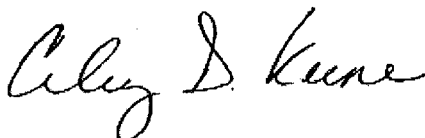
Project: Pogo/ M.K. Stewart Tank Battery
Project Number: 2326
Project Manager: Ike Tavaraz

Fax: (432) 682-3946
Reported:
11/02/05 12:24

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
LCS Laboratory Control Spike
MS Matrix Spike
Dup Duplicate

Report Approved By:



Date: 11/2/2005

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director
James L. Hawkins, Chemist/Geologist
Sandra Sanchez, Lab Tech.

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Page 4 of 4

Analysis Request and Chain of Custody Record

HIGHLANDER ENVIRONMENTAL CORP.

1910 N. Big Spring St.
Midland, Texas 79705

(432) 682-4559

Fax (432) 682-3946

CLIENT NAME: **P060**

SITE MANAGER: **Ike Tavares**

PROJECT NO.: **2326**

PROJECT NAME: **P0601 M.K. Stewart TB**

Lea County, NM

SAMPLE IDENTIFICATION

LAB I.D. NUMBER

DATE

TIME

MATRIX

COMP.

GRAB

NUMBER OF CONTAINERS

FILTERED (Y/N)

HCL

HNOS

ICE

NONE

PRESERVATIVE METHOD

HTX 8080/808

MTX 8080/808

TPH 410.1

PAH 8870

HCRA Metals Ag As Ba Cd Cr Pb Hg Se

TCLP Metals Ag As Ba Cd Cr Pb Hg Se

TCLP Volatiles

TCLP Semi Volatiles

ECI

GC/MS Vol. 8240/8260/8284

GC/MS Sequal Vol. 8270/8285

PCB's 8080/808

Post 808/808

BOD, TSS, pH, TDS, Chloride

Gamma Spec.

Alpha Beta (Air)

PLM (Asbestos)

RELINQUISHED BY: (Signature)

Date: **10/27/05**

Time: **5:25**

RECEIVED BY: (Signature)

Date: _____

Time: _____

SAMPLED BY: (Print & Sign)

Date: **10/27/05**

Time: **5:25**

RELINQUISHED BY: (Signature)

Date: _____

Time: _____

RECEIVED BY: (Signature)

Date: _____

Time: _____

SAMPLE SHIPPED BY: (Circle)

FEDEX
HAND DELIVERED

BUS
UPS

AIRBILL # _____
OTHER: _____

RELINQUISHED BY: (Signature)

Date: _____

Time: _____

RECEIVED BY: (Signature)

Date: _____

Time: _____

HIGHLANDER CONTACT PERSON:

Ike Tavares

Results by:

RUSH Charges

Authorized:

Yes No

RECEIVING LABORATORY: **ELT**

ADDRESS:

CITY: **Dallas**

STATE: **TX**

ZIP: _____

CONTACT:

PHONE: _____

DATE: **10/27/05**

TIME: **5:25**

SAMPLE CONDITION WHEN RECEIVED:

MATRIX:

W-Water

A-Air

SD-Solid

S-Soil

SL-Sludge

O-Other

REMARKS:

Seal/Label 1.5

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.

Environmental Lab of Texas

Variance / Corrective Action Report – Sample Log-In

Client: Highlander

Date/Time: 10/21/05 5:25

Order #: 5528002

Initials: ck

Sample Receipt Checklist

Temperature of container/cooler?	Yes	No	1.5	C
Shipping container/cooler in good condition?	<input checked="" type="checkbox"/> Yes	No		
Custody Seals intact on shipping container/cooler?	Yes	No	Not present	
Custody Seals intact on sample bottles?	<input checked="" type="checkbox"/> Yes	No	Not present	
Chain of custody present?	<input checked="" type="checkbox"/> Yes	No		
Sample Instructions complete on Chain of Custody?	<input checked="" type="checkbox"/> Yes	No		
Chain of Custody signed when relinquished and received?	<input checked="" type="checkbox"/> Yes	No		
Chain of custody agrees with sample label(s)	<input checked="" type="checkbox"/> Yes	No		
Container labels legible and intact?	<input checked="" type="checkbox"/> Yes	No		
Sample Matrix and properties same as on chain of custody?	<input checked="" type="checkbox"/> Yes	No		
Samples in proper container/bottle?	<input checked="" type="checkbox"/> Yes	No		
Samples properly preserved?	<input checked="" type="checkbox"/> Yes	No		
Sample bottles intact?	<input checked="" type="checkbox"/> Yes	No		
Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	No		
Containers documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	No		
Sufficient sample amount for indicated test?	<input checked="" type="checkbox"/> Yes	No		
All samples received within sufficient hold time?	<input checked="" type="checkbox"/> Yes	No		
VOC samples have zero headspace?	<input checked="" type="checkbox"/> Yes	No	Not Applicable	

Other observations:

Variance Documentation:

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

Regarding: _____

Corrective Action Taken:

District I - (505) 393-6161
P. O. Box 1980
Hobbs, NM 88241-1980
District II - (505) 748-1283
811 South First
Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Road
Artesia, NM 87410
District IV - (505) 827-7131

State of New Mexico
Energy Minerals and Natural Resources Department
Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

Form C-141
Originated 2/13/97

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 Arch Pot Inc	Contact CARY WOLLS
Address BUNEB NM	Telephone No. 432-631-0134
Facility Name MK STOWART	Facility Type TANK BARRIX

Surface Owner Jimmy Doon	Mineral Owner FERRAL	Lease No. 27725
------------------------------------	--------------------------------	---------------------------

LOCATION OF RELEASE

Unit Letter N	Section 28	Township 23	Range 36	Feet from the	North/South Line	Feet from the	East/West Line	County LEA
-------------------------	----------------------	-----------------------	--------------------	---------------	------------------	---------------	----------------	----------------------

NATURE OF RELEASE

Type of Release OIL & SW	Volume of Release 80	Volume Recovered 30
Source of Release HOAZER LEAK	Date and Hour of Occurrence 2/6/05	Date and Hour of Discovery N/A
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? FAXED 2/7/05	
By Whom? CARY WOLLS	Date and Hour 2/7/05	
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 (Attach Additional Sheets If Necessary)

Describe Cause of Problem and Remedial Action Taken (Attach Additional Sheets If Necessary)

FIRE TUBE LEAK - EMPTY TREAT P.U. FL OFF CRANK

Describe Area Affected and Cleanup Action Taken (Attach Additional Sheets If Necessary)

**AROUND TREAT BEHIND PAD IN PASTURE
TURN OVER TO ENVIRONMENTAL FOR PLAN OF ACTION FOR
CLEANUP**

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.

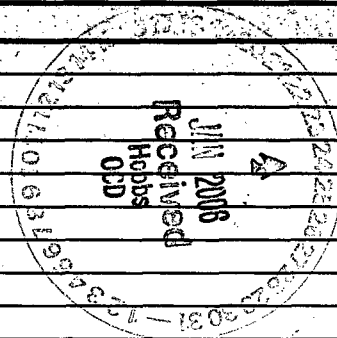
Signature Cary Wolls	OIL CONSERVATION DIVISION		
Printed Name CARY WOLLS	Approved by District Supervisor:	Expiration Date:	
Title FIELD SUPERVISOR	Approval Date:	Attached <input type="checkbox"/>	
Date 2/7/05	Phone 432-631-0134	Conditions of Approval:	

FAXED 2/7/05

SITE INFORMATION

General Site Information:

Site:	M.K. Stewart Tank Battery
Company:	Pogo Producing Company
Section, Township and Range	Section 28, Township 23S, Range 36E
Unit Letter:	N
Lease Number:	27725
County:	Lea
GPS:	32-16-14.6 N 103-09-44.2 W
Surface Owner:	Jimmy Doom
Mineral Owner:	
Directions:	From Eunice intersection of Highways 18 and 234, travel south for 10.3 miles on Hwy. 18. Turn Left through gate onto lease road. Travel 3.5 miles on lease road. Road will turn right. Go 0.5 miles, turn right and go 0.1 mile to tank battery.



Release Data:

Date Released:	2/6/2005
Type Release:	Oil & Produced Water
Source of Contamination:	Heater Treater Leak
Fluid Released:	80 barrels of oil and produced water
Fluids Recovered:	30 barrels oil and produced water

Official Communication:

Name:	Pat Ellis	Don Riggs	Ike Tavaréz
Company:	Pogo Producing Company	Pogo Producing Company	Highlander Environmental Corp.
Address:	300 N. Marienfeld St.	5 Greenway Plaza, Suite 2700	1910 N. Big Spring
P.O. Box	Box 10340		
City:	Midland Texas, 79701-7340	Houston, Texas 77046	Midland, Texas
Phone number:	(432) 685-8100	(713) 297-5045	(432) 682- 4559
Email:	EllisP@pogoproducing.com	riggsd@pogoproducing.com	itavarez@hec-enviro.com

Ranking Criteria

Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	
>100 ft.	0	0
Wellhead Protection:	Ranking Score	Site Data
Water Source <1,000 ft., Private <200 ft.	20	
Water Source >1,000 ft., Private >200 ft.	0	0
Surface Body of Water:	Ranking Score	Site Data
<200 ft.	20	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0
Total Ranking Score:		0

Acceptable Soil RRAL (mg/kg)		
Benzene	Total BTEX	TPH
10	50	5,000

District I
1625 N. Hobbs 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: Pat Ellis
Address: 300 North Marienfeld, Suite 600, Midland TX 79701	Telephone No. (432) 685-8100
Facility Name: M.K. Stewart	Facility Type: Tank Battery

Surface Owner Jimmy Doom	Mineral Owner Federal	Lease No. 27725
--------------------------	-----------------------	-----------------

LOCATION OF RELEASE

Unit Letter N	Section\ 28	Township 23S	Range 36E	Feet from the	North/South Line	Feet from the	East/West Line	County Lea
------------------	----------------	-----------------	--------------	---------------	------------------	---------------	----------------	---------------

NATURE OF RELEASE

Type of Release Oil and produced water	Volume of Release 80 barrels	Volume Recovered 30 barrels
Source of Release Heater Treater Leak	Date and Hour of Occurrence 2/06/2005	Date and Hour of Discovery N/A
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Faxed 2/07/05	
By Whom? Gary Wells	Date and Hour 2/07/05	
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.*

A leak developed in the heater treater fire tube. When discovered, the treater was emptied and fluid was picked up.

Describe Area Affected and Cleanup Action Taken.*

The spill breached the facility dike and flowed out into a pasture to the north. Impacted soils inside the facility dike and out in the pasture were excavated. Highlander inspected the spill area, and collected samples. Additional excavation was performed and confirmation samples collected. Soil samples were evaluated for BTEX, TPH and chloride.

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: *Pat Ellis*

Printed Name: Pat Ellis

Title: Division Environmental Safety & Health Supervisor

E-mail Address: EllisP@pogoproducing.com

Date: 1/18/06 Phone: (432) 685-8100

Approved by District Supervisor:

Approval Date:

Expiration Date:

Conditions of Approval:

Attached ☐

* Attach Additional Sheets If Necessary