1R - 491

GENERAL CORRESPONDENCE

2008

New Mexico Energy, Minerals and Natural Resources Department

Bill Richardson
Governor

Joanna Prukop
Cabinet Secretary
Reese Fullerton
Deputy Cabinet Secretary

Mark Fesmire
Division Director
Oil Conservation Division

April 25, 2008

Mr. Dennis Newman
OXY USA, Inc.
P.O. Box 4294
Houston, TX 77210-4294

RE: REQUIREMENT TO SUBMIT A REMEDIATION PLAN
OXY USA, INC. - E.C. HILL B-D TANK BATTERY
SECTION 34, TOWNSHIP 23 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO
OCD CASE NO. 1R491

Dear Mr. Newman:

The New Mexico Oil Conservation Division (OCD) has determined after reviewing the information submitted by OXY USA, Inc. (OXY) that it must submit a remediation plan to investigate the vadose zone and ground water contamination at its E.C. Hill B-D Tank Battery located in Section 34, Township 23 South, Range 37 East, Lea County, New Mexico. OXY's analytical data documents that the chlorides concentration in ground water at the temporary monitor well was 1150 mg/l, which exceeds the Water Quality Control Commission ground water standard of 250 mg/l.

OCD hereby requires OXY to submit a remediation plan pursuant to OCD Rule 116D; the workplan is due is due sixty (60) days from the receipt by OXY of this written notice. OXY's remediation plan must specify how it will investigate the extent of contamination in both the vadose zone and in ground water. The workplan must also include a complete description of the site, including a site map, the site history including the nature of the release, and a summary of previous investigations. OXY must install as many soil borings and monitoring wells as necessary to delineate the extent of the contamination in both the vadose zone in ground water using an appropriate number of isoconcentration maps and cross sections. OXY's proposal must include the installation of at least one monitor well beneath the tank battery screened below the water table to determine whether "plume diving" is occurring.

After it has completely delineated the release, OCD will determine whether to require additional action from OXY. OXY should submit one paper copy and one electronic copy of all workplans and/or reports. Please refer to ***OCD Case No. 1R491*** on all future correspondence. If you have any questions, please contact Glenn von Gonten of my staff at (505) 476-3488.

Sincerely,

Wayne Price
Environmental Bureau Chief

WP/gvg

cc: Chris Williams
Larry Johnson

Occidental Permian Ltd.
A subsidiary of Occidental Petroleum Corporation

5 Greenway Plaza, Suite 110, Houston, Texas 77046-0521
P.O. Box 4294, Houston, Texas 77210-4294
Phone 713.215.7000
www.oxy.com

VIA REGULAR MAIL AND EMAIL

March 11, 2008

Mr. Glenn von Gonten
New Mexico Energy, Mineral and Natural Resources Department
Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

RE: Submission of Form C-141 – Release Notification and Corrective Action and OXY USA Inc. Authorized Representative
Todd ATB#1,
State L-2 Tank Battery
E. M. Elliott Tank Battery
Todd Water Injection Station
Todd Hobbs R #10 Tank Battery
E. C. Hill "B" ATB at Well #24
E. C. Hill B-D Tank Battery
E. C. Hill Federal #7 Tank Battery

Dear Mr. von Gonton:

OXY USA Inc. ("Oxy") appreciates the time you and Wayne Price with the Oil Conservation Division ("OCD") spent meeting with Oxy representatives (Rick Passmore with Glenn Springs Holding, Inc., Tim Reed with Highlander Environmental, and myself) on February 27, 2008 to discuss Oxy's role as the new operator for the subject sites effective March 1, 2008.

Per your request, attached are Form C-141s for the eight (8) referenced sites. Note Rule 116 letter notifications for these sites were sent to the OCD on June 25, 2007 by Latigo Petroleum Inc. ("Latigo"). Pogo Producing ("Pogo") acquired Latigo in 2006 followed by Plains Exploration and Production ("PXP") acquiring Pogo in November 2007. Oxy has recently acquired majority interest in these sites from PXP and is the new operator.

OXY's remediation company, Glenn Springs Holding, Inc. ("GSH") will be responsible for managing the referenced sites; GSH is a subsidiary of Occidental Petroleum Corporation. OXY's authorized project manager for the referenced sites will be:

Mr. Rick Passmore
Glenn Springs Holding, Inc.
5005 LBJ Freeway, Suite 1350
Dallas Texas 75244
Office: 972-687-7504
Mobile: 859-221-7616
Rick_passmore@oxy.com

If you or District I have any questions concerning the C-141s for the referenced sites, please contact Mr. Passmore. Again, we thank you for your time meeting with us.

Sincerely,

Dennis L. Newman, P.E.

cc: New Mexico Energy, Mineral and Natural Resources Department
Oil Conservation Division
District I
1625 N. French Dr.
Hobbs, New Mexico 88240

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 October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company OXY USA, Inc.	Contact Rick Passmore
Address P.O. Box 4294, Houston, Texas 77210-4294	Telephone No. 972-687-7504
Facility Name E.C. Hill B-D Tank Battery	Facility Type Tank Battery

Surface Owner	Mineral Owner	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	34	23 South	37 East					Lea

Latitude 32.26476 **Longitude** 103.14197

NATURE OF RELEASE

Type of Release Oil and /or produced water	Volume of Release Unknown	Volume Recovered None
Source of Release Historic oil and produced water spills	Date and Hour of Occurrence Unknown	Date and Hour of Discovery
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? N/A	
By Whom?	Date and Hour N/A	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

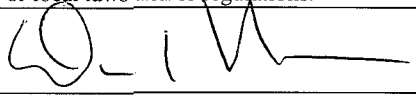
Historic spills.

Latigo Petroleum, Inc. made initial notification to the NMOCD on June 25, 2007, based on due diligence. Latigo was bought by Pogo Producing in 2006. Plains Exploration and Production (PXP) bought Pogo Producing in 2007, and finally OXY, USA Inc. purchased a majority interest in the PXP New Mexico assets on February 29, 2008 and became the operator on March 1, 2008.

Describe Area Affected and Cleanup Action Taken.*

Site Investigation and Characterization is in progress.

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: 	OIL CONSERVATION DIVISION	
Printed Name: Dennis Newman	Approved by District Supervisor:	
Title: Senior Environmental Consultant	Approval Date:	Expiration Date:
E-mail Address: dennis_newman@oxy.com	Conditions of Approval:	Attached ☐
Date: March 7, 2008 Phone: 713-366-5485		

* Attach Additional Sheets If Necessary

IR 491

Highlander Environmental Corp.

Midland, Texas

February 18, 2008

Mr. Glenn von Gonten
New Mexico Energy, Minerals, & Natural Resources
Oil Conservation Division, Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, New Mexico 87504

RE: Latigo Petroleum, Inc. – Project Summary for the Hill, E.C. B-D Tank Battery
Section 34, Township ~~35~~ 23 South, Range 37 East
Lea County, New Mexico
32.26476° N, 103.14197° W

Mr. von Gonten:

On behalf of Latigo Petroleum, Inc. (Latigo), Highlander Environmental Corp. (Highlander) performed a limited subsurface investigation at the Latigo Hill, E.C. B-D Tank Battery Section 34, Township ~~35~~ 23 South, Range 37 East, Lea County, New Mexico. The site location is shown on Figure 1. The soil investigation consisted of placement of hand auger holes and boreholes to assess the subsurface soils. Based on the soil assessment, a well was installed to assess the groundwater qualities at the Site.

The impacted soils were found from the surface to a depth of 60 feet below surface in one of the three soil borings in the area east of the tank battery. The impacted soils exceeded the total petroleum hydrocarbons (TPH) RRAL. The hand auger and borehole locations are shown on Figure 2. The analytical results are shown in Table 1 and Table 2.

Based on the results, borehole (BH-3) was converted to a temporary 2-inch monitor well. Groundwater was encountered at approximately 78 feet below top of casing (TOC). On September 22, 2006 and May 16, 2007, Highlander purged and sampled the well per OCD guidelines for analyses of chlorides and BTEX. Chloride concentrations exceed New Mexico Water Quality Control Commission (NMWQCC) standards, while hydrocarbon constituents (BTEX) were detected at levels below the NMWQCC action levels. The analytical results are shown in Table 3.

This site is adjacent to the E.C. Hill Federal #7 tank battery. A total of six (6) monitor wells have been installed at these sites for delineation purposes, but have not yet been surveyed, gauged or sampled.

Should you have any questions or concerns regarding this site, please do not hesitate to contact me at (432) 682-4559.

Highlander Environmental Corp.

Ike Tavarez, P.G.
Sr. Geologist/Project Manager

FIGURES

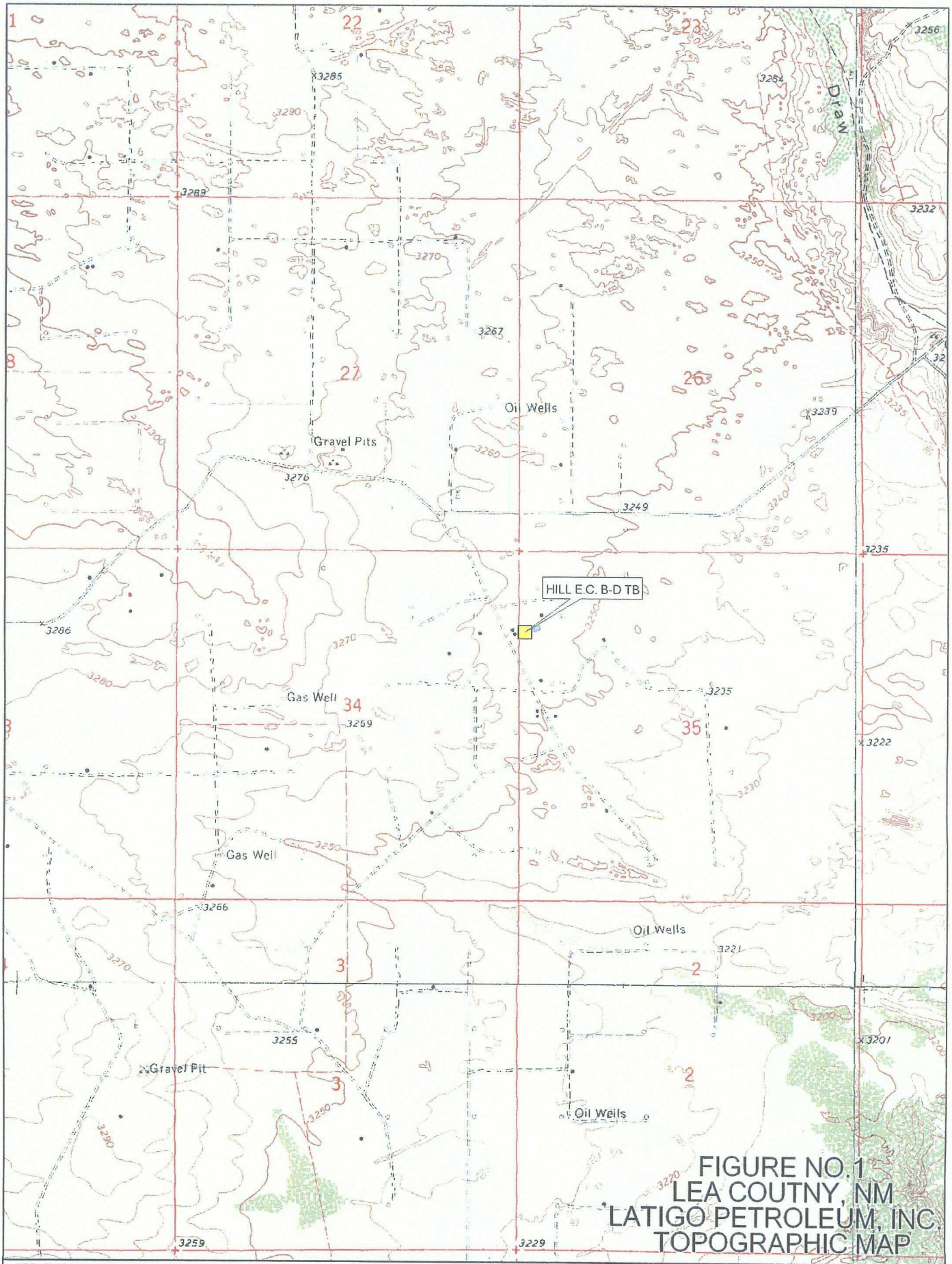
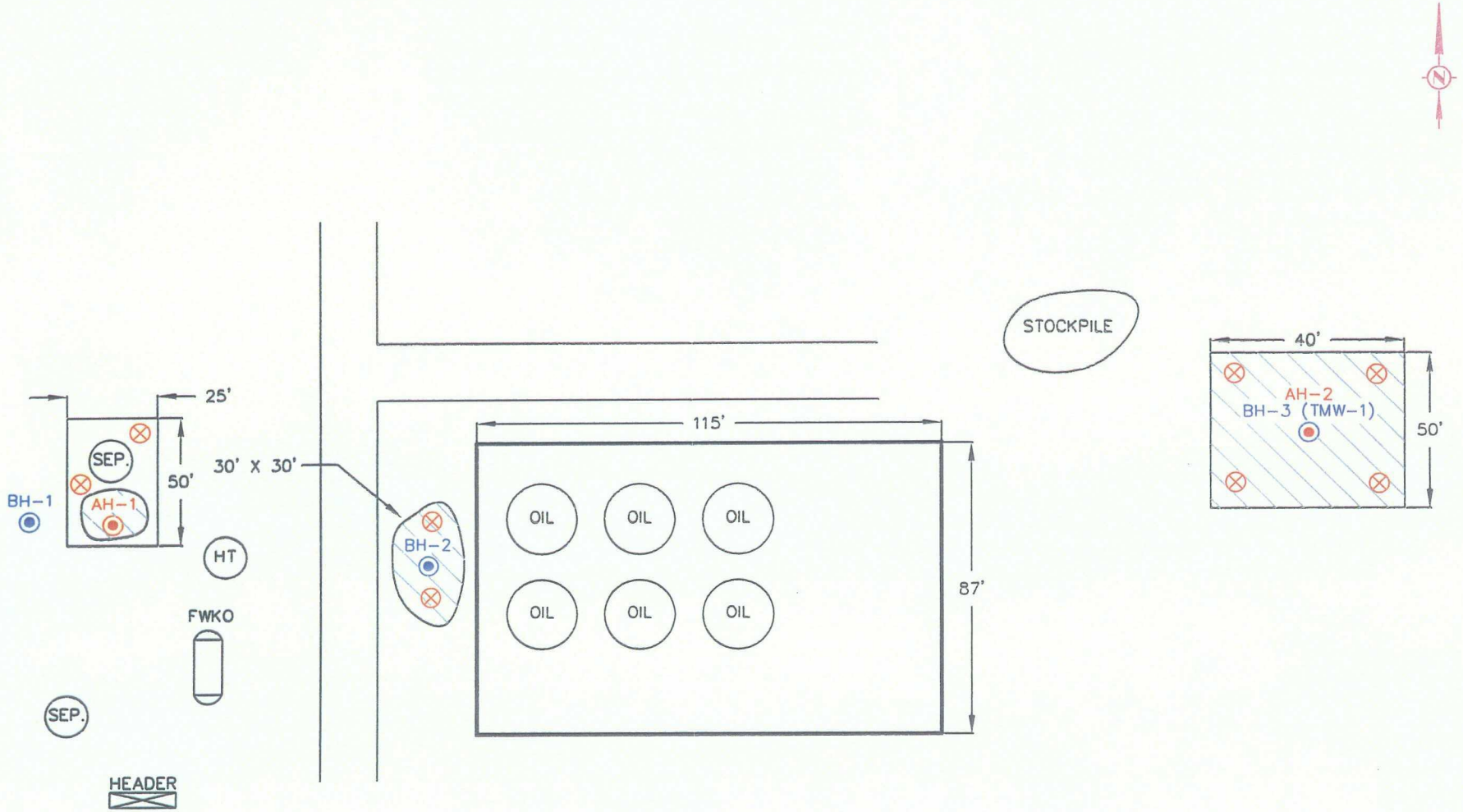


FIGURE NO.1
LEA COUTNY, NM
LATIGO PETROLEUM, INC.
TOPOGRAPHIC MAP

Scale 1 : 24,000
1" = 2000 ft

0 600 1200 1800 2400 3000 ft
0 200 400 600 800 1000 m

TN
MN
8.6°E



BORE HOLE
SPILL AREA
SAMPLE LOCATIONS

NOT TO SCALE

FIGURE NO. 2

LEA COUNTY, NEW MEXICO

LATIGO PETROLEUM, INC.
HILL E.C. B-D TB

DATE: 9/28/06
DWN. BY: JJ
FILE: C:\POOO\2617\E.C. HILL FED. B-D TB

HIGHLANDER ENVIRONMENTAL CORP.
MIDLAND, TEXAS

TABLES

Table 1
Pogo Producing Company
E.C. HILL B-D 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					
AH-1	8/9/2006	0-1	**1460**	**27300**	**28760**	**1.93**	**5.59**	**18.4**	**40.8**	<50
	8/9/2006	1-1.5	**1360**	**27200**	**28560**	-	-	-	-	<50
	8/9/2006	2-2.5	**1790**	**17700**	**19490**	**0.711**	**4.61**	**21.8**	**52.0**	<50
	8/9/2006	4-4.5	**2150**	**11700**	**13850**	**2.04**	**7.87**	**34.7**	**89.8**	<200
	8/9/2006	6-6.5	**5.55**	**157**	**162.55**	-	-	-	-	**319**
	8/9/2006	8-8.5	**432**	**2300**	**2732**	-	-	-	-	<200
	8/9/2006	10-10.5	**194**	**1280**	**1474**	<0.200	<0.200	**0.946**	**1.55**	378
AH-2	8/9/2006	0-1	**42**	**1240**	**1282**	<0.200	<0.200	<0.200	<0.200	<50
	8/9/2006	1-1.5	<20.0	**730**	**730**	-	-	-	-	<200
	8/9/2006	2-2.5	**920**	**38400**	**39320**	**0.880**	<.200	**6.14**	**15.2**	<200
	8/9/2006	4-4.5	**159**	**963**	**1122**	<.200	<.200	**0.479**	**0.376**	<50
	8/9/2006	6-6.5	**219**	**510**	**729**	-	-	-	-	<50
	8/9/2006	8-8.5	**214**	**1660**	**1874**	-	-	-	-	<50
	8/9/2006	10-10.5	**339**	**4330**	**4669**	**0.749**	<.200	**3.46**	**8.99**	<50
AH-3	10/26/2007	0-1	**4.85**	**1600**	**1604.85**	-	-	-	-	-
	10/26/2007	2-2.5	**2.56**	**84.80**	**87.36**	-	-	-	-	-
	10/26/2007	4-4.5	**339**	**1840**	**2179**	-	-	-	-	-
	10/26/2007	6-6.5	**3330**	**3980**	**7310**	-	-	-	-	-
	10/26/2007	8-8.5	**298**	**2560**	**2858**	-	-	-	-	-
AH-4	10/26/2007	0-1	**6.09**	<50.0	**6.09**	-	-	-	-	-
	10/26/2007	2-2.5	**4.41**	**1740**	**1744.41**	-	-	-	-	-

	10/26/2007	4-4.5	**96.70**	**1300**	**1396.70**	-	-	-	-	-
	10/26/2007	6-6.5	**339**	**1180**	**1519**	-	-	-	-	-
AH-5	10/26/2007	0-1	**6.05**	<50.0	**6.05**	-	-	-	-	-
	10/26/2007	1-1.5	**2.06**	<50.0	**2.06**	-	-	-	-	-
AH-6	10/26/2007	0-1	**1.39**	<50.0	**1.39**	-	-	-	-	-
	10/26/2007	1-1.5	**1.04**	<50.0	**1.04**	-	-	-	-	-
AH-7	10/26/2007	0-1	**18.30**	**5420**	**5438.30**	-	-	-	-	-
	10/26/2007	2-2.5	<1.00	<50.0	<50.0	-	-	-	-	-
	10/26/2007	4-4.5	<1.00	<50.0	<50.0	-	-	-	-	-
AH-8	10/26/2007	0-1	**164**	**8850**	**9014**	-	-	-	-	-
	10/26/2007	2-2.5	**289**	**10700**	**10989**	-	-	-	-	-
	10/26/2007	4-4.5	**128**	**4310**	**4438**	-	-	-	-	-
	10/26/2007	6-6.5	**9.88**	<50.0	**9.88**	-	-	-	-	-
	10/26/2007	8-8.5	**1.21**	<50.0	**1.21**	-	-	-	-	-
	10/26/2007	10-10.5	<1.00	<50.0	<50.0	-	-	-	-	-
AH-9	10/30/2007	0-1	**91.80**	**11200**	**11291.80**	-	-	-	-	-
	10/30/2007	2-2.5	**68.40**	**81.40**	**149.80**	-	-	-	-	-
	10/30/2007	4-4.5	**1.43**	<50.0	**1.43**	-	-	-	-	-
	10/30/2007	6-6.5	<1.00	<50.0	<50.0	-	-	-	-	-
	10/30/2007	8-8.5	<1.00	<50.0	<50.0	-	-	-	-	-
	10/30/2007	10-10.5	<1.00	<50.0	<50.0	-	-	-	-	-
AH-10	10/30/2007	0-1	<5.00	**2330**	**2330**	-	-	-	-	-
	10/30/2007	2-2.5	**95.30**	**6590**	**6685.30**	-	-	-	-	-
	10/30/2007	4-4.5	<1.00	<50.0	<50.0	-	-	-	-	-
	10/30/2007	6-6.5	<1.00	<50.0	<50.0	-	-	-	-	-

	10/30/2007	8-8.5	<1.00	<50.0	<50.0	-	-	-	-	-
	10/30/2007	10-10.5	<1.00	<50.0	<50.0	-	-	-	-	-
Stockpile #1	8/9/2006	N/A	**38.2**	**120**	**158.2**	<0.200	<0.200	<0.200	<0.200	<50
Stockpile #2	8/9/2006	N/A	<20.0	**6700**	**6700**	<0.200	<0.200	<0.200	**0.210**	<50

(-) not analyzed

Table 2
Pogo Producing Company
E.C. HILL B-D 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					
BH-1	9/11/2006	10-12'	**623**	**3250**	**3873**	<0.200	<0.200	**4.56**	**9.28**	-
	9/11/2006	15-17'	**512**	**387**	**899**	<0.200	<0.200	**5.36**	**10.4**	-
	9/11/2006	20-22'	**303**	**920**	**1223**	-	-	-	-	-
	9/11/2006	25-27'	**25.3**	<50.0	**25.3**	-	-	-	-	-
BH-2	9/11/2006	0-2'	**294**	**10400**	**10694**	**1.33**	<0.200	**5.66**	**5.84**	<200
	9/11/2006	3-5'	**589**	**1070**	**1659**	**1.39**	<0.200	**7.02**	**9.61**	<200
	9/11/2006	5-7'	**220**	**841**	**1061**	-	-	-	-	<200
	9/11/2006	10-12'	**224**	**532**	**756**	<0.200	<0.200	**1.42**	**2.33**	<200
	9/11/2006	15-17'	**34.1**	<50.0	**34.1**	<0.200	<0.200	<0.200	**0.357**	<200
	9/11/2006	20-22'	<20.0	<50.0	<50.0	-	-	-	-	**278**
	9/11/2006	30-32'	<20.0	<50.0	<50.0	-	-	-	-	<200
BH-3	9/12/2006	10-12'	**465**	**2590**	**3055**	<0.200	<0.200	**3.14**	**6.13**	-
	9/12/2006	15-17'	**497**	**4670**	**5167**	**0.295**	<0.200	**3.59**	**6.74**	-
	9/12/2006	20-22'	**479**	**2090**	**2569**	<0.200	<0.200	**1.51**	**4.80**	-
	9/12/2006	30-32'	**261**	**3350**	**3611**	<0.200	<0.200	**0.454**	**0.962**	-
	9/12/2006	40-42'	**262**	**3250**	**3512**	<0.200	<0.200	<0.200	**0.419**	-
	9/12/2006	50-52'	**46.0**	**1090**	**1136**	<0.200	<0.200	<0.200	**0.290**	-
	9/12/2006	60-62'	<20.0	<50.0	<50.0	<0.200	<0.200	<0.200	**0.246**	-

(-) not analyzed

Table 3
Pogo Producing Company
E.C. HILL B-D TANK BATTERY
Lea County, New Mexico

Sample ID	Date Sampled	Sample Number	TPH (mg/kg)			Benzene (mg/L)	Toluene (mg/L)	Ethlybenzene (mg/L)	Xylene (mg/L)	Chloride (mg/L)
			C6-C12	C12-C35	Total					
TMW-1	9/22/2006	104310	-	-	-	<0.00100	<0.00100	<0.00100	<0.00100	**1150**
	5/16/2007	-	-	-	-	<0.00100	<0.00100	<0.00100	<0.00100	**729**

(-) not analyzed

SAMPLE LOG

SAMPLE LOG

Boring/Well: MW-1
Project Number: 2617
Client: Pogo Production Inc.
Site Location: Hill BD
Location: Lea County, New Mexico
Total Depth 98
Date Installed: 09/20/06

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	--	Dark black hydrocarbon stained soil
5-10	--	Dark black hydrocarbon stained soil
10-15	--	Dark black hydrocarbon stained soil
17-20	--	Brown/dark brown silty very fine grain sand with some staining
30-35	--	Reddish brown very fine grain silty sand with no staining but strong odor
35-40	--	Reddish brown very fine grain silty sand with no staining but strong odor
40-45	--	Brown very fine grain silty sand with no staining but strong odor
45-50	--	Tan sandstone very hard at 46 feet
50-55	--	Very hard sandstone
55-60	--	Buff silty very fine grain sand with sandstone
60-65	--	Buff silty very fine grain sand with sandstone
65-70	--	Tan very fine grain silty sand
70-75	--	Tan very fine grain silty sand
75-78	--	Tan very fine grain silty sand (wet at 78)
80-85	--	Light brown silty very fine grain sand (wet)
85-90	--	Light brown silty very fine grain sand (wet)
90-98	--	Light brown silty very fine grain sand (wet)

Total Depth is 98 feet Groundwater encountered at 78 feet below ground surface.

SAMPLE LOG

Boring/Well: MW-1
Project Number: 2617
Client: Pogo Production Inc.
Site Location: Hill Federal #7 Tank Battery
Location: Lea County, New Mexico
Total Depth 93
Date Installed: 09/21/06

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	--	Dark brown silty sand
5-6	--	Black silty sand
6-10	--	Black and gray silty sand
10-15	--	Gray silty sand
15-20	--	Tan/gray silty fine grain sand
20-25	--	Tan/brown silty fine grain sand
25-30	--	Tan/brown silty fine grain sand
30-35	--	Tan/brown silty fine grain sand with hard stringer
35-40	--	Tan/reddish tan very fine grain sand
40-55	--	Tan sand with sandstone
55-65	--	Tan sand with sandstone
65-70	--	Tan/gray silty fine grain sand
70-75	--	Tan silty very fine grain sand
75-93	--	Tan silty very fine grain sand

Total Depth is 93 feet Groundwater encountered at 78 feet below ground surface.

SAMPLE LOG

Boring/Well: MW-2
Project Number: 2617
Client: Pogo Production Inc.
Site Location: BD and Tank Battery Federal #7
Location: Lea County, New Mexico
Total Depth 90
Date Installed: 12/04/07

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	--	Tan fine grain sand
5-10	--	Tan fine grain sand
10-15	--	White limestone with sand intermixed
15-20	--	White limestone with sand intermixed
20-25	--	Tan fine grain sand (loose sugar sand)
25-30	--	Tan fine grain sand (loose sugar sand)
30-35	--	Tan fine grain sand (loose sugar sand)
35-40	--	Tan fine grain sand (loose sugar sand)
40-45	--	Tan fine grain sand (loose sugar sand)
45-50	--	Tan fine grain sand with some sandstone intermixed
50-55	--	Tan fine grain sand with some white limestone
55-60	--	Tan fine grain sand with some white limestone
60-65	--	Tan fine grain sand with sandstone intermixed (loose)
65-70	--	Tan fine grain sand with sandstone intermixed (loose)
70-75	--	Tan fine grain sand with sandstone intermixed (loose)
75-80	--	Tan fine grain sand with sandstone intermixed (loose)
80-85	--	Tan fine grain sand with sandstone intermixed (loose)
85-90	--	Tan fine grain sand with sandstone intermixed (loose)

Total Depth is 90 feet Groundwater encountered at 80 feet below ground surface.

SAMPLE LOG

Boring/Well: MW-3
Project Number: 2617
Client: Pogo Production Inc.
Site Location: BD and Tank Battery Federal #7
Location: Lea County, New Mexico
Total Depth 90
Date Installed: 12/04/07

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	--	Brown fine to medium grain sand
5-10	--	White limestone with fine grain sand (loose)
10-15	--	Tan fine grain sand (blow sand, loose)
15-20	--	Tan fine grain sand (blow sand, loose)
20-25	--	Tan fine grain sand (blow sand, loose)
25-30	--	Tan fine grain sand (blow sand, loose)
30-35	--	Tan fine grain reddish sand
35-40	--	Tan fine grain reddish sand
40-45	--	Tan fine grain reddish sand
45-50	--	Tan fine grain reddish sand
50-55	--	Light tan/white sand with limestone intermixed with some sandstone
55-60	--	Light tan/white sand with limestone intermixed with some sandstone
60-65	--	Tan sand with some gravel and sandstone intermixed
65-70	--	Tan sand with some gravel and sandstone intermixed
70-75	--	Tan sand with some gravel and sandstone intermixed
75-80	--	Tan sand with some gravel and sandstone intermixed
80-85	--	Tan sand with some gravel and sandstone intermixed
85-90	--	Tan sand with some gravel and sandstone intermixed
90-95	--	Tan sand with some gravel and sandstone intermixed

Total Depth is 95 feet Groundwater encountered at 80 feet below ground surface.

SAMPLE LOG

Boring/Well: MW-4
Project Number: 2617
Client: Pogo Production Inc.
Site Location: BD and Tank Battery Federal #7
Location: Lea County, New Mexico
Total Depth 95
Date Installed: 12/05/07

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	--	Tan/brown well sorted medium grain sand
5-10	--	Tan/brown well sorted medium grain sand
10-15	--	Buff fine grain calcareous sand
15-20	--	Tan/buff slightly calcareous medium grain sand
20-25	--	Tan/brown well sorted medium grain sand
25-30	--	Tan/brown medium grain sand (beach sand)
30-35	--	Tan/brown medium grain sand (beach sand)
35-40	--	Tan/brown medium grain sand intermixed with some limestone
40-45	--	Tan medium grain sand with some limestone intermixed
45-50	--	Tan medium grain sand with some limestone intermixed
50-55	--	Tan fine grain well sorted sand
55-60	--	Tan fine grain well sorted sand
60-65	--	Tan fine grain well sorted sand
65-70	--	Tan fine grain well sorted sand
70-75	--	Tan fine grain well sorted sand
75-80	--	Tan fine grain well sorted sand
80-85	--	Tan fine grain well sorted sand
85-90	--	Tan fine grain well sorted sand
90-95	--	Tan fine grain well sorted sand

Total Depth is 95 feet Groundwater encountered at 85 feet below ground surface.

SAMPLE LOG

Boring/Well: MW-5
Project Number: 2617
Client: Pogo Production Inc.
Site Location: BD and Tank Battery Federal #7
Location: Lea County, New Mexico
Total Depth 92.5
Date Installed: 12/05/07

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	--	Tan/brown well sorted medium grain sand
5-10	--	Tan/brown well sorted medium grain sand
10-15	--	Buff fine grain sandy limestone
15-20	--	Tan/buff medium grain sand
20-25	--	Tan medium grain calcareous sand
25-30	--	Tan/brown medium grain sand (beach sand)
30-35	--	Tan/brown medium grain sand (beach sand)
35-40	--	Tan/brown medium grain sand (beach sand)
40-45	--	Tan/brown medium grain sand (beach sand)
45-50	--	Tan/brown medium grain sand with limestone intermixed
50-55	--	Tan/brown medium grain sand
55-60	--	Tan/brown medium grain sand (beach sand)
60-65	--	Tan/brown medium grain sand (beach sand)
65-70	--	Tan/brown medium grain sand (beach sand)
70-75	--	Tan/brown medium grain sand (beach sand)
75-80	--	Tan/brown medium grain sand (beach sand)
80-85	--	Tan/brown medium grain sand (beach sand)
85-90	--	Tan/brown medium grain sand (beach sand)
90-95	--	Tan/brown medium grain sand (beach sand)

Total Depth is 95 feet Groundwater encountered at 83 feet below ground surface.

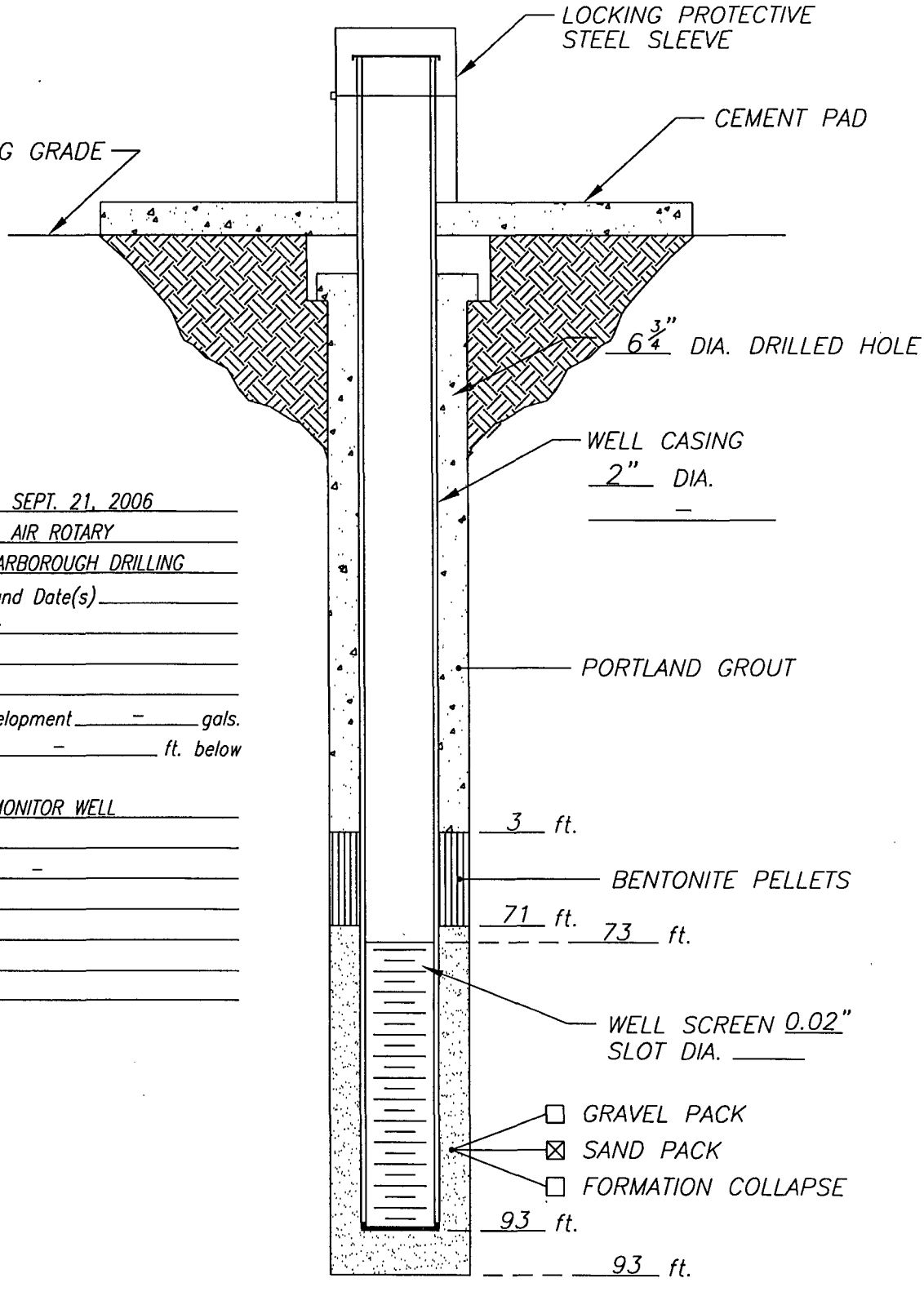
SAMPLE LOG

Boring/Well: MW-6
Project Number: 2617
Client: Pogo Production Inc.
Site Location: BD and Tank Battery Federal #7
Location: Lea County, New Mexico
Total Depth 93
Date Installed: 12/11/07

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	--	Tan/brown fine to medium grain sand
5-10	--	Brown medium grain sand
10-15	--	Buff/tan calcareous sand (50/50)
15-20	--	Tan/buff calcareous sand (60S/40L)
20-25	--	Buff/tan calcareous sand (50/50)
25-30	--	Tan fine grain sand (beach sand)
30-35	--	Tan fine grain sand (beach sand)
35-40	--	Tan fine grain sand (beach sand)
40-45	--	Tan fine grain sand (beach sand)
45-50	--	Buff/tan calcareous sand (60S/40L)
50-55	--	Buff/tan calcareous sand (60S/40L)
55-60	--	Buff/tan calcareous sand (60S/40L)
60-65	--	Buff/tan calcareous sand with sandstone intermixed
65-70	--	Buff/tan calcareous sand with sandstone intermixed
70-75	--	Tan/brown to buff calcareous sand
75-80	--	Yellow calcareous medium grain sand
80-85	--	Tan fine grain sand
85-90	--	Tan fine grain sand
90-95	--	Tan fine grain sand

Total Depth is 95 feet Groundwater encountered at 86 feet below ground surface.

WELL CONSTRUCTION LOG



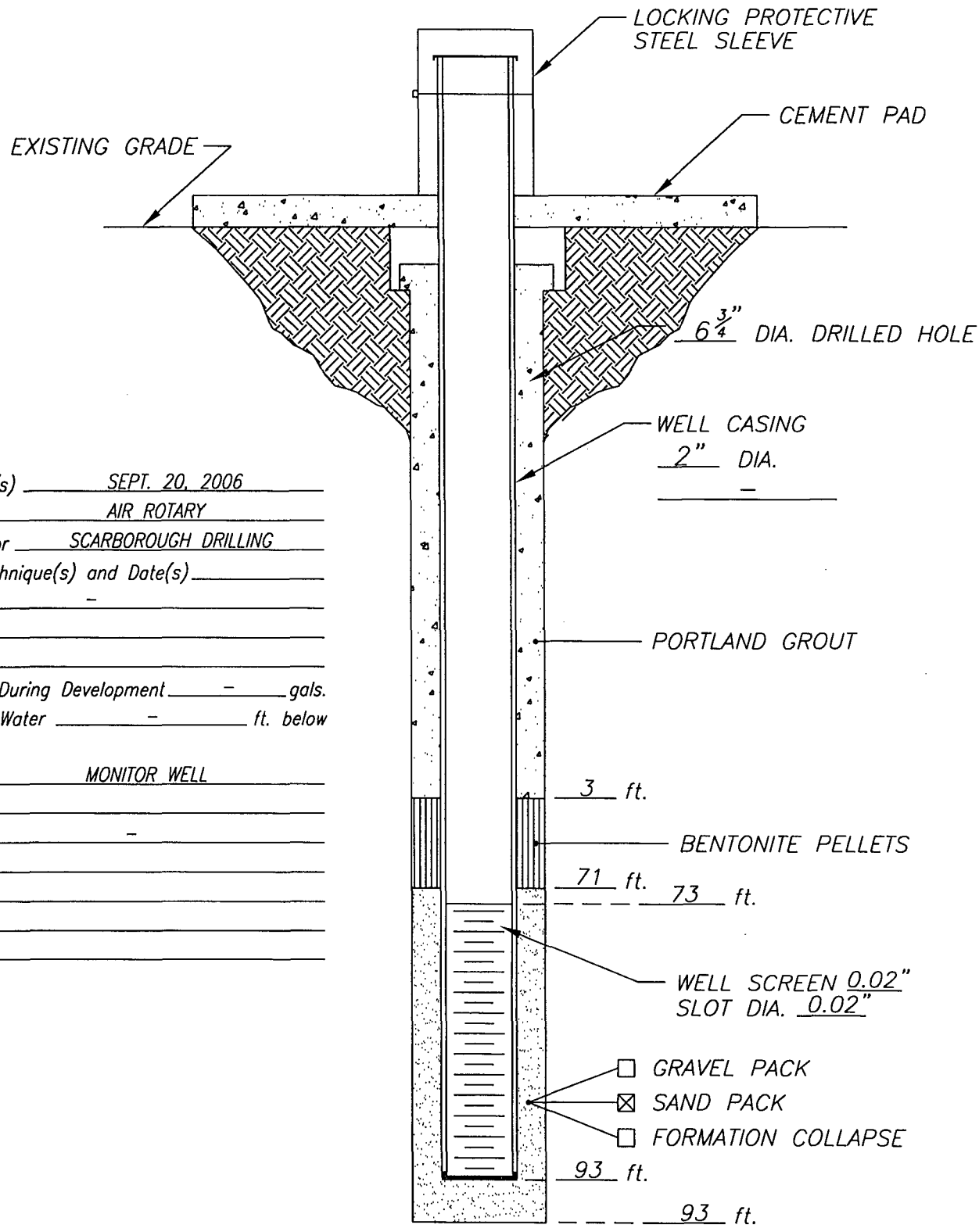
Installation Date(s) SEPT. 21, 2006
Drilling Method AIR ROTARY
Drilling Contractor SCARBOROUGH DRILLING
Development Technique(s) and Date(s) –

Water Removed During Development – gals.
Static Depth to Water – ft. below Ground Level
Well Purpose MONITOR WELL

Remarks –

DATE: SEPT. 21, 2006 *Highlander Environmental*	CLIENT: *POGO PRODUCING INC* PROJECT: *TEAGUE FIELD, POGO.BD + FED #7 TB* LOCATION: *LEA CO, NM*	WELL NO. MW-1

WELL CONSTRUCTION LOG



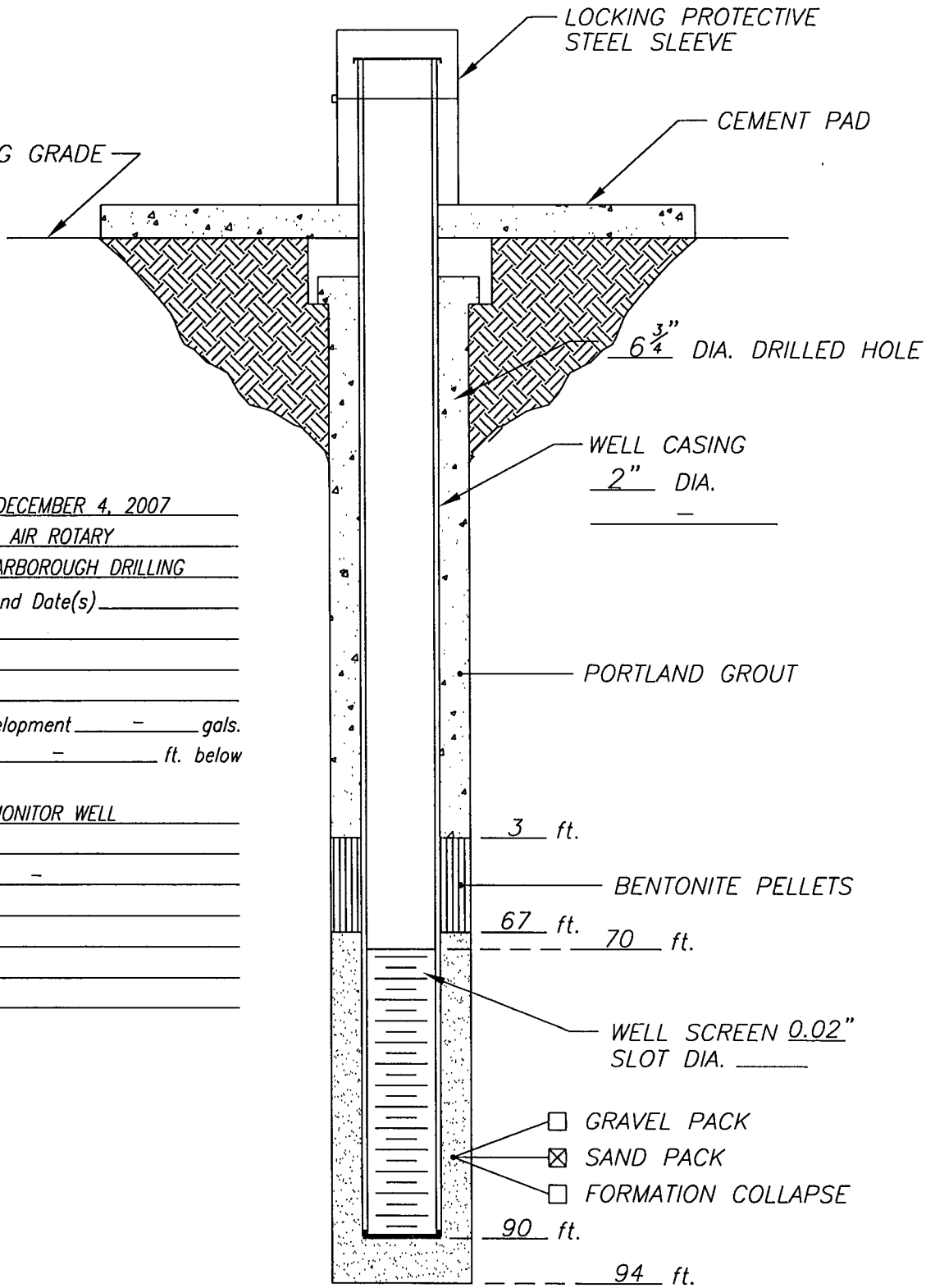
Installation Date(s) SEPT. 20, 2006
Drilling Method AIR ROTARY
Drilling Contractor SCARBOROUGH DRILLING
Development Technique(s) and Date(s) –

Water Removed During Development – gals.
Static Depth to Water – ft. below Ground Level
Well Purpose MONITOR WELL

Remarks –

DATE: SEPT. 20, 2006	CLIENT: POGO PRODUCING INC	WELL NO.
Highlander Environmental	PROJECT: HILL BD	MW-1
	LOCATION: LEA CO, NM	

WELL CONSTRUCTION LOG



Installation Date(s) DECEMBER 4, 2007

Drilling Method AIR ROTARY

Drilling Contractor SCARBOROUGH DRILLING

Development Technique(s) and Date(s) –

Water Removed During Development – gals.

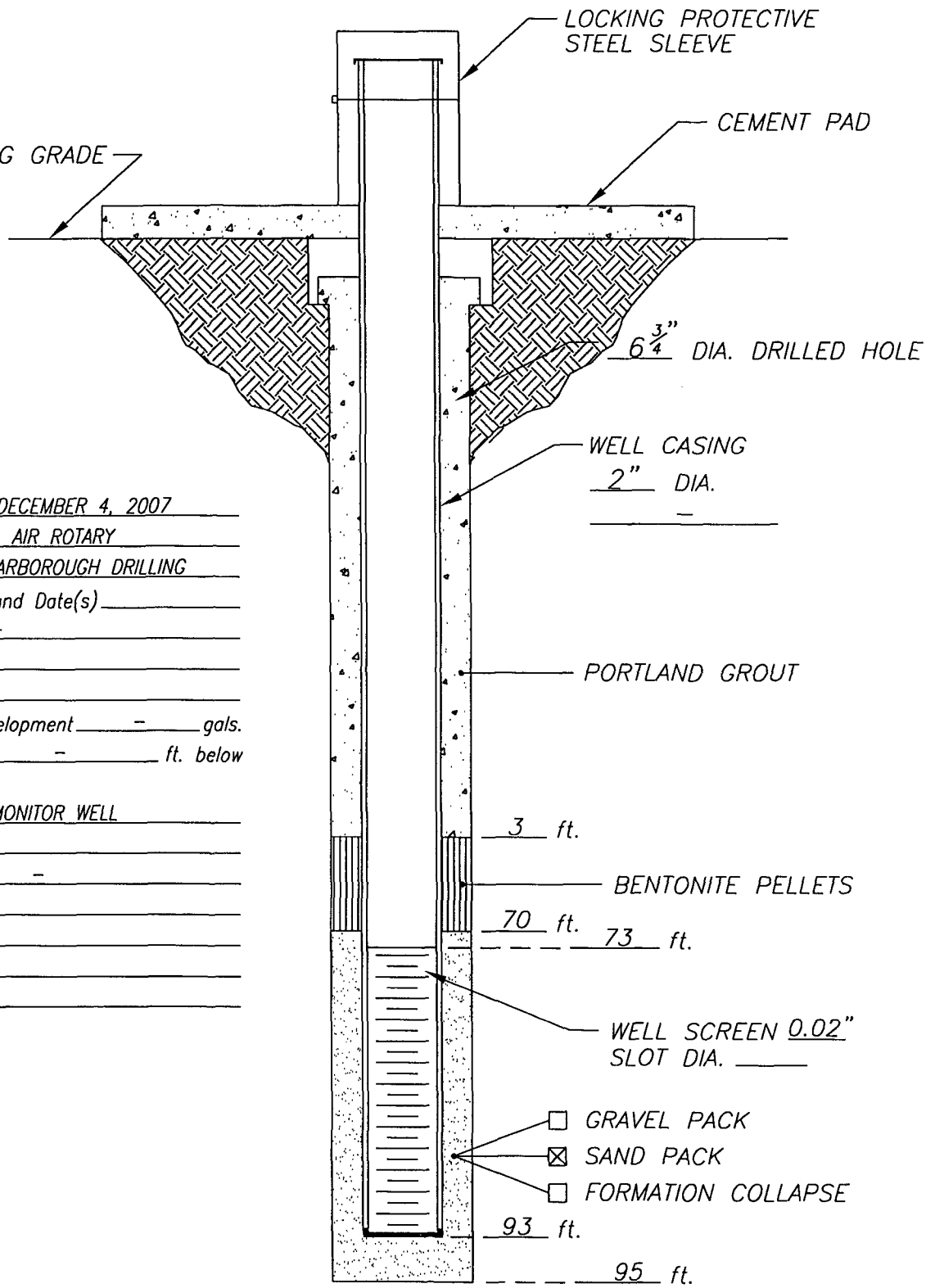
Static Depth to Water – ft. below Ground Level

Well Purpose MONITOR WELL

Remarks –

DATE: 12/10/07	CLIENT: POGO PRODUCING INC	WELL NO.
Highlander Environmental	PROJECT: TEAGUE FIELD, POGO.BD + FED #7 TB	MW-2
	LOCATION: LEA CO, NM	

WELL CONSTRUCTION LOG



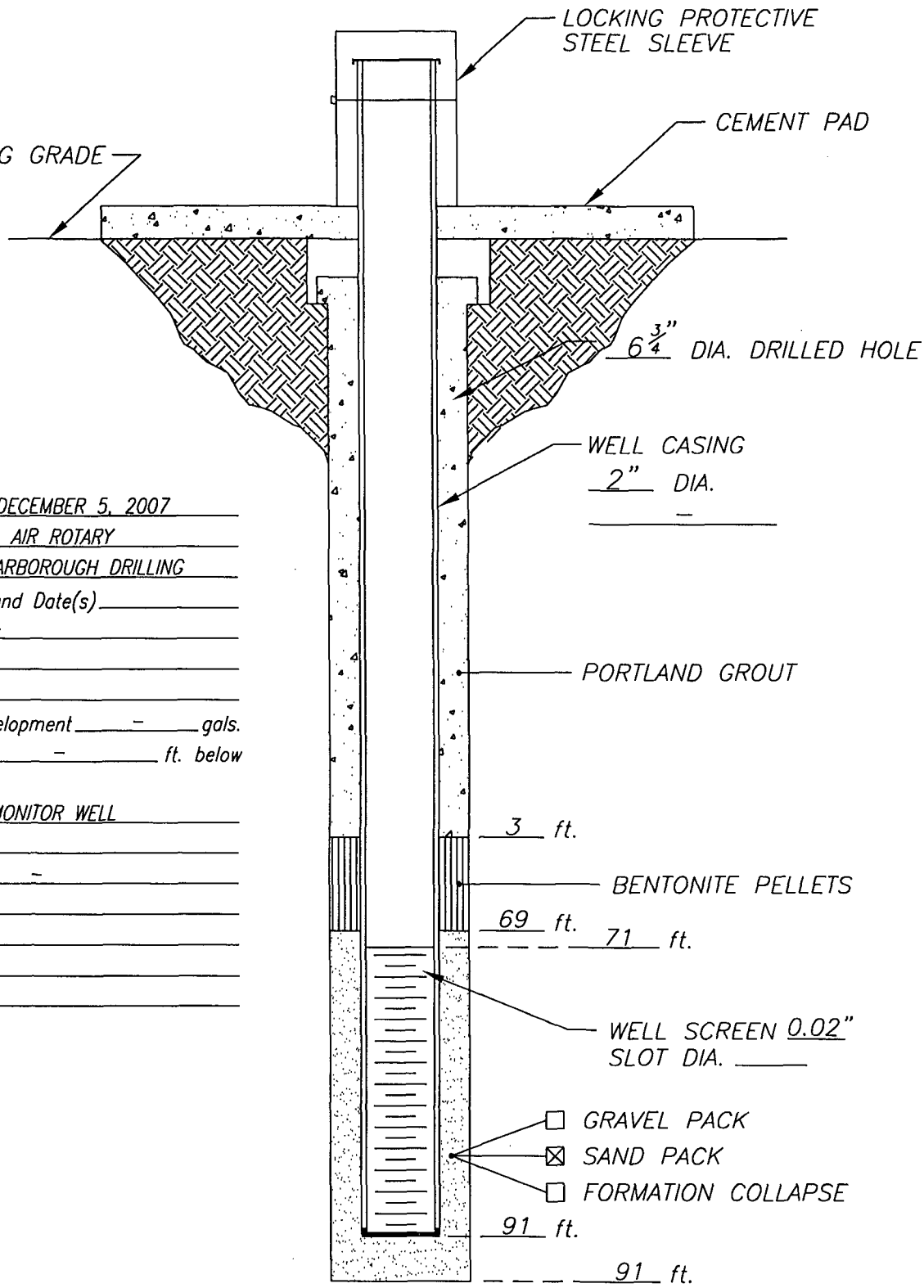
Installation Date(s) DECEMBER 4, 2007
Drilling Method AIR ROTARY
Drilling Contractor SCARBOROUGH DRILLING
Development Technique(s) and Date(s) –

Water Removed During Development – gals.
Static Depth to Water – ft. below Ground Level
Well Purpose MONITOR WELL

Remarks –

DATE: 12/10/07	CLIENT: POGO PRODUCING INC	WELL NO.
Highlander Environmental	PROJECT: TEAGUE FIELD, POGO.BD + FED #7 TB	MW-3
	LOCATION: LEA CO, NM	

WELL CONSTRUCTION LOG



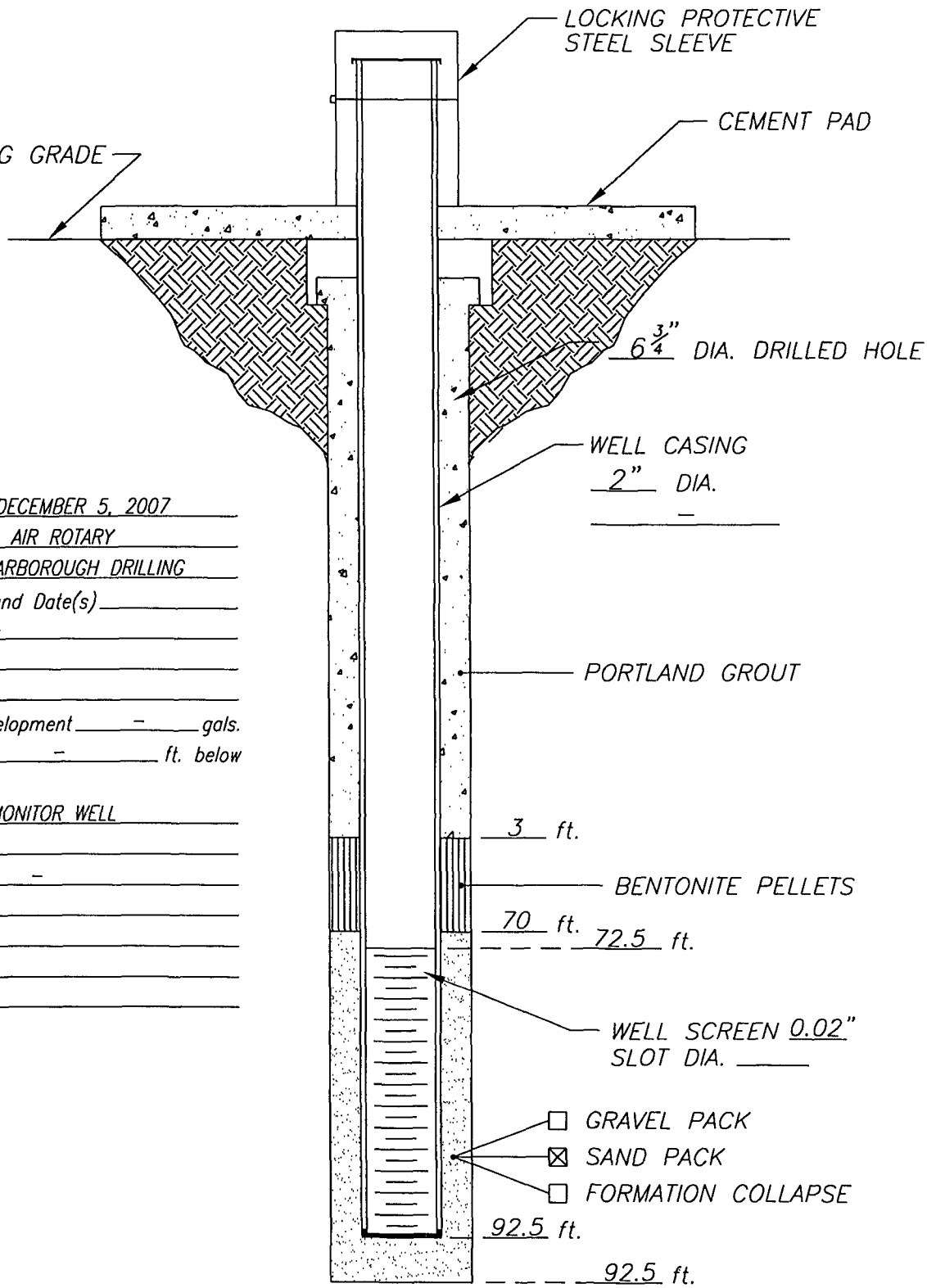
Installation Date(s) DECEMBER 5, 2007
Drilling Method AIR ROTARY
Drilling Contractor SCARBOROUGH DRILLING
Development Technique(s) and Date(s) –

Water Removed During Development – gals.
Static Depth to Water – ft. below Ground Level
Well Purpose MONITOR WELL

Remarks –

DATE: 12/10/07 *Highlander Environmental*	CLIENT: *POGO PRODUCING INC* PROJECT: *TEAGUE FIELD, POGO.BD + FED #7 TB* LOCATION: *LEA CO, NM*	WELL NO. MW-4

WELL CONSTRUCTION LOG



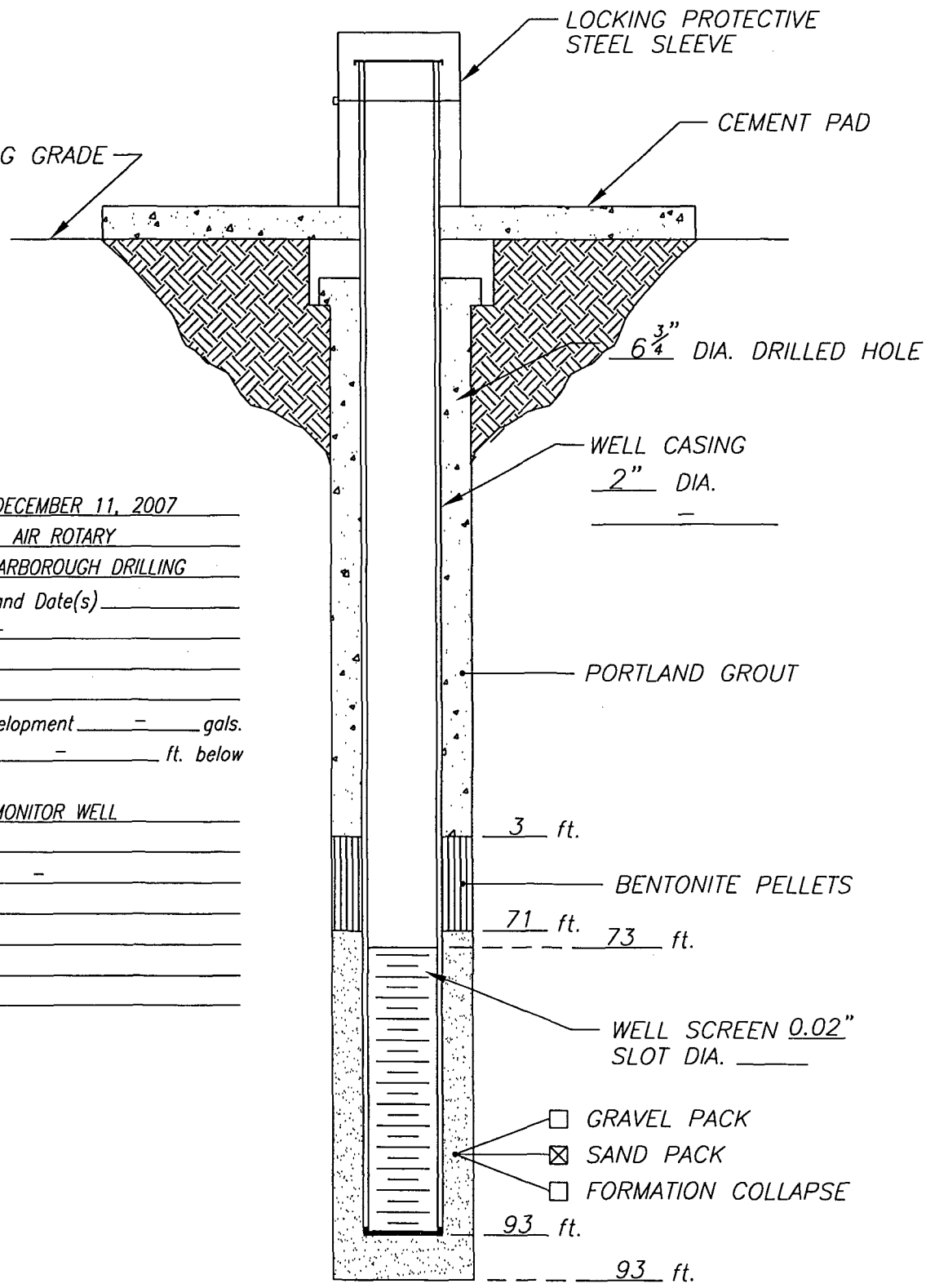
Installation Date(s) DECEMBER 5, 2007
Drilling Method AIR ROTARY
Drilling Contractor SCARBOROUGH DRILLING
Development Technique(s) and Date(s) –

Water Removed During Development – gals.
Static Depth to Water – ft. below Ground Level
Well Purpose MONITOR WELL

Remarks –

DATE: 12/10/07	CLIENT: POGO PRODUCING INC	WELL NO.
Highlander Environmental	PROJECT: TEAGUE FIELD, POGO.BD + FED #7 TB	MW-5
	LOCATION: LEA CO, NM	

WELL CONSTRUCTION LOG



Installation Date(s) DECEMBER 11, 2007
Drilling Method AIR ROTARY
Drilling Contractor SCARBOROUGH DRILLING
Development Technique(s) and Date(s) –

Water Removed During Development – gals.
Static Depth to Water – ft. below Ground Level
Well Purpose MONITOR WELL

Remarks –

DATE: 12/11/07	CLIENT: POGO PRODUCING INC	WELL NO.
Highlander Environmental	PROJECT: TEAGUE FIELD, POGO.BD + FED #7 TB	MW-6
	LOCATION: LEA CO, NM	

Highlander Environmental Corp.

Midland, Texas

CERTIFIED MAIL
RETURN RECIEPT NO. 7005 1160 0005 3780 6047

June 25, 2007

Mr. Wayne Price
New Mexico Energy, Minerals, & Natural Resources
Oil Conservation Division, Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, New Mexico 87504

RE: NOTIFICATION OF GROUNDWATER IMPACT
HILL, E. C. B-D TANK BATTERY
SEC. 34 AND 35, T23S, R37E
LEA COUNTY, NEW MEXICO

Mr. Price:

On behalf of Latigo Petroleum, Inc. (Latigo), Highlander Environmental Corp. (Highlander) notifies the Director of the New Mexico Oil Conservation Division (OCD), Environmental Bureau of groundwater impact at the above-referenced site in accordance with NM Rule 116.

Highlander of Midland, Texas was engaged to investigate this site. Highlander installed three soil borings at the site. The soils were found to be impacted from the surface to the vadose zone in one of the three soil borings with TPH which exceeds state regulated levels for soils. Based on the results of the field sampling, the one soil boring impacted to the vadose zone was converted to a temporary 2-inch monitor well. Groundwater was encountered at approximately 64 feet below ground surface (bgs). After appropriate development, the well was sampled pursuant to OCD guidelines by Highlander and submitted to Environmental Lab of Texas for analysis of chlorides and BTEX. Chloride concentrations exceed New Mexico Water Quality Control Commission (NMWQCC) standards. No hydrocarbon constituents (BTEX) were detected above reporting limits. Highlander will present a remedy for this site in the submission of a Corrective Action Plan.

Please accept this notification for the above-referenced site. Should you have any questions or concerns regarding this site, please do not hesitate to contact me at (432) 682-4559.

Highlander Environmental Corp.

Timothy M. Reed, P.G.
Vice President

STATE OF TEXAS
TIMOTHY M. REED
GEOLOGY
2038
LICENSED
PROFESSIONAL GEOSCIENTIST

cc: Mr. Glenn von Gonten – NMOCD, Santa Fe
Mr. Chris Johnson – NMOCD, Hobbs

1910 N. Big Spring • Midland, Texas 79705 • (432) 682-4559 • Fax (432) 682-3946