

# CLOSURE REPORT

**PRONGHORN STATE #1**

**EPI REF: #160050**

**NMOCD: 1RP#809**

**UL-G (SW¼ OF THE NE¼) OF SECTION 34, T 23 S, R 34 E**

**~6 MILES NORTHWEST OF OCHOA,**

**LEA COUNTY, NEW MEXICO**

**LATITUDE: N 32° 15' 46.45"**

**LONGITUDE: W 103° 27' 20.87"**

**JANUARY 2008**

***PREPARED BY:***

**ENVIRONMENTAL PLUS, INC.**

**2100 AVENUE O**

**EUNICE, NEW MEXICO 88231**

***PREPARED FOR:***

**Chesapeake**



ENVIRONMENTAL PLUS, INC.  
CONSULTING AND ENVIRONMENTAL REMEDIATION

23 January, 2008

Mr. Larry Johnson  
Environmental Engineer Specialist  
New Mexico Oil Conservation Division  
1625 North French Drive  
Hobbs, New Mexico 88240

RE: **Closure Report**

Chesapeake Operating, Inc.  
Pronghorn State #1  
UL-G (SW ¼ of the NE ¼), Section 34, T 23 S, R 34 E  
Longitude: 32° 15' 46.45"; Latitude: 103° 27' 20.87"  
NMOCD Ref. #1RP-809; EPI Ref. #160050

Dear Mr. Johnson:

Environmental Plus, Inc., (EPI) on behalf of Mr. Bradley Blevins, Chesapeake Operating, Inc., submits this letter *Closure Report* for the above referenced Site.

Activities were initiated to bring the impacted area into conformance with NMOCD requirements. For clarity and cross reference elimination purposes, the following Letter Closure Report offers Site Background history, Site Delineation, Remediation Activities and Conclusion.

**Site Background**

The Site is located in UL-G (SW ¼ of the NE¼), Section 34, T23S, R34E at an elevation of approximately 3,458 feet above mean sea level (amsl) on property owned by Jim Keller. A search for water wells was completed utilizing the New Mexico Office of the State Engineers website and a database maintained by the United States Geological Survey (USGS). No wells (domestic, agriculture or public) or bodies of surface water exist within a 1,000 feet radius of the Site (reference *Figure 2*). Groundwater data indicates the average water depth is approximately 475 feet below ground surface (bgs). Based on available information, it was projected distance between impacted soil and groundwater is approximately 469 vertical feet. Utilizing this information, New Mexico Oil Conservation Division (NMOCD) Remedial Goals for this Site were determined as follows:

Parameter	Remedial Goal
Benzene	10 parts per million
BTEX	50 parts per million
TPH	5,000 parts per million

\* Chloride residuals may not be capable of impacting local groundwater above NMWQCC of 250 mg/L



- A. **Site Delineation** – On January 17, 2006 EPI mobilized at the Site to conduct a site assessment consisting of a GPS surveying and photographing. After initial site assessment, EPI delineated impacted areas on February 1, 2 and 10 via advancement of three (3) soil borings to vertical depths ranging from sixteen (16) feet below ground surface (bgs) to twenty-one (21) feet bgs. Soil boring soil samples were collected initially at two (2) feet bgs and then five (5) foot intervals thereafter. BTEX and TPH constituent concentrations were reported below NMOCD remedial threshold goals. Chloride concentrations ranged from 12.4 mg/Kg (SB-3 @ 15' bgs) to 553 mg/Kg (SB-3 @ 5' bgs). Sulfate concentrations ranged from 19.8 mg/Kg (SB-2 @ 5' bgs) to 1,380 mg/Kg (SB-1 @ 2' bgs) (reference *Table 2*).

On April 3, 2006 soil samples (16 ea.) were collected from the sidewalls and floors of the three (3) excavations. BTEX and sulfate constituent concentrations were reported below NMOCD remedial threshold goals for all samples. TPH concentrations were below remedial goals with exception of soil sample E1-SW-2 @ 1' bgs (12,700 mg/Kg). Chloride concentrations ranged from 19.5 mg/Kg (E1-SW-3 @ 1' bgs) to 6,280 mg/Kg (E3-BH-1 @ 2' bgs) (reference *Table 3* and *Figure 5*).

On May 20, 2006 two (2) soil samples were collected from the sidewall and floor of Excavation #3. BTEX, TPH and sulfate constituent concentrations were not analyzed. Chloride concentrations ranged from 14 mg/Kg to 950 mg/Kg (reference *Table 3* and *Figure 5*).

On May 30, 2006 one (1) soil sample was collected from the sidewall of Excavation #1. BTEX, TPH, chloride and sulfate constituent concentrations were reported below NMOCD remedial threshold goals (reference *Table 3* and *Figure 5*).

- B. **Remedial Activities** - From March 24 through May 24, 2006 approximately 200 yds<sup>3</sup> of impacted soil were removed from Excavations I, II and III comprising an area of ~1,404-ft<sup>2</sup> at depths ranging from 1- to 8-ft bgs. Impacted soil was transported to Sundance Services, Inc. for disposal. From May 25 through June 2, 2006 the excavations were backfilled with caliche (~180 yds<sup>3</sup>) obtained from a State owned caliche pit and pea gravel (~20 tons) purchased from Wallach Concrete, Inc. The disturbed areas were contoured to allow natural drainage.
- C. **Conclusion** - Based on projected groundwater elevation (~475-ft bgs) and with in-situ chloride impacted soil confined to a relatively small area on the production pad, natural attenuation should reduce chloride concentration during vertical migration towards groundwater. Therefore no further action should be required at this site.



Questions, concerns and/or needs for additional technical information should be directed to David P. Duncan at (575) 394-3481 (office), (575) 441-7802 (cellar) or via e-mail at [dduncan@envplus.net](mailto:dduncan@envplus.net). Official communications should be directed to Mr. Bradley Blevins at (575) 391-1462, ext. 6224 (office), (575) 441-0341 (mobile) or via e-mail at [bblevins@chkenergy.com](mailto:bblevins@chkenergy.com). Correspondence should be addressed to:

Mr. Bradley Blevins  
Chesapeake Operating, Inc.  
1616 West Bender  
Hobbs, New Mexico 88240

Sincerely,

Daniel Dominguez  
Environmental Consultant

Cc: Harlan Brown, Chesapeake Energy – Oklahoma City, OK  
Jim Keller, Land Owner, Oakley, Ks.  
File

Encl: Figure 1 – Area Map  
Figure 2 – Site Location Map  
Figure 3 – Site Map  
Figure 4 – Soil Boring Location Map  
Figure 5 – Excavation/Sample Location Map  
Table 1 – Well Data  
Table 2 – Summary of Soil Boring Analytical Results  
Table 3 – Summary of Excavation Soil Sample Analytical Results  
Attachment I – Site Photographs  
Attachment II – Laboratory Analytical Results and Chain-of-Custody Forms  
Attachment III – Soil Boring Logs  
Attachment VI – Information and Metrics  
Initial NMOCD Form C-141  
Final NMOCD Form C-141

## FIGURES

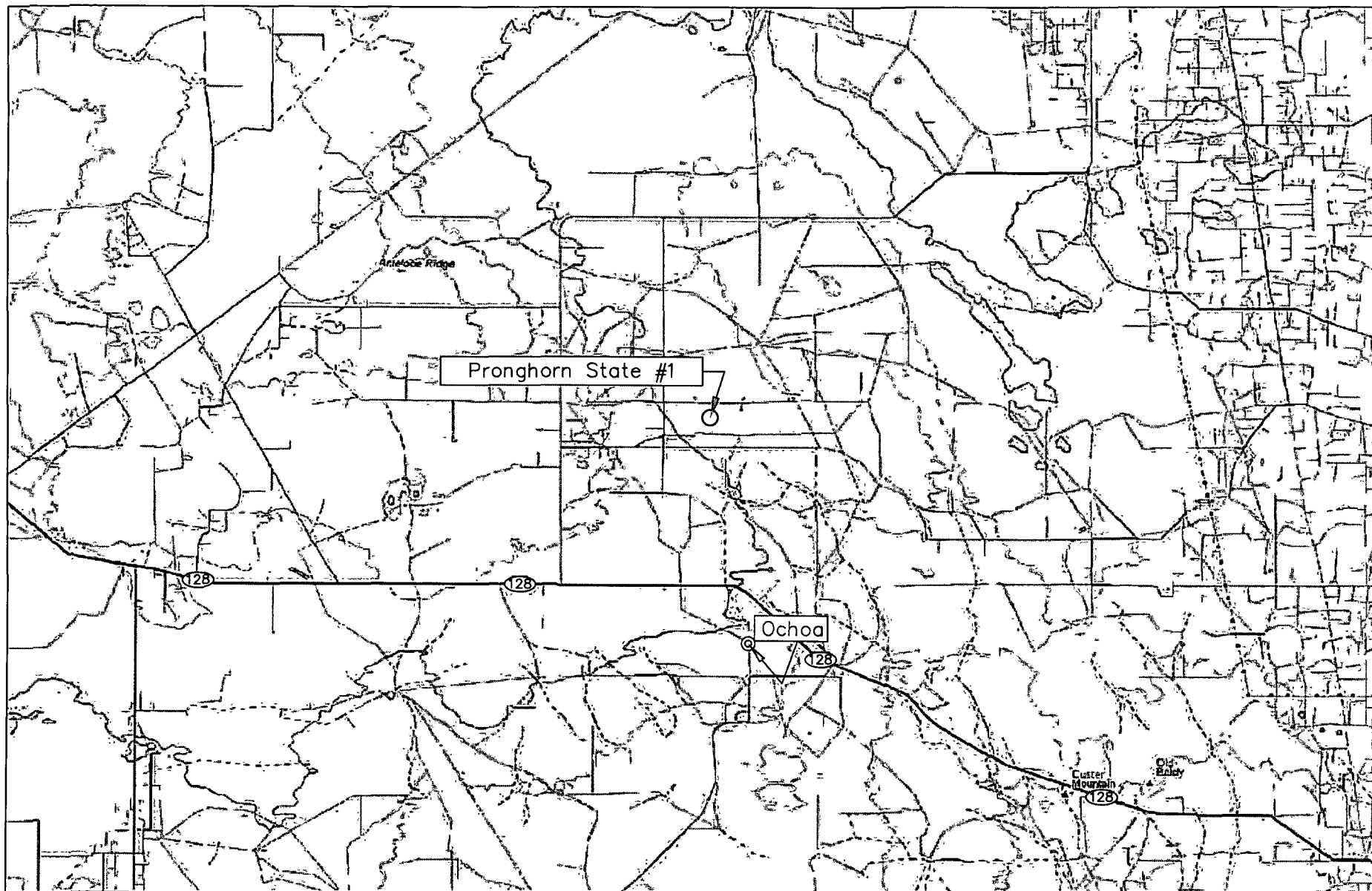
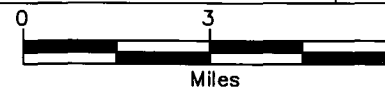


Figure 1  
Area Map  
Chesapeake Energy  
Pronghorn State #1

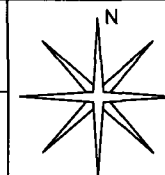
Lea County, New Mexico  
SW 1/4 of the NE 1/4, Sec. 34, T23S, R34E  
N 32°15' 46.45" W 103°27' 20.87"  
Elevation: 3,458 feet amsl

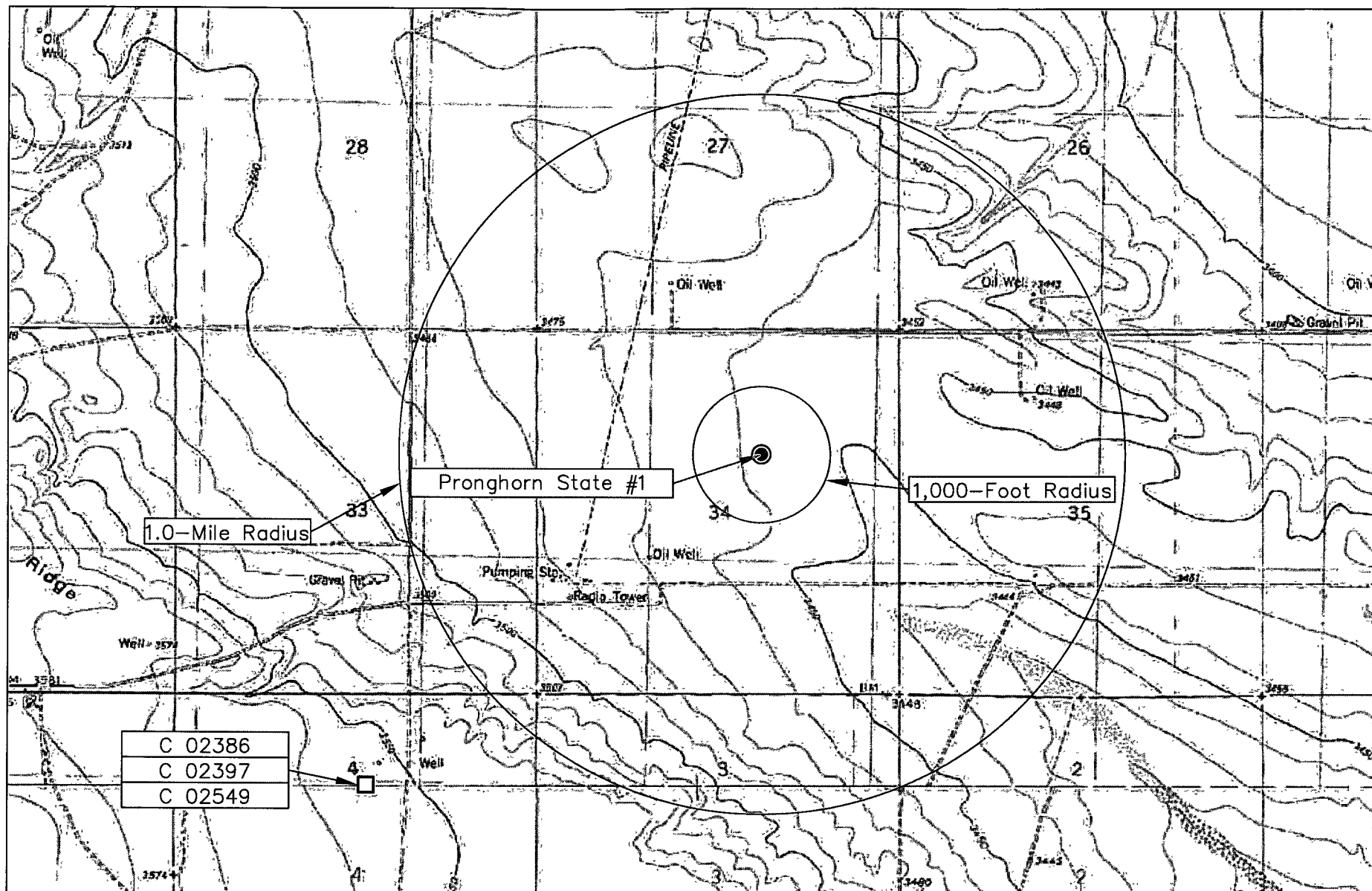
DWG By: D Dominguez  
January 2006

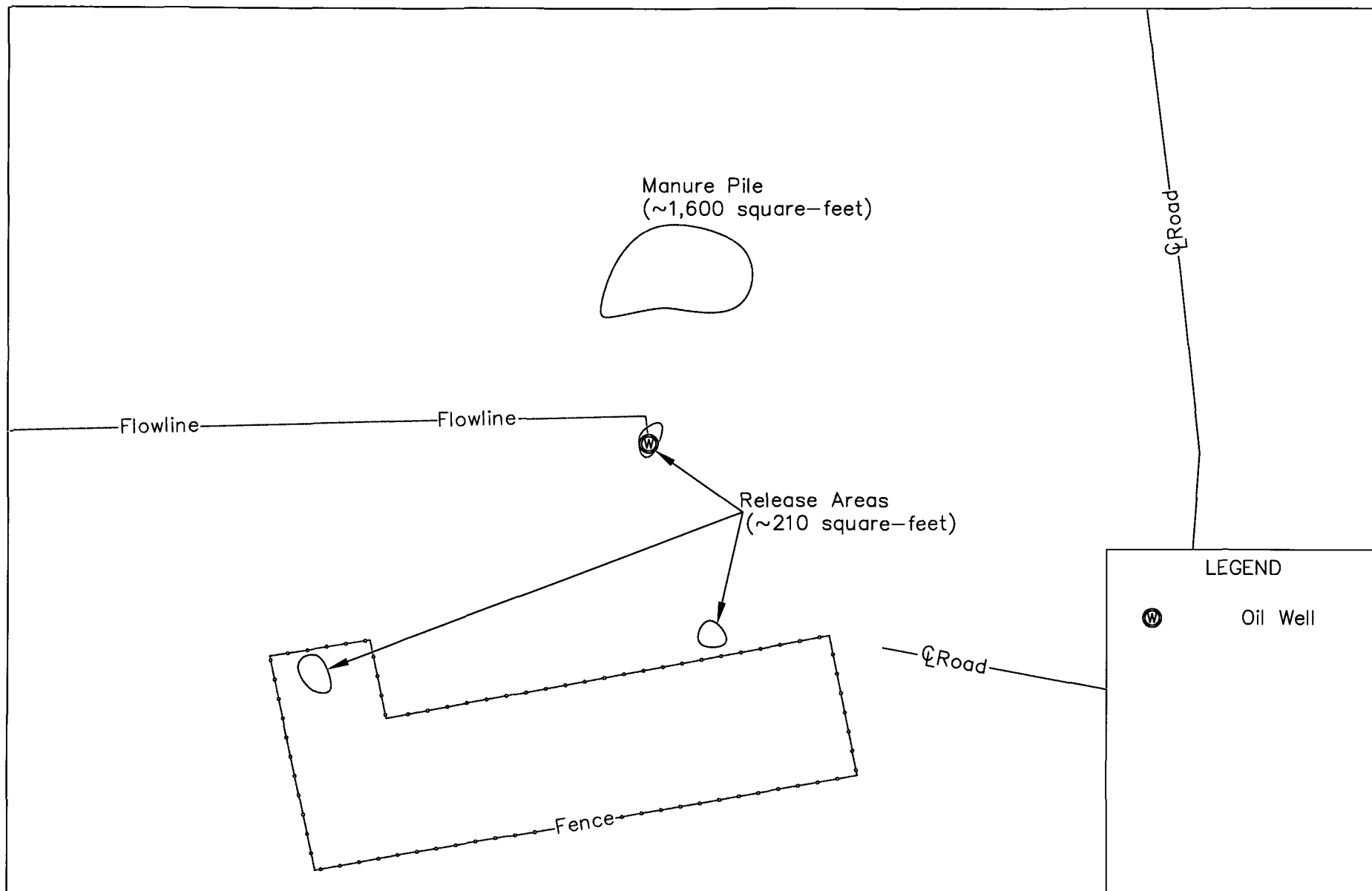
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1 of 1







# LEGEND

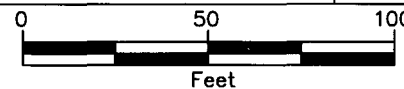
W Oil Well

Figure 3  
Site Map  
Chesapeake Energy  
Pronghorn State #1

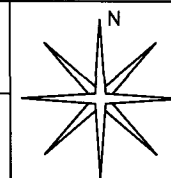
Lea County, New Mexico  
SW 1/4 of the NE 1/4, Sec. 34, T23S, R34E  
N 32°15' 46.45" W 103°27' 20.87"  
Elevation: 3,458 feet amsl

DWG By: D Dominguez  
January 2006

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1 of 1





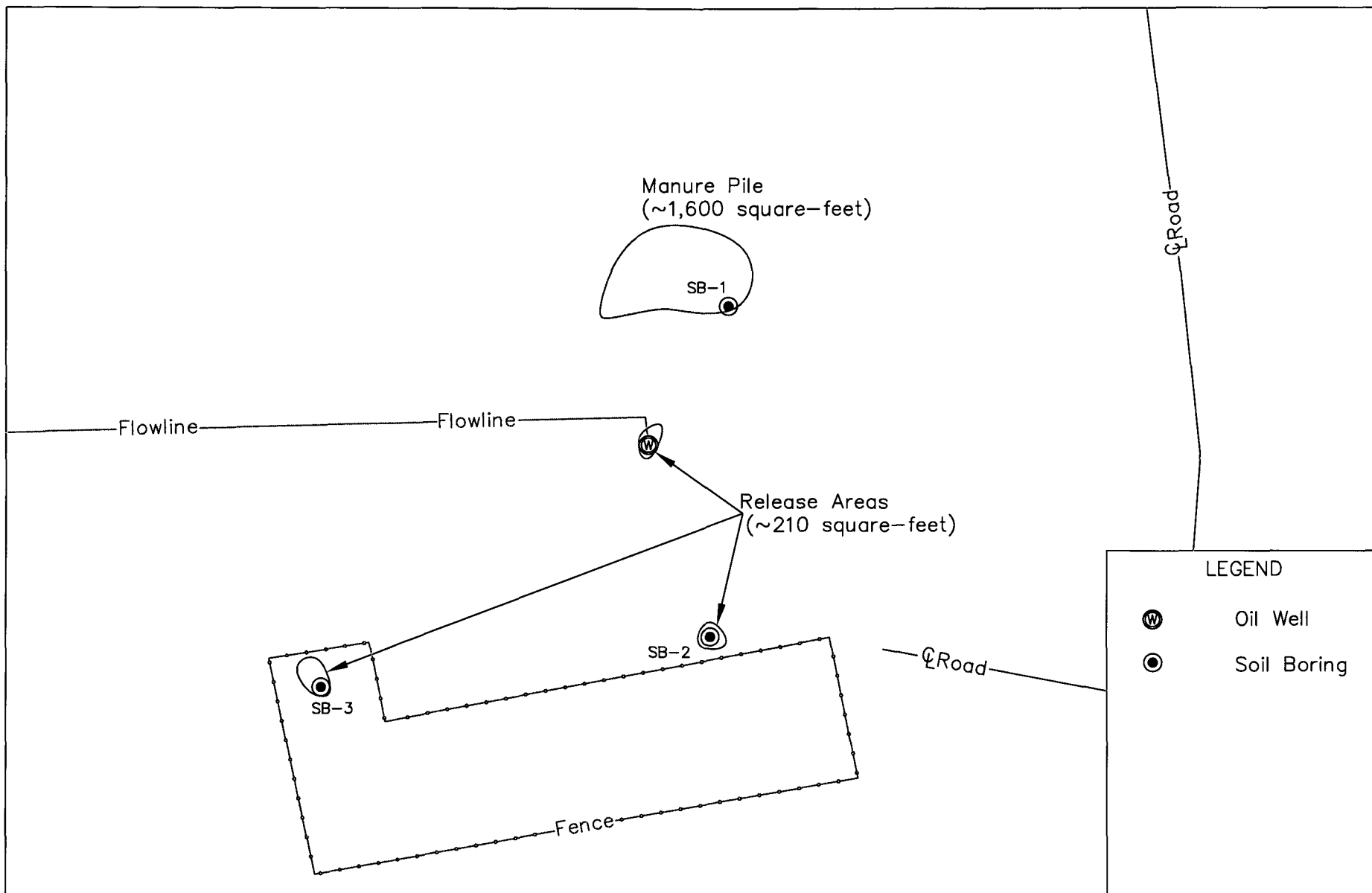
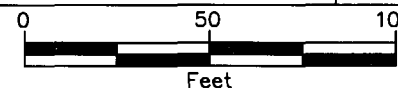


Figure 4  
Soil Boring Location Map  
Chesapeake Energy  
Pronghorn State #1

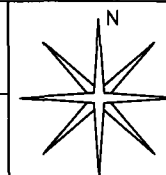
Lea County, New Mexico  
SW 1/4 of the NE 1/4, Sec. 34, T23S, R34E  
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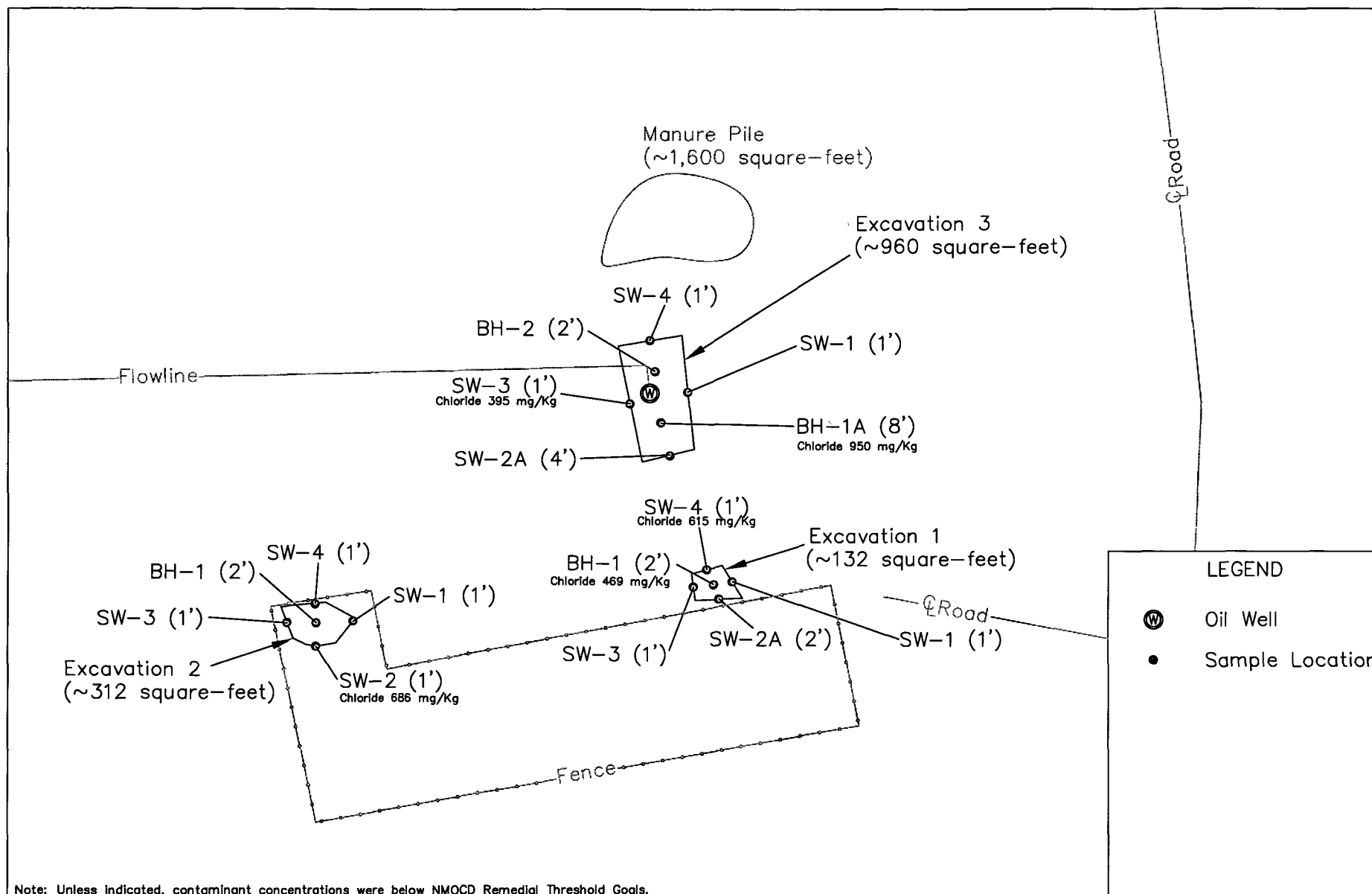
DWG By: D Dominguez  
January 2006

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Feb 2006



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1 of 1





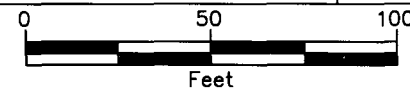
Note: Unless indicated, contaminant concentrations were below NMOC Remedial Threshold Goals.

Figure 5  
Excavation/Sample Location Map  
Chesapeake Energy  
Pronghorn State #1

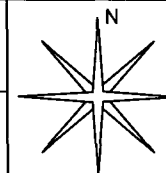
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Elevation: 3,458 feet amsl

DWG By: D Dominguez  
January 2006

REVISED:  
Feb 2006



SHEET  
1 of 1



## TABLES

TABLE 1

Well Data**Chesapeake Energy - Pronghorn State #1 (Ref. # 160050)**

Well Number	Diversion <sup>A</sup>	Owner	Use	Twsp	Rng	Sec q q q	Latitude	Longitude	Date Measured	Surface Elevation <sup>B</sup>	Depth to Water
											(ft bgs)
C 02386	3	RUBERT MADERA	DOM	24S	34E	04 2 1 4	N32° 15' 0.43"	W103° 28' 28.06"	31-Jan-60	3,555	475
C 02397	30	BERT MADERA	COM	24S	34E	04 2 1 4	N32° 15' 0.43"	W103° 28' 28.06"	31-Jan-60	3,555	475
C 02397	3	BERT MADERA	MUL	24S	34E	04 2 1 4	N32° 15' 0.43"	W103° 28' 28.06"	31-Jan-60	3,555	475

Data obtained from the New Mexico Office of the State Engineer Website ([http://waters.ose.state.nm.us:7001/WATERS/wr\\_RegisServlet1](http://waters.ose.state.nm.us:7001/WATERS/wr_RegisServlet1)) and USGS Database

<sup>A</sup> = In acre feet per annum

<sup>B</sup> = Elevation interpolated from USGS topographical map based on referenced location.

DOM = 72-12-1 Domestic one household

COM = Commercial

MUL = 72-12-1 Multiple domestic households

quarters are 1=NW, 2=NE, 3=SW, 4=SE; quarters are biggest to smallest

**Shaded area indicates wells not shown in Figure 2**

TABLE 2

Summary of Soil Boring Analytical Results

Chesapeake - Pronghorn State #1 (Ref. #160050)

Soil Boring	Soil Sample I.D.	Depth (feet)	Sample Date	Soil Status	PID Reading (ppm)	Field Chloride Analyses (ppm)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Total Xylenes (mg/Kg)	Total BTEX (mg/Kg)	TPH (as gasoline) (mg/Kg)	TPH (as diesel) (mg/Kg)	Total TPH (mg/Kg)	Chloride (mg/Kg)	Sulfate (mg/Kg)
SB-1	SB-1 2'-3'	2-3	01-Feb-06	In Situ	0.6	160	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	27.1	27.1	74.0	<b>1,380</b>
	SB-1 5'-6'	5-6	01-Feb-06	In Situ	0.4	160	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	18.9	18.9	31.7	74.4
	SB-1 10'-11'	10-11	01-Feb-06	In Situ	0.2	400	--	--	--	--	--	<10.0	11.1	11.1	--	228
	SB-1 15'-16'	15-16	01-Feb-06	In Situ	0.2	240	--	--	--	--	--	<10.0	8.74 <sup>A</sup>	<10.0	--	--
	SB-1 20'-21'	20-21	01-Feb-06	In Situ	0.5	160	--	--	--	--	--	<10.0	<10.0	<10.0	--	--
SB-2	SB-2 2'-3'	2-3	02-Feb-06	In Situ	7.2	400	<0.0250	<0.0250	<0.0250	<0.050	<0.125	54.0	1,700.0	1,750.0	<b>411</b>	64
	SB-2 5'-6'	5-6	02-Feb-06	In Situ	3.6	320	<0.0250	<0.0250	<0.0250	26.4	26.4	<10.0	70.2	70.2	180	19.8
	SB-2 10'-11'	10-11	02-Feb-06	In Situ	1.5	160	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	<10.0	<10.0	13.8	--
	SB-2 15'-16'	15-16	02-Feb-06	In Situ	1.4	160	--	--	--	--	--	<10.0	<10.0	<10.0	--	--
SB-3	SB-3 2'-3'	2-3	10-Feb-06	In Situ	0.4	400	<0.0250	<0.0250	<0.0250	<0.050	<0.125	11.3	1,016.0	1,030.0	<b>464</b>	43.8
	SB-3 5'-6'	5-6	10-Feb-06	In Situ	0.3	640	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	57.8	57.8	<b>553</b>	47.7
	SB-3 10'-11'	10-11	10-Feb-06	In Situ	0.3	320	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	<10.0	<10.0	16.3	--
	SB-3 15'-16'	15-16	10-Feb-06	In Situ	0.4	160	--	--	--	--	--	<10.0	12.9	12.9	12.4	--
	SB-3 20'-21'	20-21	11-Feb-06	In Situ	0.4	160	--	--	--	--	--	<10.0	<10.0	<10.0	--	--
NMOCD Remedial Thresholds					<b>100</b>		<b>10</b>				<b>50</b>			<b>5,000</b>	<b>250<sup>B</sup></b>	<b>600<sup>B</sup></b>

***Bolded** values are in excess of the NMOCD Remediation Thresholds and/or NMWQCC groundwater standards**-- = Not Analyzed*<sup>A</sup> *Detected below laboratory method detection limits, therefore an estimate*<sup>B</sup> *Chloride and sulfate residuals may not be capable of impacting groundwater above NMWQCC groundwater standards of 250 ppm and 600 ppm, respectively*

TABLE 3

Summary of Excavation Soil Sample Analytical Results

Chesapeake - Pronghorn State #1 (Ref. #160050)

Excavation	Soil Sample I.D.	Depth (feet)	Sample Date	Soil Status	PID Reading (ppm)	Field Chloride Analyses (ppm)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Total Xylenes (mg/Kg)	Total BTEX (mg/Kg)	TPH (as gasoline) (mg/Kg)	TPH (as diesel) (mg/Kg)	Total TPH (mg/Kg)	Chloride (mg/Kg)	Sulfate (mg/Kg)
Excavation 1	E1-BH-1 2'	2	03-Apr-06	In Situ	38.1	--	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	34.9	34.9	469	4.99
	E1-SW-1 1'	1	03-Apr-06	In Situ	44.1	--	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	<10.0	<20.0	34.9	28.6
	E1-SW-2 1'	1	03-Apr-06	Excavated	129.0	--	<0.0250	<0.0250	0.141	0.523	0.664	1.110	11,630	12,700	321	36.3
	E1-SW-2A (2')	2	30-May-06	In Situ	--	--	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	<10.0	<20.0	180	32
	E1-SW-3 1'	1	03-Apr-06	In Situ	40.8	--	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	<10.0	<20.0	19.5	18.4
Excavation 2	E1-SW-4 1'	1	03-Apr-06	In Situ	42.0	--	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	<10.0	<20.0	615	33.7
	E2-BH-1 2'	2	03-Apr-06	In Situ	36.8	--	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	<10.0	<20.0	249	27.3
	E2-SW-1 1'	1	03-Apr-06	In Situ	33.2	--	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	<10.0	<20.0	79.7	34.0
	E2-SW-2 1'	1	03-Apr-06	In Situ	33.1	--	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	86.7	86.7	686	42.1
	E2-SW-3 1'	1	03-Apr-06	In Situ	33.8	--	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	<10.0	<20.0	12.7	14.5
Excavation 3	E2-SW-4 1'	1	03-Apr-06	In Situ	43.8	--	<0.0250	<0.0250	<0.0250	<0.050	<0.125	9.42 <sup>A</sup>	765	765	225	29.5
	E3-BH-1 2'	2	03-Apr-06	Excavated	33.4	--	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	<10.0	<20.0	6,280	22.3
	E3-BH-1 A (8')	8	19-May-06	In Situ	--	--	--	--	--	--	--	--	--	--	950	--
	E3-BH-2 2'	2	03-Apr-06	In Situ	32.2	--	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	<10.0	<20.0	117	28.0
	E3-SW-1 1'	1	03-Apr-06	In Situ	33.5	--	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	<10.0	<20.0	136	25.9
	E3-SW-2 1'	1	03-Apr-06	Excavated	--	--	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	<10.0	<20.0	1,250	61.5
	E3-SW-2A (4')	4	19-May-06	In Situ	33.3	--	--	--	--	--	--	--	--	--	14	--
	E3-SW-3 1'	1	03-Apr-06	In Situ	38.2	--	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	<10.0	<20.0	395	52.9
	E3-SW-4 1'	1	03-Apr-06	In Situ	36.0	--	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	<10.0	<20.0	27.3	17.6
NMOCD Remedial Thresholds					100		10				50			5,000	250 <sup>B</sup>	600 <sup>B</sup>

***Bolded** values are in excess of the NMOCD Remediation Thresholds and/or NMWQCC groundwater standards**-- = Not Analyzed*<sup>A</sup> *Detected below laboratory method detection limits, therefore an estimate*<sup>B</sup> *Chloride and sulfate residuals may not be capable of impacting groundwater above NMWQCC groundwater standards of 250 ppm and 600 ppm, respectively*

## ATTACHMENTS

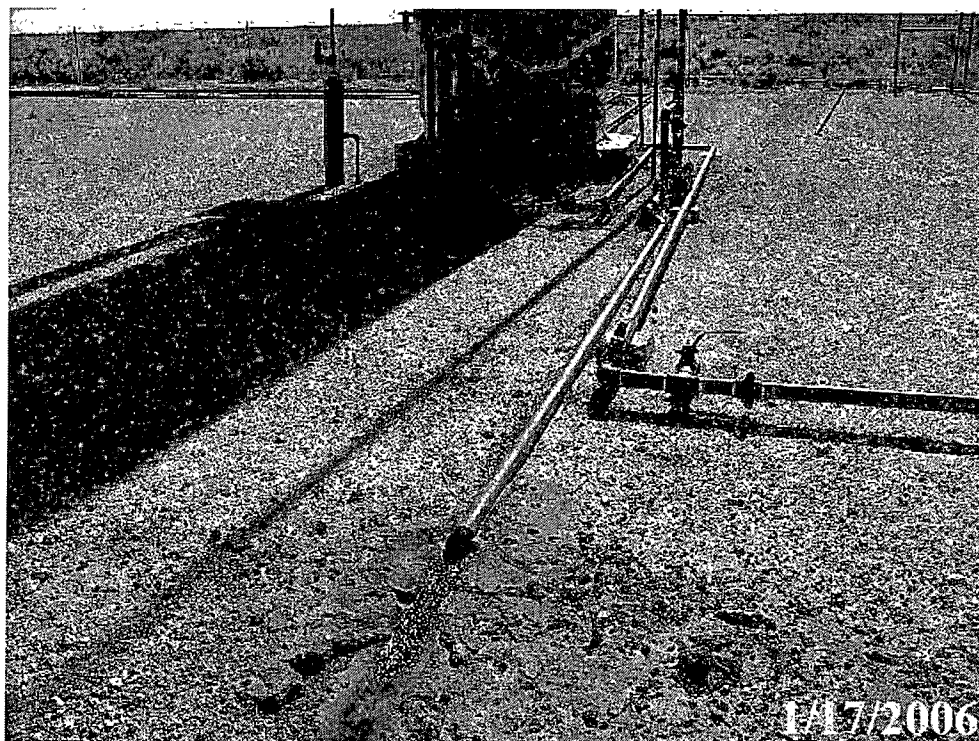
**ATTACHMENT I**

**SITE PHOTOGRAPHS**





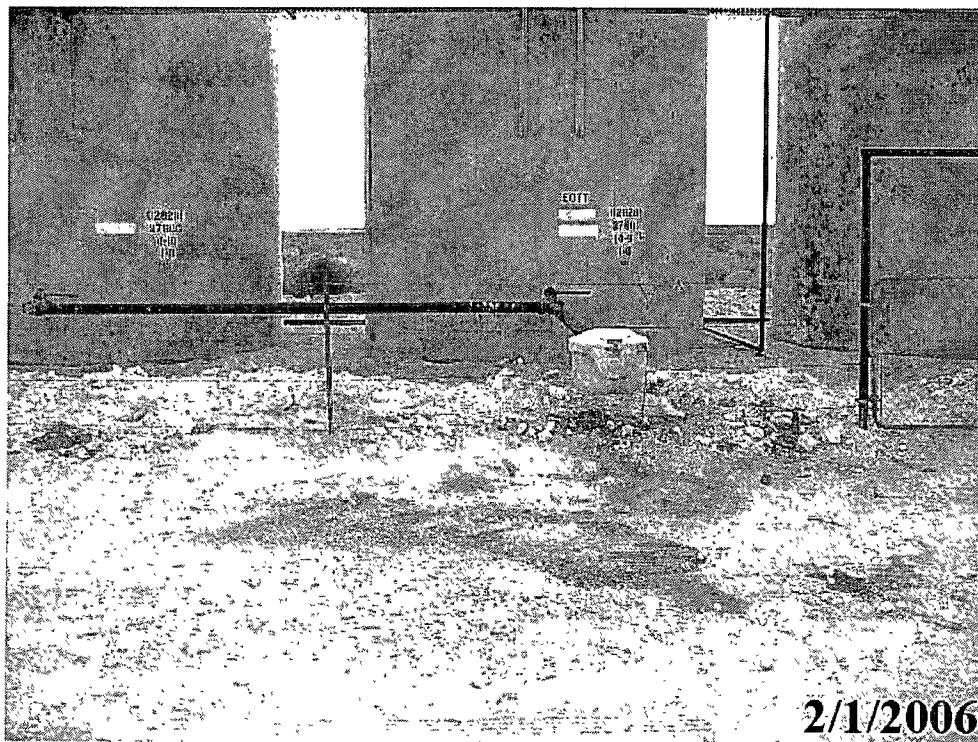
Photograph No. 1 – Lease Sign.



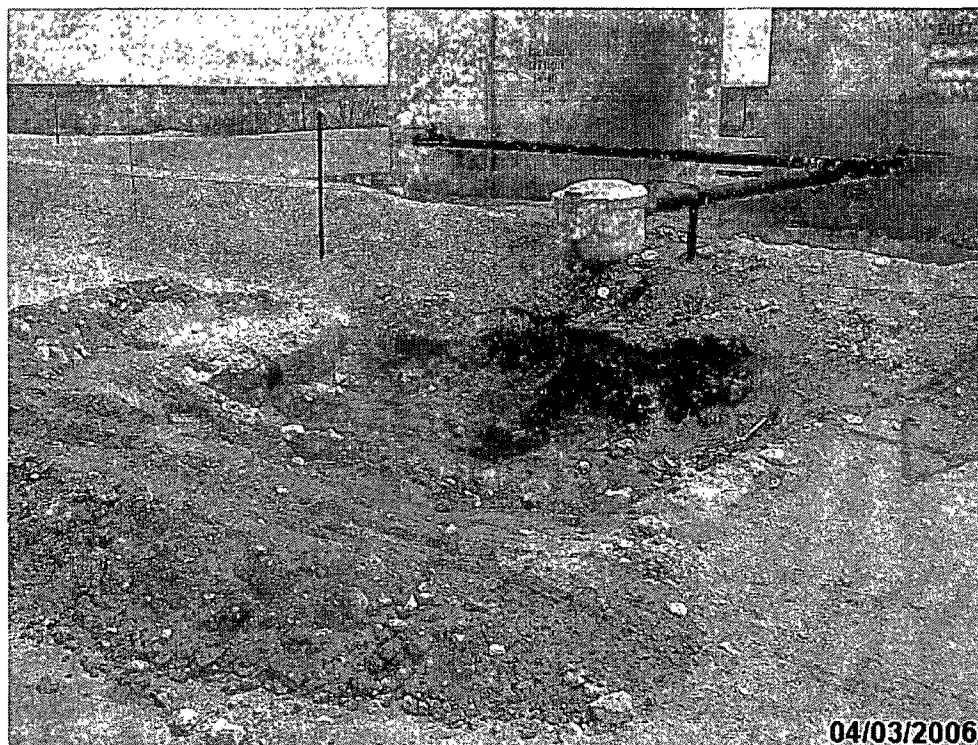
Photograph No. 2 – Looking southwesterly at release area.



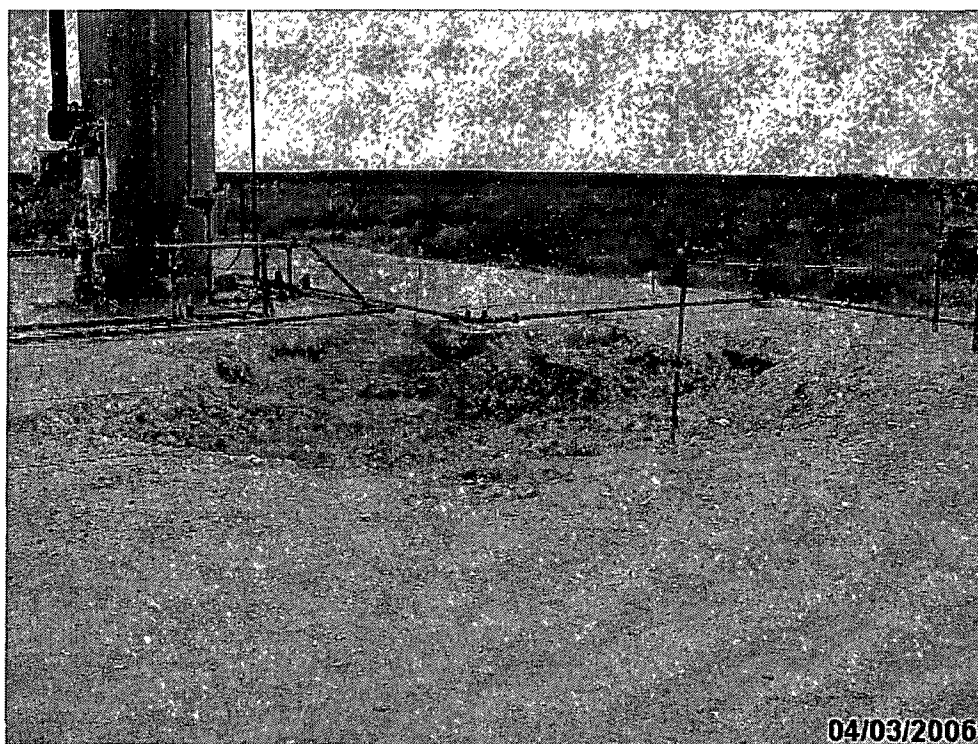
Photograph No. 3 – Looking northerly at release area.



Photograph No. 4 – Looking southerly at release area.

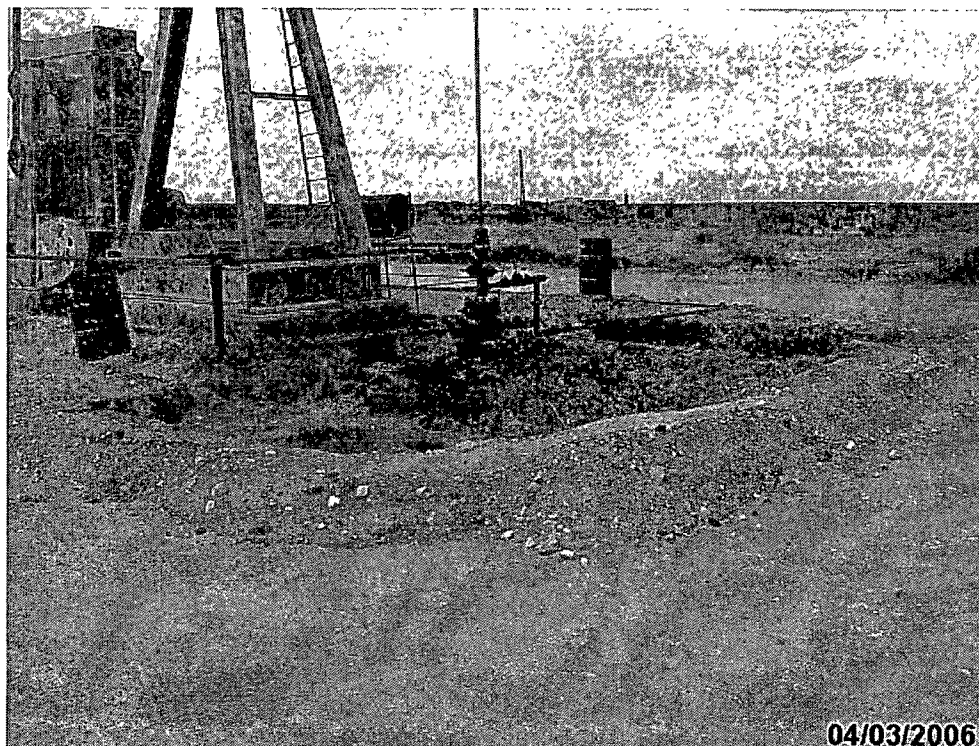


Photograph No. 5 – Looking southerly across excavation area one (1).

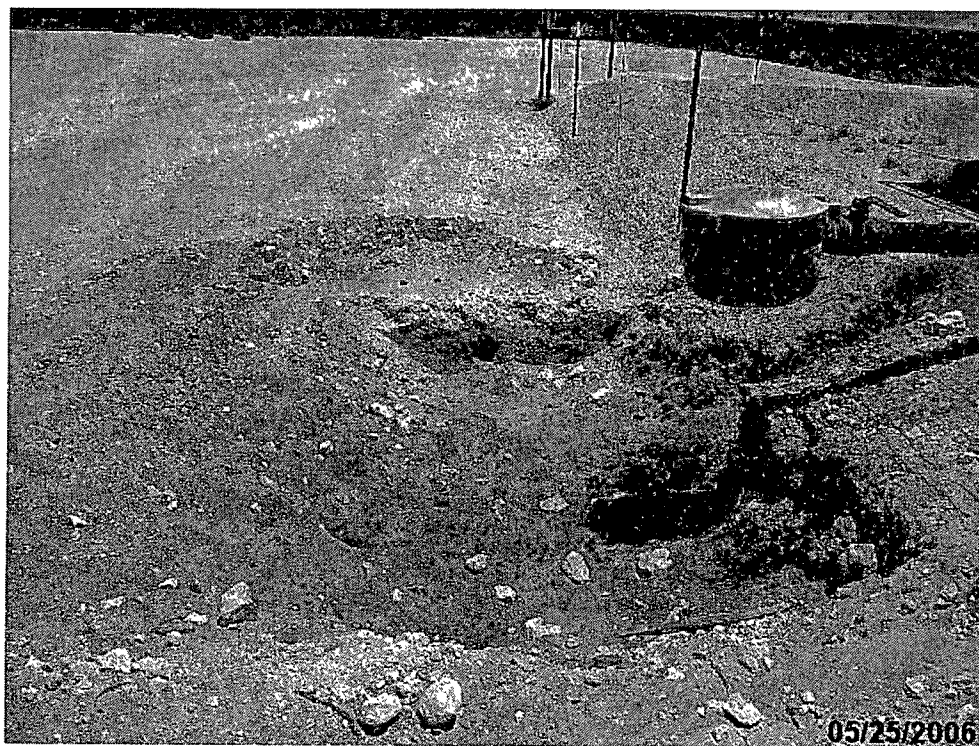


Photograph No. 6 – Looking southwesterly across excavation area two (2).

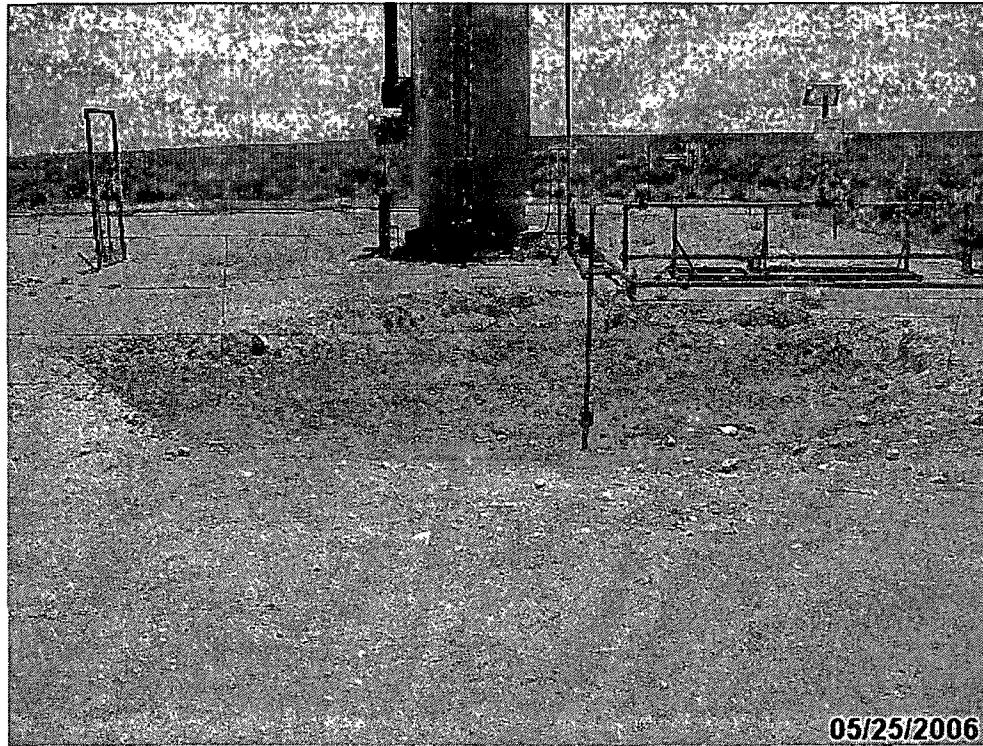




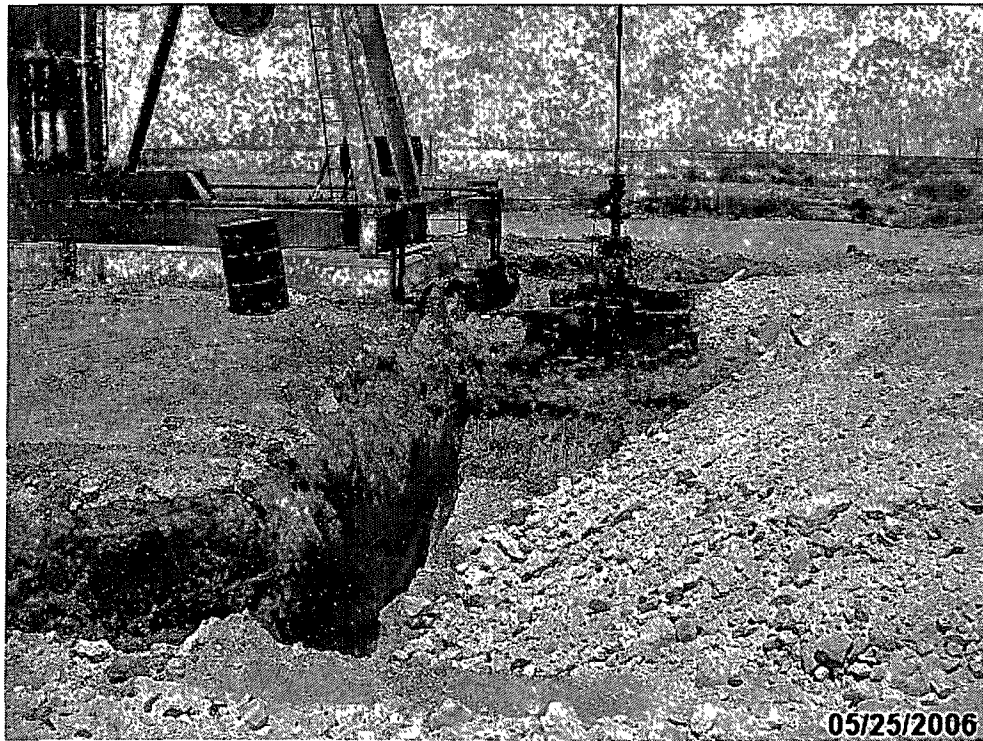
Photograph No. 7 – Looking northerly across excavation area three (3).



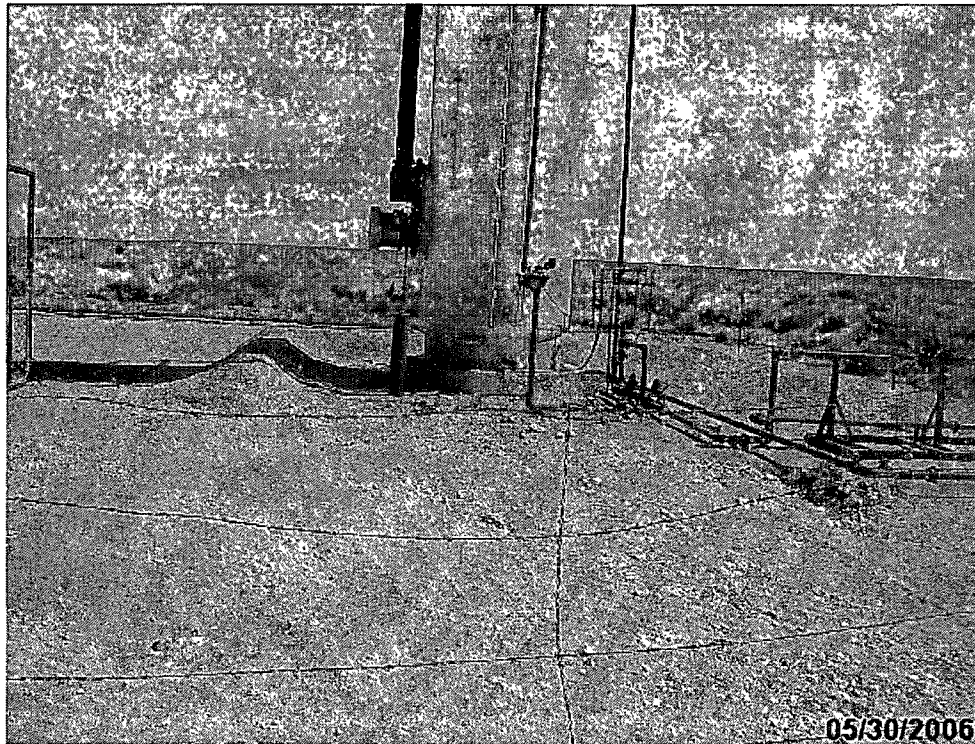
Photograph No. 8 – Looking southeasterly across excavation area one (1).



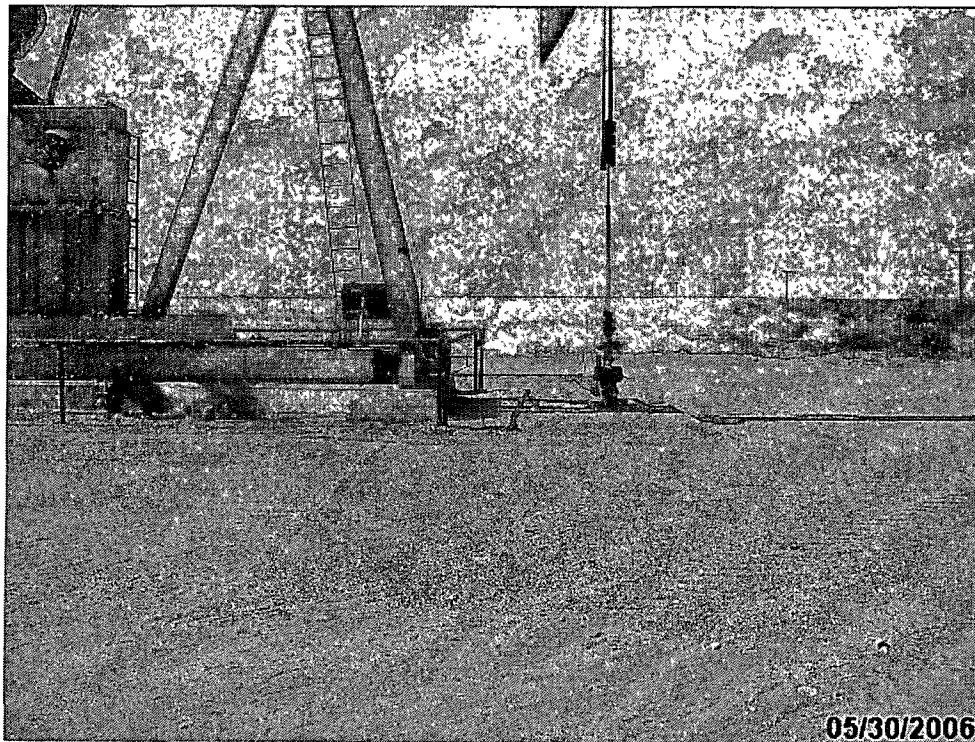
Photograph No. 9 – Looking southerly across excavation area two (2).



Photograph No. 10 – Looking easterly across excavation area three (3).

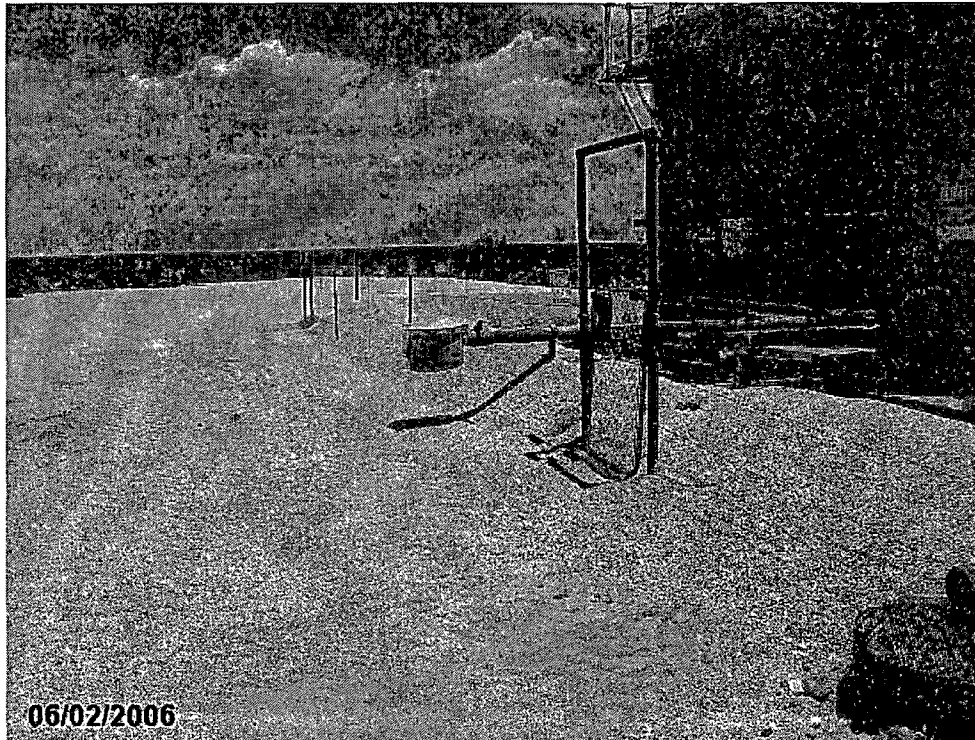


Photograph No. 11 – Backfilled excavation area two (2).



Photograph No. 12 – Backfilled excavation area three (3).





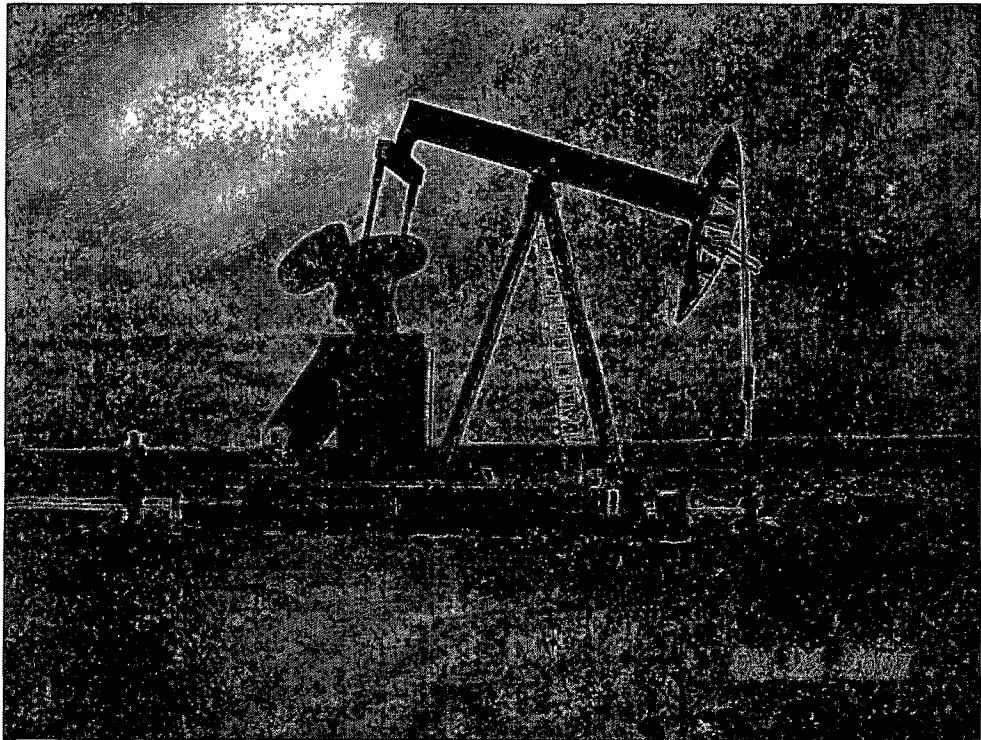
Photograph No. 13 – Backfilled excavation area one (1).



Photograph No. 14 – Remediated site looking southerly over reconstructed berm.



Photograph No. 15 – Remediated site looking southerly toward tank battery over reconstructed berm.



Photograph No. 16 – Looking easterly over remediated area around well head.



**ATTACHMENT II**

**LABORATORY ANALYTICAL RESULTS**  
**AND**  
**CHAIN-OF-CUSTODY FORMS**

***ANALYTICAL DATA INCLUDED ON ATTACHED CD***

**ATTACHMENT III**

**SOIL BORING LOGS**

## Log Of Test Borings

(NOTE - Page 1 of 1)



ENVIRONMENTAL PLUS, INC.  
CONSULTING AND  
REMEDIAL CONSTRUCTION  
EUNICE, NEW MEXICO  
505-394-3481

Project Number: 160050

Project Name: Chesapeake - Pronghorn State #1

Location: UL-G, Section 34, Township 23 South, Range 34 East

Boring Number: SB-1

Surface Elevation: 3,458-feet amsl

Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	Chloride Analysis (mg/Kg)	U.S.C.S. Symbol	Depth (feet)	Start Date: 2-1-06 Completion Date: 2-1-06	Time: 1620 hrs Time: 1715 hrs	Description
1630				.6	160		2'			2' SAND, Brown/Red - silty
1640				.4	160		5'			5' SAND, Red - silty
1650				.2	400		10'			10' CALICHE, Tan
1700				.2	240		15'			15' CALICHE, Tan
1710				.5	160		20'			20' CALICHE, Whitish
										End of Soil Boring at 21' bgs
							25'			
							30'			

Water Level Measurements (feet)						Drilling Method: Auger
Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level	Backfill Method: Bentonite
-	-	-	-	-	-	Field Representative: GB
-	-	-	-	-	-	
-	-	-	-	-	-	

## Log Of Test Borings

(NOTE - Page 1 of 1)



ENVIRONMENTAL PLUS, INC.  
CONSULTING AND  
REMEDIAL CONSTRUCTION  
EUNICE, NEW MEXICO  
505-394-3481

Project Number: 160050

Project Name: Chesapeake - Pronghorn State #1

Location: UL-G, Section 34, Township 23 South, Range 34 East

Boring Number: SB-2

Surface Elevation: 3,458-feet amsl

Time	Sample Type	Recovery (Inches)	Moisture	PID Readings (ppm)	Chloride Analysis (mg/Kg)	U.S.C.S. Symbol	Depth (feet)	Start Date: 2-2-06 Time: 1000 hrs Completion Date: 2-2-06 Time: 1040 hrs Description
1010				7.2	400			2' SAND/Clay, Red
1015				3.6	320		5	5' SAND/Clay, Red
1025				1.5	160		10	10' CALICHE/Sand, Tanish
1035				1.4	160		15	15' CALICHE/Sand, Tanish
								End of Soil Boring at 16' bgs
							20	
							25	
							30	

Water Level Measurements (feet)						Drilling Method: Auger
Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level	Backfill Method: Bentonite
-	-	-	-	-	-	Field Representative: GB
-	-	-	-	-	-	
-	-	-	-	-	-	

## Log Of Test Borings

(NOTE - Page 1 of 1)



ENVIRONMENTAL PLUS, INC.  
CONSULTING AND  
REMEDIAL CONSTRUCTION  
EUNICE, NEW MEXICO  
505-394-3481

Project Number: 160050

Project Name: Chesapeake - Pronghorn State #1

Location: UL-G, Section 34, Township 23 South, Range 34 East

Boring Number: SB-3

Surface Elevation: 3,458-feet amsl


Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	Chloride Analysis (mg/Kg)	U.S.C.S. Symbol	Depth (feet)	Start Date: 2-10-06 Time: 1715 hrs	Completion Date: 2-10-06 Time: 1815 hrs	Description
1725				.4	400					2' SAND/Clay, Red
1728				.3	640		5			5' SAND, Reddish/Brown
1743				.3	320		10			10' CALICHE/Sand
1755				.4	160		15			15' CALICHE/Sand
1810				.4	160		20			20' CALICHE/Sand
										End of Soil Boring at 21' bgs
							25			
							30			

Water Level Measurements (feet)						Drilling Method: Auger
Date	Time	Sample Depth	Casing Depth	Cave-In Depth	Water Level	Backfill Method: Bentonite
-	-	-	-	-	-	Field Representative: GB
-	-	-	-	-	-	
-	-	-	-	-	-	

**ATTACHMENT VI**

**INFORMATION AND METRICS FORM  
INITIAL NMOCD FORM C-141  
FINAL NMOCD FORM C-141**

 <b>Chesapeake</b> Information and Metrics		<b>Incident Date:</b> Historical	<b>NMOCD Notified:</b>
<b>Site:</b> Pronghorn State #1		<b>Assigned Site Reference :</b> EPI Reference #160050	
<b>Company:</b> Chesapeake Energy			
<b>Street Address:</b> 1616 West Bender			
<b>Mailing Address:</b> P.O. Box 190			
<b>City, State, Zip:</b> Hobbs, New Mexico 88240			
<b>Representative:</b> Bradley Blevins			
<b>Representative Telephone:</b> (505) 391-1462 ext. 6224			
<b>Telephone:</b>			
<b>Fluid volume released (bbls):</b> >5 bbls		<b>Recovered (bbls):</b> 0 bbls	
>25 bbls: Notify NMOCD verbally within 24 hrs and submit form C-141 within 15 days. (Also applies to unauthorized releases >500 mcf Natural Gas)			
5-25 bbls: Submit form C-141 within 15 days (Also applies to unauthorized releases of 50-500 mcf Natural Gas)			
<b>Leak, Spill, or Pit (LSP) Name:</b> Pronghorn State #1			
<b>Source of contamination:</b>			
<b>Land Owner, i.e., BLM, ST, Fee, Other:</b> Jim Keller			
<b>LSP Dimensions:</b> 10 feet by 10 feet, 10 feet by 70 feet, 10 feet by 40 feet			
<b>LSP Area:</b> ~100 ft <sup>2</sup> , ~70 ft <sup>2</sup> , ~40 ft <sup>2</sup>			
<b>Location of Reference Point (RP):</b>			
<b>Location distance and direction from RP:</b>			
<b>Latitude:</b> N 32° 15' 46.45"			
<b>Longitude:</b> W 103° 27' 20.87"			
<b>Elevation above mean sea level:</b> 3,458 feet			
<b>Feet from North Section Line:</b> 1980			
<b>Feet from West Section Line:</b> 1980			
<b>Location- Unit or ¼:</b> SW¼ of the NE¼		<b>Unit Letter:</b> G	
<b>Location- Section:</b> 34			
<b>Location- Township:</b> T23S			
<b>Location- Range:</b> R34E			
<b>Surface water body within 1000' radius of site:</b> zero (0)			
<b>Domestic water wells within 1000' radius of site:</b> zero (0)			
<b>Agricultural water wells within 1000' radius of site:</b> zero (0)			
<b>Public water supply wells within 1000' radius of site:</b> zero (0)			
<b>Depth from land surface to groundwater (DG):</b> ~475 feet			
<b>Depth of contamination (DC):</b> ~6 feet			
<b>Depth to groundwater (DG – DC = DtGW):</b> ~469 feet			
<b>1. Groundwater</b>		<b>2. Wellhead Protection Area</b>	
If Depth to GW <50 feet: <i>20 points</i>		If <1000' from water source, or; <200' from private domestic water source: <i>20 points</i>	
If Depth to GW 50 to 99 feet: <i>10 points</i>		If >1000' from water source, or; >200' from private domestic water source: <i>0 points</i>	
If Depth to GW >100 feet: <i>0 points</i>			
<b>3. Distance to Surface Water Body</b>			
<200 horizontal feet: <i>20 points</i>			
200-1000 horizontal feet: <i>10 points</i>			
>1000 horizontal feet: <i>0 points</i>			
<b>Site Rank (1+2+3) = 0 + 0 + 0 = 0</b>			
<b>Total Site Ranking Score and Acceptable Concentrations</b>			
Parameter	>19	10-19	0-9
Benzene <sup>1</sup>	10 ppm	10 ppm	10 ppm
BTEX <sup>1</sup>	50 ppm	50 ppm	50 ppm
TPH	100 ppm	1,000 ppm	5,000 ppm

<sup>1</sup>100 ppm field VOC headspace measurement may be substituted for lab analysis



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

<b>Name of Company:</b> Chesapeake Energy	<b>Contact:</b> Bradley Blevins
<b>Address:</b> P.O. Box 190	<b>Telephone No.:</b> (505) 391-1462 ext. 6224
<b>Facility Name:</b> Pronghorn State #1	<b>Facility Type:</b> Tank Battery
<b>Surface Owner:</b> Jim Keller	<b>Mineral Owner:</b>
<b>Lease No.:</b>	

#### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	34	23S	34E	1,980	N	1,980	E	Lea

**Latitude:** N 32° 15' 46.45" **Longitude:** W 103° 27' 20.87"

#### NATURE OF RELEASE

<b>Type of Release:</b> Petroleum and/or production fluids	<b>Volume of Release:</b> Unknown	<b>Volume Recovered:</b> Unknown
<b>Source of Release:</b> Various sources	<b>Date and Hour of Occurrence:</b> Historical	<b>Date and Hour of Discovery:</b>
<b>Was Immediate Notice Given?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	<b>If YES, To Whom?</b>	
<b>By Whom?</b> Bradley Blevins	<b>Date and Hour:</b>	
<b>Was a Watercourse Reached?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>If YES, Volume Impacting the Watercourse:</b> Not Applicable	
<b>If a Watercourse was Impacted, Describe Fully.*</b> Not Applicable		
<b>Describe Cause of Problem and Remedial Action Taken.*</b> The release is historical from various sources.		
<b>Describe Area Affected and Cleanup Action Taken.*</b> Approximately 210 square-feet of surface area was impacted by the release. Soil borings were advanced to collect soil samples to delineate extent of impacted soil. A remediation proposal will be developed based on soil sample analyses.		
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.		
<b>Signature:</b> 	<b>OIL CONSERVATION DIVISION</b>	
<b>Printed Name:</b> Bradley Blevins	<b>Approved by District Supervisor:</b>	
<b>Title:</b> Field Supervisor	<b>Approval Date:</b>	<b>Expiration Date:</b>
<b>E-mail Address:</b> bblevins@chkenergy.com	<b>Conditions of Approval:</b>	<b>Attached</b> <input type="checkbox"/>
<b>Date:</b> 4-3-06 <b>Phone:</b> (505) 391-1462 ext. 6224		

\* Attach Additional Sheets If Necessary

Chesapeake - 147179

Facility - PPAC0609632841

Incident - PPAC0609632913

Application - PPAC0609633096

Pronghorn State #1  
160050

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: Chesapeake Energy	Contact: Bradley Blevins
Address: P.O. Box 190, Hobbs, NM 88240	Telephone No.: (575) 391-1462 ext. 6224
Facility Name: Pronghorn State #1	Facility Type: Tank Battery

Surface Owner: Jim Keller	Mineral Owner:	API No.: 30-025-33241
---------------------------	----------------	-----------------------

#### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	34	23S	34E	1,980	N	1,980	E	Lea

Latitude: N32° 15' 46.45"

Longitude: W103° 27' 20.87"

#### NATURE OF RELEASE

Type of Release: Petroleum and/or production fluids	Volume of Release: >5 bbls	Volume Recovered: 0 bbls
Source of Release: Various sources	Date and Hour of Occurrence: Historical	Date and Hour of Discovery:
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse: Not Applicable	

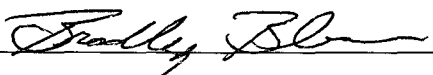

Depth to water: ~475 ft

If a Watercourse was Impacted, Describe Fully.\* Not Applicable

Describe Cause of Problem and Remedial Action Taken.\* The release is historical from various sources.

Describe Area Affected and Cleanup Action Taken.\* From March 24 through May 24, 2006, approximately 200 yds<sup>3</sup> of impacted soil were removed from Excavations I, II and III comprising an area of ~1,404-ft<sup>2</sup> at depths ranging from 1 to 8-ft bgs. Impacted soil was transported to Sundance Services, Inc. for disposal. From May 25 through June 2, 2006 the excavation was backfilled with caliche (~180 yds<sup>3</sup>), from a State owned caliche pit, and pea gravel (~20 tons) purchased from Wallach Concrete, Inc. The disturbed areas were contoured to allow natural drainage.

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: Bradley Blevins	Approved by District Supervisor: ENVIRONMENTAL ENGINEER	
Title: Field Supervisor	Approval Date: 2/6/08	Expiration Date:
E-mail Address: bblevins@chkenergy.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 2-5-08 Phone: (505) 391-1462 ext. 6224		

\* Attach Additional Sheets If Necessary