ENVIROTECH INC.

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

DRAFT 1

SUBSURFACE INVESTIGATION WORKPLAN

FOR:

BP AMERICA
ATLANTIC B LS #7
UNIT LETTER A, SECTION 34, TOWNSHIP 31N, RANGE 10W
LATITUDE 36.860175 LONGITUDE -107.863775
SAN JUAN COUNTY, NEW MEXICO
API # 30-045-10190

PROJECT NO. 03143-0019

JANUARY 2009

5796 U.S. HIGHWAY 64 • FARMINGTON, NM 87401 • (505) 632-0615

17

DRAFT 1
SUBSURFACE INVESTIGATION WORKPLAN

SITE NAME:

BP AMERICA
ATLANTIC B LS #7
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LATITUDE 36.860175 LONGITUDE -107.863775
SAN JUAN COUNTY, NEW MEXICO
API # 30-045-10190

SUBMITTED TO:

MR. BRANDON POWELL, NMOCD ENVIRONMENTAL
NEW MEXICO OIL CONSERVATION DIVISION
1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
PHONE (505) 320-0200

SUBMITTED FOR:

MR. LARRY SCHLOTTERBACK
BP AMERICA
200 ENERGY COURT
FARMINGTON, NEW MEXICO 87401
(505) 326-9425

SUBMITTED BY:

ENVIROTECH, INC.
5796 U.S. HIGHWAY 64
FARMINGTON, NEW MEXICO 87401
(505) 632-0615

PROJECT NO. 03143-0019

JANUARY 12, 2009

DRAFT 1
SUBSURFACE INVESTIGATION
WORKPLAN
BP AMERICA
ATLANTIC B LS #7
API # 30-045-10190

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INTRODUCTION

Envirotech, Inc. has been retained by Mr. Larry Schlotterback, BP America representative, to conduct a hydrogeologic assessment at the Atlantic B LS #7 in San Juan County and to prepare a work plan for a subsurface investigation at the above referenced site. The site is located in the NE ¼ NE ¼ of Section 34, Township 31N, Range 10W, San Juan County, New Mexico; see ***Figure 1, Vicinity Map.*** On December 30, 2008, a meeting was conducted at the well site for concerns of residual soil contamination associated with previously closed production pits on Atlantic B LS #7. Attendees included Mr. Larry Schlotterback, BP America representative, Mr. Brandon Powell of NMOCD Environmental Division, Envirotech personnel and the land owner.

On October 18, 2002, a pit located on the west side of the site was closed by Blagg Engineering, INC; see ***Figure 2, Site Map***. Blagg Engineering, INC gave the site an NMOCD ranking score of 10 and NMOCD TPH closure standard of 1000 ppm. The landowner's nearby water well, drilled in the fall of 1999, is < 200 feet from the Atlantic B LS #7 well site. The water well is approximately 156 ft west and 20 feet higher in elevation than the well site. This water well is not included in the iWATERS database. According to this data, the NMOCD site ranking would be 30 points and the closure standard decreased to 100 ppm. At the request of the landowner, Iina Ba INC. conducted an investigation of the well site on October 3, 2008, taking samples from the pit located on the west side of the Atlantic B LS #7 well site. Samples were also taken from a pit on the Hart Canyon 34 #1 well site owned and operated by Energen Resources, and located just west of Atlantic B LS #7 and from a pit located on the Atlantic B LS #18 well site located south-west of the Atlantic B LS #7 well site. See appendix A for Iina Ba INC. results.

HYDROGEOLOGIC SUMMARY

The Atlantic B LS #7 well site lies within the Blancot-Fruitland Association, a loam from 0-6 inches in depth and a sandy clay loam from 6-60 inches in depth. Its origins are from fan alluvium derived from sandstone and shale with a 0% to 8% slope; see appendix B for web soil survey (Natural Resources Conservation Service). Permeability of the soil is moderate to moderately rapid and water capacity is moderate to high. Runoff is slow to medium with water erosion slight to moderate. The Atlantic B LS #7 well site lies within the western edge of the San Juan Formation Aquifer which ranges from less than 200 feet in the west and south to nearly 2,700 feet in the basin center between Cuba and Gobernador (Frenzel, 1983).

The Atlantic B LS #7 well site is approximately 287 feet east of a second order ephemeral wash that flows into Hart Canyon toward the Animas River to the north-west. The depth to groundwater is approximately 120 feet from surface according to cathodic well protection documentation and nearby water wells. A cathodic well protection data sheet, accepted by OCD in May of 1991, states ground water was encountered at 120 feet; see appendix C. The landowners well, approximately 156 feet west of the well site and 20 feet higher in elevation was quoted by the landowner to be 120 feet to ground water. An old capped-off watering well is located approximately 430 feet to the south-west of the well site where depth to groundwater is unknown. These wells are not in the iWATERS database. An additional water well located within 1000 feet of the well site, drilled in 2004, after the pit closure at Atlantic B

LS #7, has depth to groundwater at 200 feet according to the iWATERS database; see appendix D. This well is approximately 393 feet to the north and 9 feet higher in elevation than the Atlantic B LS #7 well site.

PURPOSE AND SCOPE OF SERVICES

The purpose of this work plan is to provide the methodology for subsurface investigation and remediation planning for NMOCD approval consisting of soil borings, on-site investigation activities, laboratory analysis, and reporting of on-site activities. The following scope of services has been designed to meet this objective.

1) Soil borings will be completed to determine the horizontal and vertical extent of contamination on-site. The anticipated depth of the borings, based on available information and pit depths, is 15 to 25 feet. Proposed soil borings will be located in the middle of each of two pits located on west and south-east sides of the site and stepping out every five (5) feet north, south, east, and west until contamination extents are delineated. Proposed soil boring locations (PSB-1 through PSB-10) are shown on ***Figure 2, Site Map.***
2) All soil borings samples will be screened in the field with a Photo-Ionization Detector (PID), and analyzed in the laboratory for BTEX using USEPA Method 8021 and TPH using USEPA Method 8015.
3) A report documenting the results of on-site activities will be prepared and submitted to the NMOCD for review and approval.

Envirotech has reviewed available information regarding the site submitted to Mr. Brandon Powell, NMOCD Environmental Division. Based off of the above information this workplan has been prepared in conformance with the New Mexico State Oil Conservation Division (NMOCD), Guidelines for Remediation of Leaks, Spills and Releases.

WORKPLAN FOR SUBSURFACE INVESTIGATION

Task 1: Project Management

Sundry and diverse duties are associated with management, maintenance, and reporting. This includes project scheduling; conferencing with the NMOCD, BP America, and the landowner; work plan development; field and laboratory data review; management of operation and maintenance; and review of all reports and specifications. Administrative and secretarial time is included for project file research and maintenance as well as project administrative duties.

Task 2: Soil Borings

a. Soil borings will be completed to determine the horizontal and vertical extent of soil contamination on-site. One soil boring will be placed in the center of each of the two pits located on the west and south-east sides of the site. Four (4) borings will be

located north, south, east and west of the center borings and step out every five (5) feet until the contamination extents are delineated. Soil borings will be advanced to a depth of approximately 15 feet using a hollow stem auger drill rig and will be continuously sampled using a split spoon sampler. All drilling and sampling tools will be thoroughly decontaminated between samples. Field personnel will conduct field screening continuously to evaluate, describe, and record lithology, organic vapors, odor, and all observations pertinent to the geology of the site. Any contamination detected during screening activities will be noted and analyzed as appropriate. Proposed soil boring locations (PSB-1 through PSB-10) are shown on ***Figure 2, Site Map.***

b. Two (2) soil samples will be collected for laboratory analysis from each soil boring: one based on the highest headspace measurements and one from the total depth of the soil boring. Samples will be collected in 16 oz or larger clean glass jars, sealed with clean aluminum foil, heated to approximately 60 deg F to 80 deg F for 5 to 10 minutes, and analyzed for organic vapors (OVs) in accordance with NMOCD guidelines. All samples will be preserved on ice in a chilled, insulated cooler until delivered to the analyzing laboratory. Samples will be screened and analyzed in accordance with USEPA SW-846 title. Soil samples will be submitted to the laboratory for analysis for BTEX using USEPA Method 8021 and for TPH using USEPA Method 8015. Soil boring logs will be completed in the field.

c. If ground water is encountered during the characterization of the impacted soils, a sample should be obtained to assess potential impact on ground water quality in accordance with USEPA SW-846 title. Monitor wells may be required to further delineate and evaluate any residual contamination at the site.

Task 3: Groundwater Monitoring and Analysis

If ground water is encountered, water samples will be taken and submitted to the laboratory for analysis for BTEX. Water levels will be measured prior to bailing each well. A minimum of three well volumes will be removed from each well prior to sampling, using a new disposable bailer. Conductivity, pH, and temperature will be measured and recorded. Samples will be collected in 40 ml VOA vials with Teflon closures, preserved with HgCL2, capped headspace free, labeled and stored on ice in an ice chest. Sample will be delivered under chain of custody to ESC Lab Sciences, 12065 Lebanon Rd, Mt. Juliet, Tennessee, for analysis by USEPA Method 8021.

Task 4: Report Preparation

A report will be prepared and submitted to the NMOCD upon completion of drilling and sampling activities. The report will address the methods and procedures, analytical results, and other information related to on-site activities. One copy of the

report will be submitted to the NMOCD and one copy will be submitted to BP America. Administrative and secretarial time is included for report preparation assistance.

CLOSURE AND LIMITATIONS

The scope of Envirotech's services will be limited to project management, sampling, laboratory analysis, and reporting at the Atlantic B LS #7 well site located in the NE ¼ NE ¼ of Section 34, Township 31N, Range 10W, San Juan County, New Mexico. All work will be performed in accordance with accepted practices in geotechnical, environmental and petroleum engineering, and hydrogeology.

Envirotech will not perform work beyond the Scope of Services outlined herein without first obtaining approval from the Responsible Party and the NMOCD Environmental Division.

The Guidelines for Remediation of Leaks, Spills and Releases was reviewed and the Site Assessment Final Closure (Section VIII) will be enacted. The site will be assessed for potential risks, the need for remedial action and, if necessary, the level of cleanup required at the site. The guidelines written to be used as a guide on all federal, state and public lands when remediating contaminants resulting from leaks, spills and releases of oilfield wastes or products.

The contractor is hired by and works directly for the owner/operator. The owner/operator is responsible to pay for all costs which result from the investigation or cleanup activities and all costs resulting from the investigation or cleanup activities.

Respectfully Submitted,
ENVIROTECH, INC.

Reviewed by:

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Kyle P. Kerr
Chief Environmental Scientist/Manager
NMCES#299
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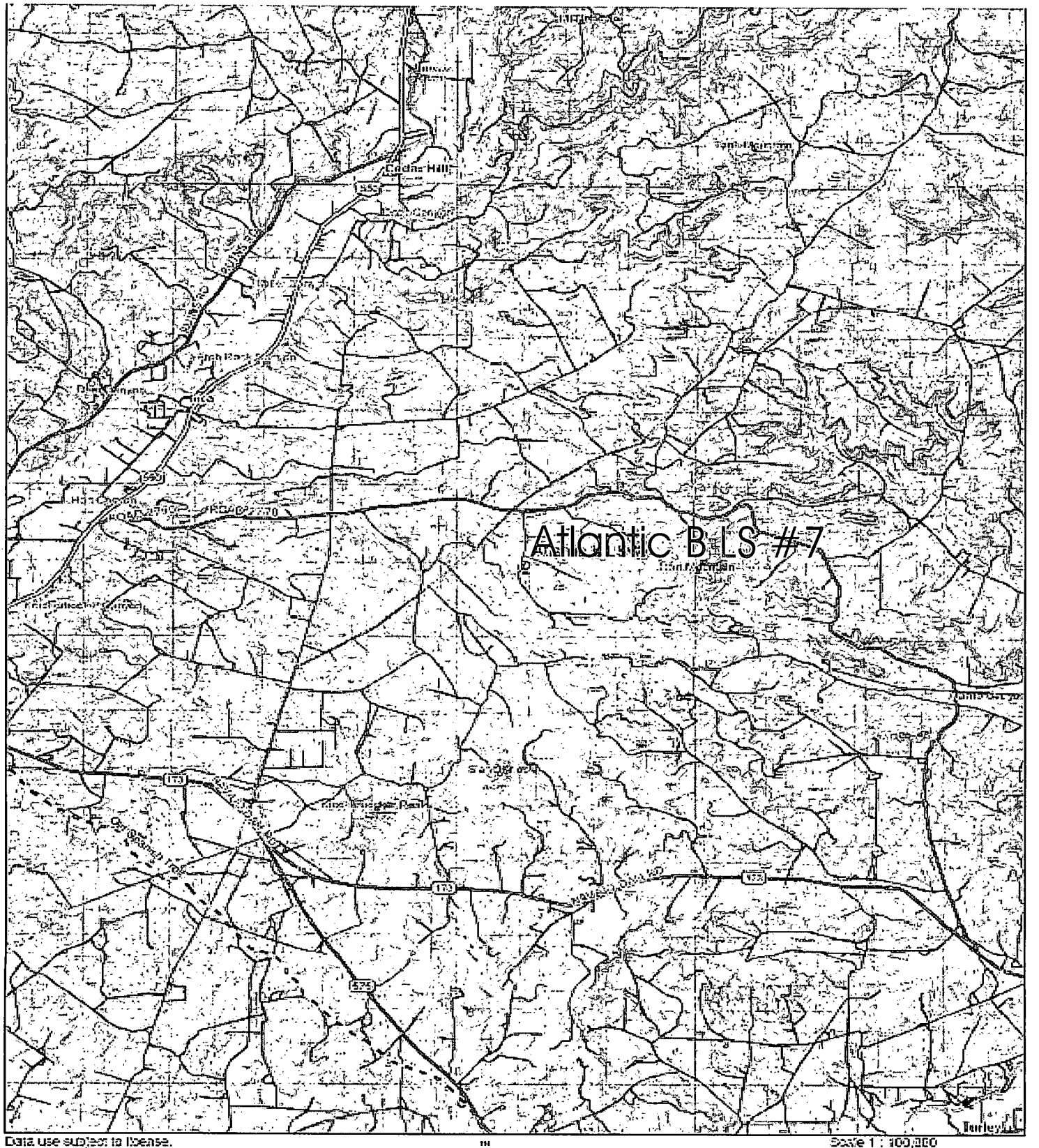
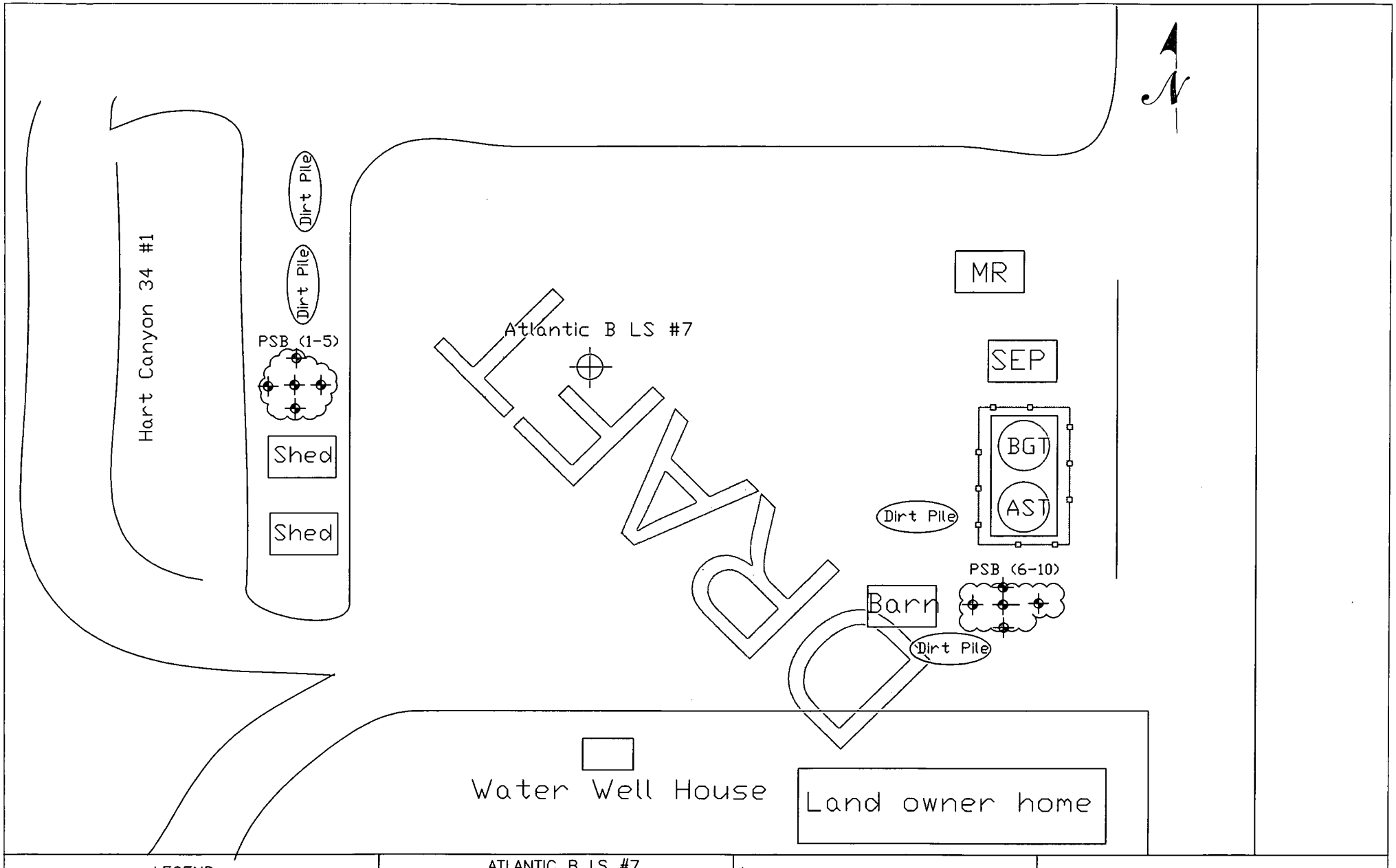
FIGURES



BP AMERICA - ATLANTIC B LS #7 SECTION 34, TOWNSHIP 31N, RANGE 10W SAN JUAN COUNTY, NEW MEXICO	ENVIROTECH INC. ENVIRONMENTAL SCIENTISTS & ENGINEERS 5796 U.S. HIGHWAY 64 FARMINGTON, NEW MEXICO 87401 PHONE (505) 632-0615	Vicinity Map Figure 1
Project# 03143-0019 | Date Drawn: 01/09/09		Drawn By: Toni McKnight | Project Manager: Kyle P. Kerr



LEGEND
- PROPOSED BORING LOCATION
- WELL HEAD
- APPROXIMATE LOCATION OF OLD PITS
- Dirt Piles

ATLANTIC B LS #7
SECTION 34, TOWNSHIP 31N, RANGE 10W
SAN JUAN COUNTY, NEW MEXICO

REVISIONS
BY ___ DATE ___
BY ___ DATE ___

PROJECT NO. 03143-0019

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS & ENGINEERS
5796 U.S. HIGHWAY 64
FARMINGTON, NEW MEXICO 87401
(505) 632-0615

SITE MAP

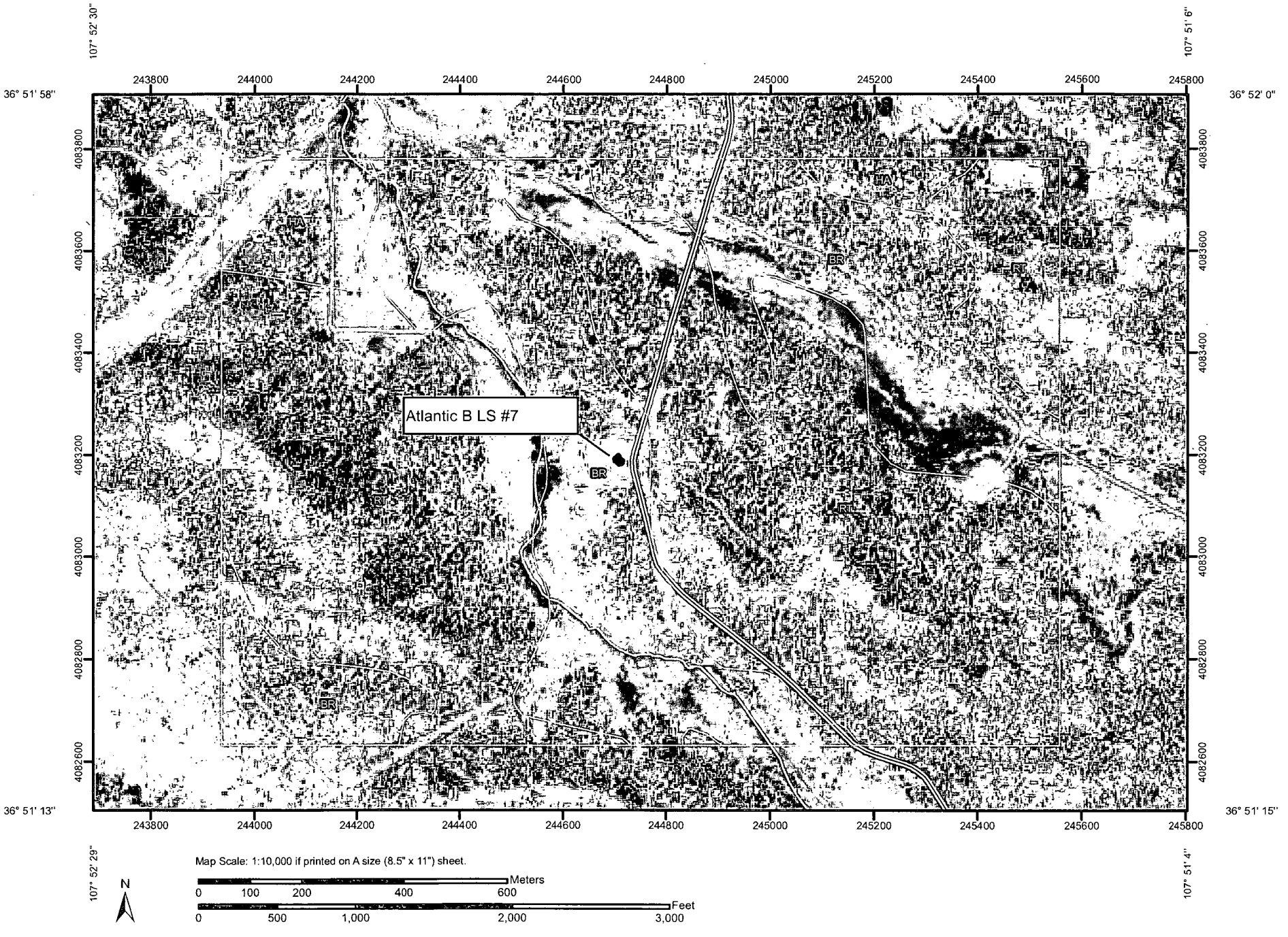
DATE 1/09/2009 DRAWN TLM
SCALE NTS APPROVED KPK

FIGURE 2

APPENDIX:

A: IINA BA INC RESULTS
B: WEB SOIL SURVEY
C: CATHODIC PROTECTION
D: iWATERS DATABASE

Soil Map—San Juan County, New Mexico, Eastern Part



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Oceans
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:10,000 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:63,360.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 13N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Juan County, New Mexico, Eastern Part
Survey Area Data: Version 8, Dec 9, 2008

Date(s) aerial images were photographed: 10/9/1997

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

San Juan County, New Mexico, Eastern Part (NM618)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
BR	Blancot-Fruitland association, gently sloping	161.4	35.1%
HA	Haplargids-Blackston-Torriorthents complex, very steep	23.2	5.0%
RT	Rock outcrop-Travessilla-Weska complex, extremely steep	275.1	59.8%
Totals for Area of Interest		**459.6**	**100.0%**

7-30-045-10190
18-30-045-22780

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator TENNECO Location: Unit NE Sec 34 Twp 31 Rng 10

Name of Well/Wells or Pipeline Serviced ATLANTIC B #7, #18

cps 336w

Elevation 6298' Completion Date 5/16/72 Total Depth 300' Land Type* N/A

Casing, Sizes, Types & Depths N/A

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amounts used

N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. 120'

RECEIVED
MAY 31 1991
OIL CON. DIV.
DIST.

Depths gas encountered: N/A

Type & amount of coke breeze used: 5900 lbs.

Depths anodes placed: 260', 250', 225', 215', 205', 175', 155', 140', 130', 120'

Depths vent pipes placed: N/A

Vent pipe perforations: 260'

Remarks: gb #2 **not a MERIDIAN well.**

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

7- 30-045-10190

18- 30-045-22780

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator TENNECO Location: Unit NE Sec. 34 Twp 31 Rng 10

Name of Well/Wells or Pipeline Serviced ATLANTIC B #7, #18

cps 336w

Elevation 6298' Completion Date 6/4/63 Total Depth 140' Land Type* N/A

Casing, Sizes, Types & Depths N/A

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amounts used

N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. N/A

Depths gas encountered: N?A

Type & amount of coke breeze used: 1200 lbs.

Depths anodes placed: 106', 100', 90', 84', 78', 72', 18'

Depths vent pipes placed: N/A

Vent pipe perforations: N/A

Remarks: gb #1 **not a MERIDIAN well.**

RECEIVED
MAY 31 1991
OIL CON. DIV.
DIST.

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

New Mexico Office of the State Engineer
Point of Diversion Summary

Back

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are biggest to smallest)

POD Number	Tws	Rng	Sec	q	q	q	Zone	X	Y
SJ 03387	31N	10W	34	2	2	1			

Driller Licence: 717 WESTERN WATER WELLS
Driller Name: HOOD, TERRY
Source: Shallow
Drill Start Date: 02/07/2004
Drill Finish Date: 02/08/2004
Log File Date: 02/13/2004
PCW Received Date:
Pump Type:
Pipe Discharge Size:
Casing Size: 4.5
Estimated Yield: 8
Depth Well: 250
Depth Water: 200

Water Bearing Stratifications:	Top	Bottom	Description
	200	250	Sandstone/Gravel/Conglomer

Casing Perforations:	Top	Bottom
	190	250