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

AUG 11 2009

Form C-144
July 21, 2008

For temporary pits, closed-loop systems, and below-grade tanks, submit to the appropriate NMOCD District Office.
For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

Pit, Closed-Loop System, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application

Type of action:
- ☐ Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method
- ☐ Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method
- ☐ Modification to an existing permit
- ☒ Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method

Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1.
Operator. BC Operating, Inc. OGRID #:
Address: P.O. Box 50820, Midland, Texas 79710
Facility or well name: Shell Federal #2
API Number: ~~30-015-34679~~ 30-015-34679 OCD Permit Number: N/A
U/L or Qtr/Qtr D Section 06 Township 21S Range 24E County: Eddy
Center of Proposed Design: Latitude N32° 31' 01.94 Longitude W104° 32' 41.01" NAD: ☒ 1927 ☐ 1983
Surface Owner: ☒ Federal ☐ State ☐ Private ☐ Tribal Trust or Indian Allotment

2.
☐ **Pit:** Subsection F or G of 19.15.17.11 NMAC
Temporary: ☒ Drilling ☐ Workover
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A
☒ Lined ☐ Unlined Liner type: Thickness 14 mil ☐ LLDPE ☐ HDPE ☒ PVC ☐ Other
☐ String-Reinforced
Liner Seams: ☒ Welded ☐ Factory ☐ Other Volume: 24,000 bbl Dimensions: L 130' x W 113' x D 10'

3.
☐ **Closed-loop System:** Subsection H of 19.15.17.11 NMAC
Type of Operation: ☐ P&A ☐ Drilling a new well ☐ Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)
☐ Drying Pad ☐ Above Ground Steel Tanks ☐ Haul-off Bins ☐ Other
☐ Lined ☐ Unlined Liner type: Thickness mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other
Liner Seams: ☐ Welded ☐ Factory ☐ Other

4.
☐ **Below-grade tank:** Subsection I of 19.15.17.11 NMAC
Volume: bbl Type of fluid:
Tank Construction material:
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other
Liner type: Thickness mil ☐ HDPE ☐ PVC ☐ Other

5.
☐ **Alternative Method:**
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

6.

Fencing: Subsection D of 19.15.17.11 NMAC *(Applies to permanent pits, temporary pits, and below-grade tanks)*

☐ Chain link, six feet in height, two strands of barbed wire at top *(Required if located within 1000 feet of a permanent residence, school, hospital, institution or church)*

☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet

☐ Alternate. Please specify_____

7.

Netting: Subsection E of 19.15.17.11 NMAC *(Applies to permanent pits and permanent open top tanks)*

☐ Screen ☐ Netting ☐ Other_____

☐ Monthly inspections (If netting or screening is not physically feasible)

8.

Signs: Subsection C of 19.15.17.11 NMAC

☐ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

☐ Signed in compliance with 19.15.3.103 NMAC

9.

Administrative Approvals and Exceptions:

Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.

Please check a box if one or more of the following is requested, if not leave blank:

☐ Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau office for consideration of approval.

☐ Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

10.

Siting Criteria (regarding permitting): 19.15.17.10 NMAC

Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. **Siting criteria does not apply to drying pads or above-grade tanks associated with a closed-loop system.**

Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☒ No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. *(Applies to temporary, emergency, or cavitation pits and below-grade tanks)* - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☒ No ☐ NA
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. *(Applies to permanent pits)* - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☒ No ☐ NA
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☒ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☒ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes ☒ No
Within a 100-year floodplain. - FEMA map	☐ Yes ☒ No

11.
Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
- ☐ Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☒ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

12.
Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9
- ☐ Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____

☐ Previously Approved Operating and Maintenance Plan API Number: _____ *(Applies only to closed-loop system that use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)*

13.
Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Climatological Factors Assessment
- ☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Quality Control/Quality Assurance Construction and Installation Plan
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Nuisance or Hazardous Odors, including H_2S, Prevention Plan
- ☐ Emergency Response Plan
- ☐ Oil Field Waste Stream Characterization
- ☐ Monitoring and Inspection Plan
- ☐ Erosion Control Plan
- ☐ Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

14.
Proposed Closure: 19.15.17.13 NMAC
Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.

Type: ☒ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ P&A ☐ Permanent Pit ☐ Below-grade Tank ☐ Closed-loop System ☐ Alternative

Proposed Closure Method: ☒ Waste Excavation and Removal
- ☐ Waste Removal (Closed-loop systems only)
- ☐ On-site Closure Method (Only for temporary pits and closed-loop systems)
  - ☐ In-place Burial ☐ On-site Trench Burial
- ☐ Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)

15.
Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

- ☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- ☒ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- ☒ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☒ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
- ☒ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

16.
Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: (19.15.17.13.D NMAC)
Instructions: Please indentify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two facilities are required.

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Will any of the proposed closed-loop system operations and associated activities occur on or in areas that *will not* be used for future service and operations?
☐ Yes (If yes, please provide the information below) ☐ No

Required for impacted areas which will not be used for future service and operations:
☐ Soil Backfill and Cover Design Specifications - - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

17.
Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC
Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 50 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Ground water is between 50 and 100 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☐ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☐ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes ☐ No
Within a 100-year floodplain. - FEMA map	☐ Yes ☐ No

18.
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***
☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
☐ Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of 19.15.17.11 NMAC
☐ Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.11 NMAC
☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
☐ Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)
☐ Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

19.
Operator Application Certification:

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): _Jaron Simon_____ Title: _Drilling and Completion Engineer_____

Signature: _____ Date: _8-10-09_____

e-mail address: _jsimon@blackoakres.com_____ Telephone: _(432) 684-9696, Ext. 250_____

20.
OCD Approval: ☐ Permit Application (including closure plan) ☒ Closure Plan (only) ☒ OCD Conditions (see attachment)

OCD Representative Signature: Signed By _____ **Approval Date:** AUG 24 2009

Title: _____ **OCD Permit Number:** N/A

21.
Closure Report (required within 60 days of closure completion): Subsection K of 19.15.17.13 NMAC

Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.

☐ **Closure Completion Date:**_____

22.
Closure Method:

☐ Waste Excavation and Removal ☐ On-Site Closure Method ☐ Alternative Closure Method ☐ Waste Removal (Closed-loop systems only)

☐ If different from approved plan, please explain.

23.
Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:

Instructions: Please indentify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Were the closed-loop system operations and associated activities performed on or in areas that *will not* be used for future service and operations?

☐ Yes (If yes, please demonstrate compliance to the items below) ☐ No

Required for impacted areas which will not be used for future service and operations:

☐ Site Reclamation (Photo Documentation)
☐ Soil Backfilling and Cover Installation
☐ Re-vegetation Application Rates and Seeding Technique

24.
Closure Report Attachment Checklist: ***Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.***

☐ Proof of Closure Notice (surface owner and division)
☐ Proof of Deed Notice (required for on-site closure)
☐ Plot Plan (for on-site closures and temporary pits)
☐ Confirmation Sampling Analytical Results (if applicable)
☐ Waste Material Sampling Analytical Results (required for on-site closure)
☐ Disposal Facility Name and Permit Number
☐ Soil Backfilling and Cover Installation
☐ Re-vegetation Application Rates and Seeding Technique
☐ Site Reclamation (Photo Documentation)

On-site Closure Location: Latitude _____ Longitude _____ NAD: ☐1927 ☐ 1983

25.
Operator Closure Certification:

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): _____ Title: _____

Signature: _____ Date: _____

e-mail address: _____ Telephone: _____

New Mexico Energy, Minerals and Natural Resources Department

Bill Richardson
Governor

Joanna Prukop
Cabinet Secretary

Mark Fesmire
Division Director
Oil Conservation Division

Conditions of approval for closure of a drilling or work over pit

Notify OCD District 2 office 48 hours prior to commencement of closure activities.

Notify OCD District 2 office 48 hours prior to obtaining samples where analyses of samples obtained are to be submitted to OCD.

Sampling requirements are listed in 19.15.17.13 [NMAC] (Pit Rule)

Final closure report is to be submitted to OCD not later than 60 days after completion of closure.

Surface restoration per OCD/BLM requirements.

* Note: Pit closure will require top 4' to contain 3' clean material w/ 1' topsoil - Placing liner @ 2' bgs is not approved.

AUG 11 2009

LETTER OF TRANSMITTAL

ENVIRONMENTAL PLUS, INC.

Date:	July 28, 2009
To:	**Mr. Mike Bratcher**
Company Name:	New Mexico Oil Conservation Division
Address:	1301 West Grand
City / State / Zip:	Artesia, New Mexico 88210
From:	David P. Duncan
CC:	Jaron Simon, BC Operating, Inc. – Midland, Texas Paul Evans, BLM – Carlsbad, New Mexico File
Project #:	EPI Ref. #M2009-0003
Project Name:	Shell Federal #2
Subject:	**Drilling Pit Remediation Proposal**

# of originals	# of copies	Description
1		BC Operating, Inc. – Shell Federal #2 Drilling Pit Remediation Proposal

Remarks

Dear Mr. Bratcher:

Enclosed is a bound copy of a *Remediation Proposal* for the above referenced site. Upon NMOCD approval, EPI will initiate remedial phase of the project. Should you have any technical questions, concerns or need additional information, please contact me at (575) 394-3481 (office), (575) 441-7802 (cellular) or via email at dduncan@envplus.net. Official communications/correspondence should be directed to Mr. Jaron Simon, BC Operating, Inc., at (432) 684-9696, Ext. 250 (office), (432) 425-6578 (cellular) or via e-mail at jsimon@blackoakres.com

Sincerely,

David P. Duncan
Civil Engineer
EPI Project Manager

P. O. Box 1558
Eunice, NM 88231
(575) 394-3481
Fax: (575) 394-2601

DRILLING PIT REMEDIATION PROPOSAL

SHELL FEDERAL #2

EPI REF: #M2009-0003

UL-D (NW¼ OF THE NW¼) OF SECTION 06, T 21 S, R 24 E

~20 MILES WEST BY NORTHWEST OF CARLSBAD,

EDDY COUNTY, NEW MEXICO

LATITUDE: N 32° 31' 01.94" LONGITUDE: W 103° 32' 41.01"

JULY 2009

PREPARED BY:

ENVIRONMENTAL PLUS, INC.
P.O. BOX 1558
2100 WEST AVENUE O
EUNICE, NEW MEXICO 88231

PREPARED FOR:

BC OPERATING, INC.

P.O. BOX 50820

MIDLAND, TEXAS 79710

ENVIRONMENTAL PLUS, INC.
CONSULTING AND ENVIRONMENTAL REMEDIATION

28 July 2009

Mr. Mike Bratcher
Environmental Engineer
New Mexico Oil Conservation Division
1301 West Grand
Artesia, New Mexico 88210

RE: Remediation Proposal
BC Operating, Inc.
Shell Federal #2 Drilling Reserve Pit
UL-D (NW ¼ of the NW ¼) of Section 06, T21S, R24E
Latitude: N32° 31' 01.94"; Longitude: W104° 32' 41.01"
Eddy County, New Mexico
EPI Ref. #M2009-0003

Dear Inge:

Environmental Plus, Inc., (EPI) on behalf of Mr. Jaron Simon, BC Operating, Inc., presents the following letter form *Remediation Proposal* for the above referenced project.

Remediation activities will be initiated to bring the drilling reserve pit into conformance with both NMOCD and BLM requirements. For clarity and cross reference elimination purposes, the following letter form offers Site Background History, Analytical Data and Site Remedial Proposal.

Site Background

The Site is located in UL-D (NW¼ of the NW ¼) of Section 06, T21S, R24E at an approximate elevation of 3,680 feet above mean sea level (amsl). The property is owned by the Department of the Interior and managed by the Bureau of Land Management (BLM). 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 average water depth is approximately 100 feet below ground surface (bgs). Based on available information, projected distance between impacted soil and groundwater is less than100 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 mg/Kg
BTEX	50 mg/Kg
TPH	2,500 mg/Kg
Chlorides	500 mg/Kg

P O BOX 1558 ••• 2100 AVENUE O ••• EUNICE, NEW MEXICO 88231
TELEPHONE 575•394•3481 ••• FAX 575•394•2601

Analytical Data

Soil samples collected will be field analyzed using the following methods described below:

Organic Vapor Concentrations – A portion of each soil sample will be inserted into a self-sealing polyethylene bag to allow volatilization of organic vapors. After allowed to equilibrate to ~70° F, soil samples are analyzed for organic vapors concentrations utilizing a MiniRae® Photoionization Detector (PID) equipped with a 10.6 electron volt (eV) lamp calibrated for Benzene response..

Chloride Concentrations – A LaMotte Chloride Kit (Titration Method) is used for analyses of chloride concentrations

After field analysis confirm soil samples are below NMOCD Remedial Threshold Goals for chloride and TPH concentrations, remainder of the soil sample will be inserted into a sample jar, labeled and placed on ice in a cooler for transportation to an independent laboratory for confirmatory analytical analyses.

Field and laboratory analyses will focus on chloride concentrations as past experience with production pit remediation indicates TPH is not the dominant contaminant.

Site Remedial Proposal

Impacted contents of the drilling reserve pit (drill tailings, drilling mud, etc.) will be consolidated with existing excavated material to form a cohesive mass void of free water. Upon completion of consolidation activities, the impacted material will be transported to Lea Land, Inc., (Permit Number WM-1-035) for disposal. Selective top soil will be transported on return trips and stockpiled for later distribution. Following removal of impacted material and pit liner, interior sidewalls and bottom of the drilling pit will be field analyzed for chloride and TPH concentrations. Dependent on field analyses results, the drilling pit may be backfilled immediately or require additional excavation to remove impacted material. Judging from size of rocks located in stockpiled material, bottom of drilling reserve pit is extremely dense and may not be excavated using conventional methods. Without delineation via soil borings, extent of impacted material will not be known. However, contamination will be limited to fissures and interstices in the rock formation as it cannot be adsorbed by the dense material. EPI will make a concentrated effort to remove impacted material from the bottom using conventional excavation methods. However, should these efforts fail to produce desired results, it is recommended placing a 20-mil polyethylene liner enveloped between two (2) feet thick layers of either clean top soil or sand to seal bottom of the drilling reserve pit.

Primary concern is excavation of sidewalls until NMOCD Remedial Threshold Goals are attained. Ideally excavation of sidewalls, if required, should be to whatever horizontal extent is necessary for removal of impacted material until chloride concentrations are below NMOCD Remedial Threshold Goals of 500 mg/Kg. However, certain limitations must be placed on width of excavation as excessive excavation may prove to be neither performance nor cost effective. EPI proposes initiating a maximum width of two (2) horizontal feet with field analyses of soil samples for chloride concentrations. Should chloride impacts indicate a rapid decrease in concentrations, excavation will continue until NMOCD Remedial Threshold Goals are achieved.

However, if sidewalls indicate protracted excavation is required to achieve these Goals, the drilling reserve pit may revert to a "risk based closure".

Factors considered into "risk based closure" procedures are depth of groundwater and projected size/volume of impacted area. If a 20-mil polyethylene liner is installed over the drilling reserve pit, it will retard downward flow of water preventing migration of contaminants to groundwater. Similarly, the dense rock formation is a physical barrier allowing migration of contaminants via interstices and fissures. Although exact dimensions/volumes are not known, the contaminated area is relatively small. With groundwater located approximately 100 vertical feet bgs, migration of contaminants are retarded by physical and possible man made barriers while natural attenuation should dissipate concentrations preventing an impact on groundwater.

After both sidewalls and bottom approval is received from NMOCD, backfilling of the drilling reserve pit will commence. Bottom portion of the drilling reserve pit will be backfilled with stockpiled rocks. If a 20-mil polyethylene liner is not installed, stockpiled material will backfill over large rocks ending within two (2) feet of original ground surface. The remaining two (2) feet will be backfilled with imported top soil.

However, if a 20-mil polyethylene liner is installed, the bottom will still be backfilled with large rocks. Sufficient stockpiled material will be backfilled over the large rocks to a depth of approximately two (2) feet. A two (2) foot layer of top soil or cushion sand will be placed on the backfill material, 20-mil polyethylene liner installed and remainder of excavation backfilled with imported top soil to original ground surface. The liner will extend vertical up the sidewalls to within six (6) inches of original ground surface.

Backfilled top soil will be mounded in the center and sloped radially outward to perimeter of drilling reserve pit. Disturbed areas will be contoured to allow natural drainage and prevent water pooling plus wind/water erosion. These areas will be disked and drill seeded with a mixture approved by the BLM when ground conditions are conducive to vegetation growth.

Upon approval of the *Remediation Proposal*, EPI will initiate remedial phase of the project. At conclusion of the project, a *Site Closure Report* will be submitted to NMOCD, BC Operating, Inc. and BLM.

Should you have any technical questions or concerns, please contact me at (575) 394-3481 (office), (575) 441-7802 (mobile) or via email at dduncan@envplus.net. Please direct official communications to Mr. Jaron Simon at (432) 684-9696, Ext. 250 (office), (432) 425-6578 (cellular) or via email at jsimon@blackoakres.com with correspondence addressed to:

Mr. Jaron Simon
BC Operating, Inc.
P.O. Box 50820
Midland, Texas 79710

Sincerely,

ENVIRONMENTAL PLUS, INC.

David P. Duncan
Civil Engineer

Cc: Jaron Simon – BC Operating, Inc.
Cody Miller - General Manager, EPI
Roger Boone - Operations Superintendent, EPI
Paul Evans - Environmental Protection Specialist, BLM

Encl: Figure 1 – Area Map
Figure 2 – Site Location Map
Figure 3 – Site Map
Table 1 – Well Data
Attachment I – Site Photographs
Attachment II – Copy of Initial NMOCD Form C-144 (06-01-04 Version)
Attachment III – NMOCD Form C-144 (7-21-08 Version)
Attachment IV – Copy of Letter of Violation - Inspection

FIGURES

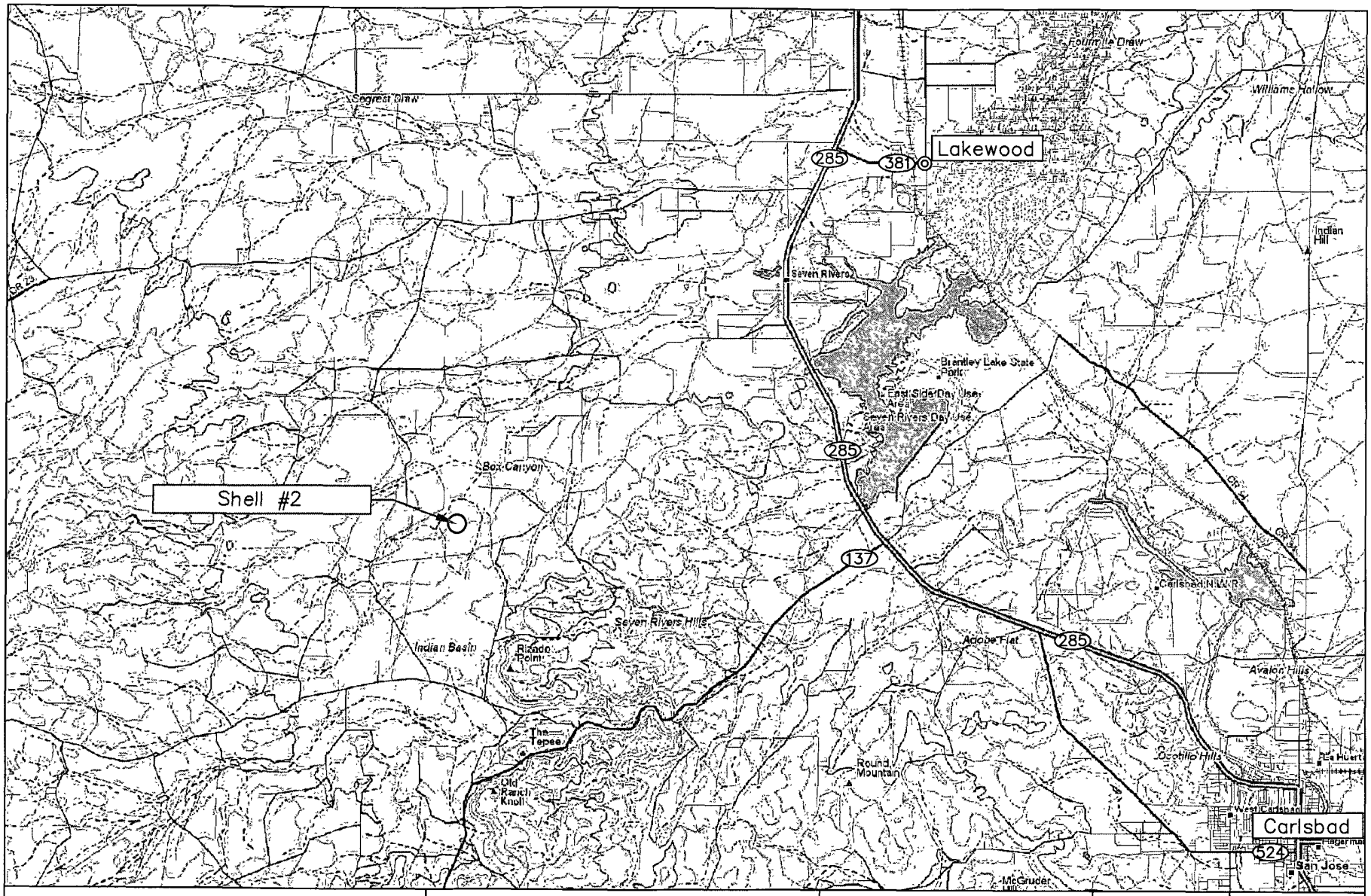


Figure 1 Area Map BC Operating Shell #2	Eddy County, New Mexico NW 1/4 of the NW 1/4, Sec. 6, T21S, R24E N 32°31' 02.35" W 104°32' 42.93" Elevation: 3,680 feet amsl	DWG By: D Dominguez July 2009	REVISED: SHEET 1 of 1

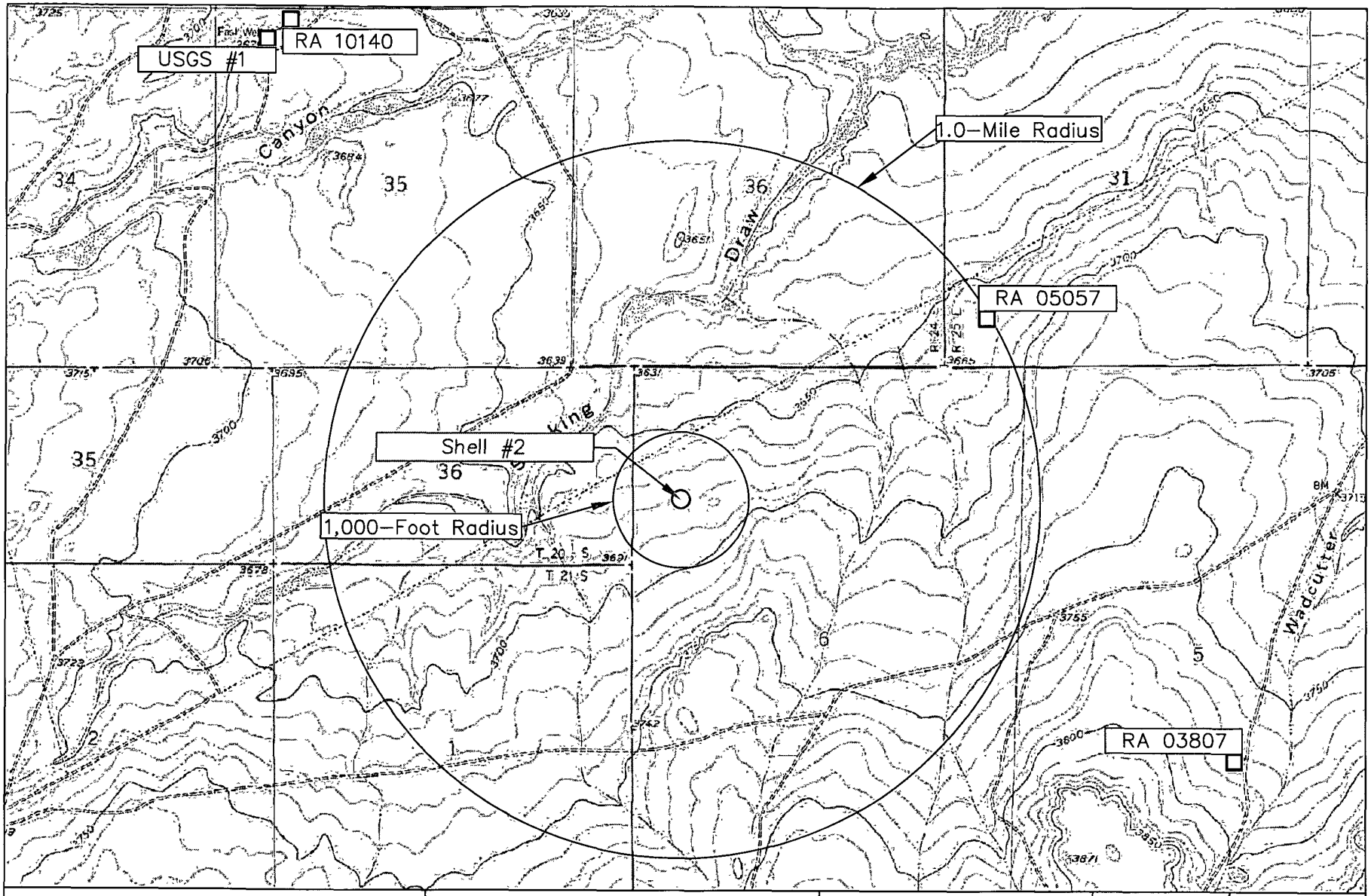
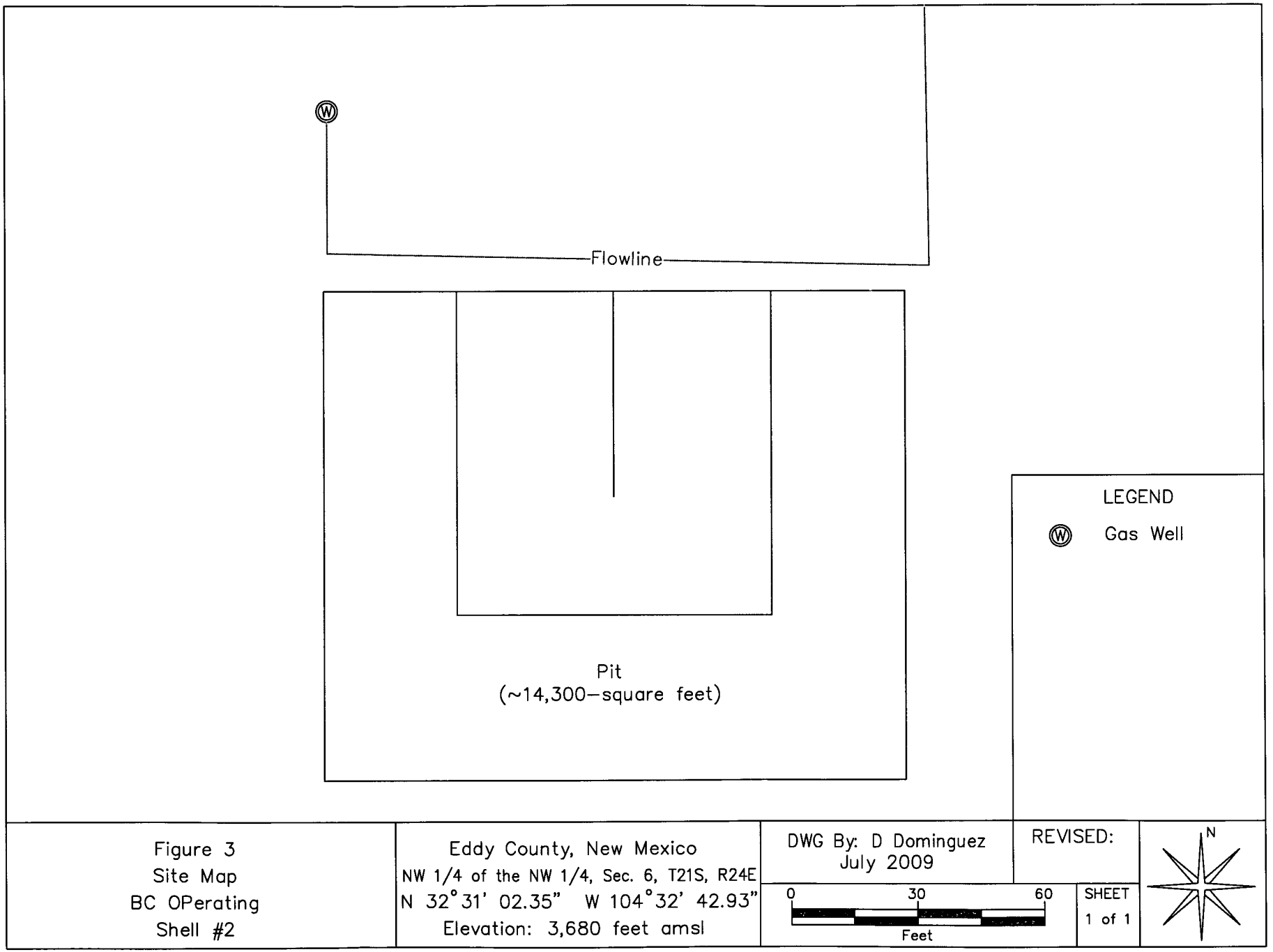


Figure 2 Site Location Map BC Operating Shell #2	Eddy County, New Mexico NW 1/4 of the NW 1/4, Sec. 6, T21S, R24E N 32°31' 02.35" W 104°32' 42.93" Elevation: 3,680 feet amsl	DWG By: D Dominguez July 2009	REVISED:
		0 2,000 4,000 Feet	SHEET 1 of 1
			N


Flowline
Pit
(~14,300–square feet)
LEGEND
Gas Well
Figure 3
Site Map
BC OPerating
Shell #2
Eddy County, New Mexico
NW 1/4 of the NW 1/4, Sec. 6, T21S, R24E
N 32°31' 02.35" W 104°32' 42.93"
Elevation: 3,680 feet amsl
DWG By: D Dominguez
July 2009
REVISED:
0
30
60
Feet
SHEET
1 of 1
N

TABLES

TABLE 1

Well Data

BC Operating - Shell #2

Well Number	Diversion[A]	Owner	Use	Twsp	Rng	Sec q q q	Latitude	Longitude	Date Measured	Surface Elevation[B]	Depth to Water (ft bgs)
RA 03807	3	JIM HOWELL	STK	21S	24E	05 4 1	N32° 30' 24.91"	W104° 31' 8.50"		3,775	
RA 10140	3	HENRY TERPENING	STK	20S	24E	35 1 1 2	N32° 32' 11.14"	W104° 33' 50.52"		3,669	
RA 05057	3	HAROLD HOUGHTALING	STK	20S	25E	31 3 3	N32° 31' 28.39"	W104° 31' 50.63"	07-Dec-64	3,671	312
USGS #1				20S	24E	35 1 1 2			1/17/1963	3,675	166.55
C 03245	3	RICHARD HOWELL	DOM	20S	25E	32 4 1 3	N32° 31' 38.19"	W104° 30' 21.49"	10-Jan-06	3,625	100
RA 08641	3	RICHARD HOWELL	STK	20S	25E	32 4 1 4	N32° 31' 38.16"	W104° 30' 13.83"		3,625	
USGS #2				20S	25E	32 4 1 3			3/7/1990	3,625	107.41

* = Data obtained from the New Mexico Office of the State Engineer Website (http://iwaters.ose.state.nm.us:7001/iWATERS/wr_RegisServlet1) and USGS Database

[A] = In acre feet per annum

[B] = Elevation interpolated from USGS topographical map based on referenced location.

DOM = 72-12-1 Domestic one household

STK = 72-12-1 Livestock Watering

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

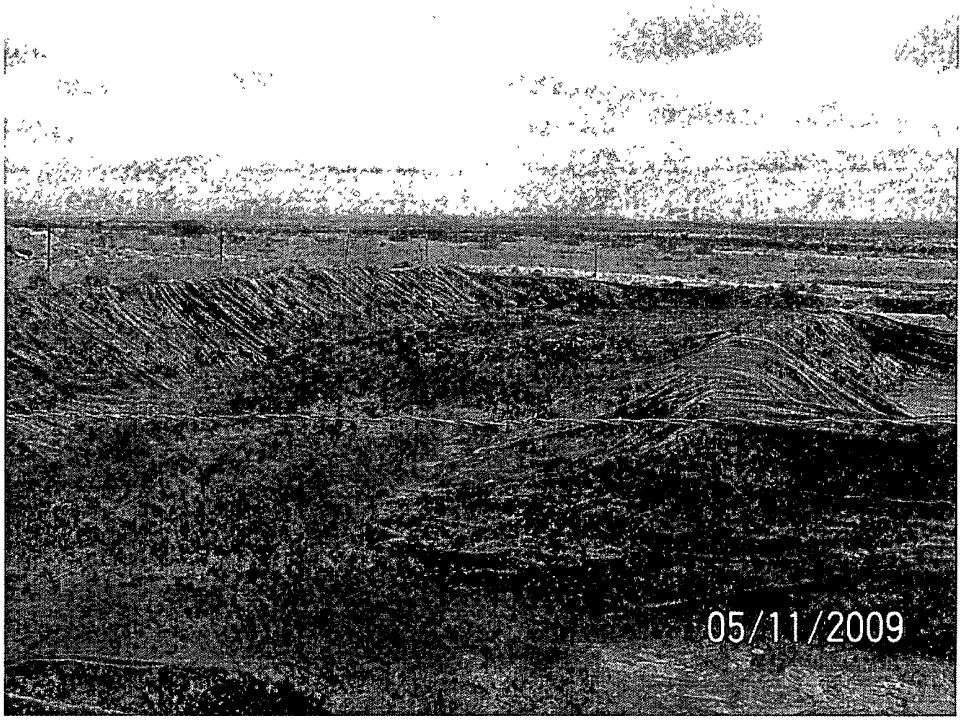
Shaded area indicates wells not shown in Figure 2

ATTACHMENTS

ATTACHMENT I
PHOTOGRAPHS

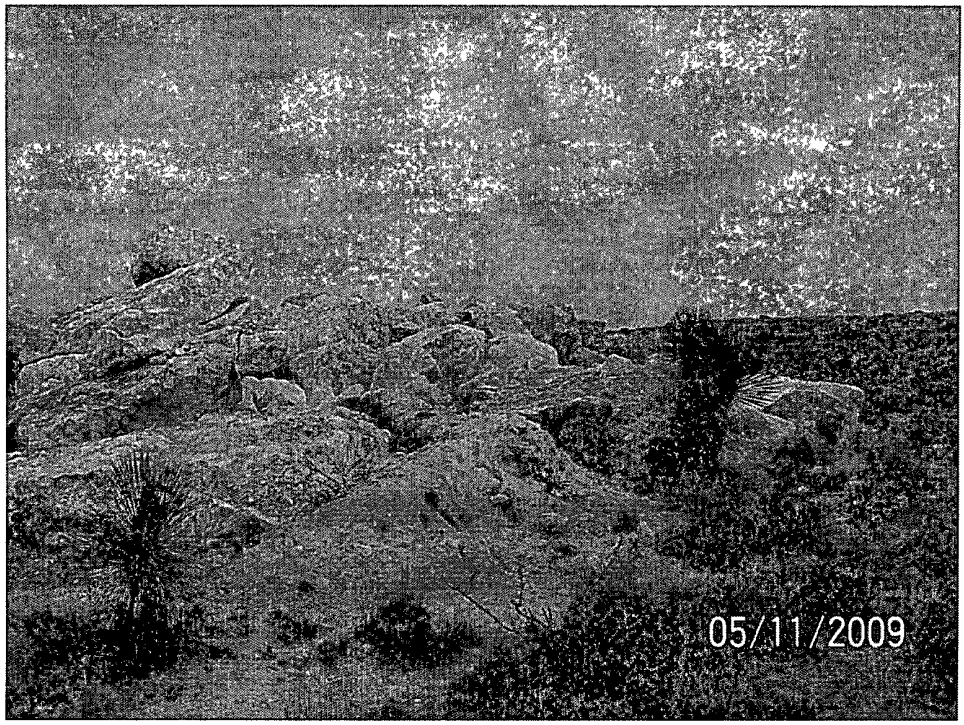
Photograph No. 1 – Looking southwest at interior of Production Pit

Photograph No. 2 – Looking at northeast corner or Production Pit, impacted material and stockpiled material in background



Photograph No. 3 – Looking northerly at Production Pit and impacted material

Photograph No. 4 – Looking northwest at Production Pit and impacted material



Photograph No. 5 – Looking at large rocks in stockpiled backfill material

Photograph No. 6 – Looking at stockpiled backfill material and large rocks

ATTACHMENT II
COPY OF NMOCD FORM C-144 (06-01-04 Version)

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-144
June 1, 2004

For drilling and production facilities, submit to appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe office

Pit or Below-Grade Tank Registration or Closure

Is pit or below-grade tank covered by a "general plan"? Yes ☐ No ☒
Type of action: Registration of a pit or below-grade tank ☒ Closure of a pit or below-grade tank ☐

Operator: B.C. OPERATING, INC. Telephone: (432) 683-2950 e-mail address: kwidner@usaonline.net
Address: P.O. Box 50820, Midland, TX 79705
Facility or well name: Shell Federal #2 API #: _____ U/L or Qtr/Qtr 23 Sec 6 T 21S R 24E
County: Eddy Latitude 434,840.4 Longitude 551,936.8 NAD: 1927 ☒ 1983 ☐
Surface Owner: Federal ☐ State ☐ Private ☐ Indian ☐

Pit	Below-grade tank
Type: Drilling ☒ Production ☐ Disposal ☐ Workover ☐ Emergency ☐ Lined ☒ Unlined ☐ Liner type: Synthetic ☒ Thickness 14 mil Clay ☐ Pit Volume 24,000 bbl	Volume: ____ bbl Type of fluid _____ Construction material: _____ Double-walled, with leak detection? Yes ☐ If not, explain why not.

Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	Less than 50 feet 50 feet or more, but less than 100 feet 100 feet or more	(20 points) (10 points) (0 points)
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes No	(20 points) (0 points)
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet 200 feet or more, but less than 1000 feet 1000 feet or more	(20 points) (10 points) (0 points)
	Ranking Score (Total Points)	**10 points**

If this is a pit closure: (1) Attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: (check the onsite box if your are burying in place) onsite ☐ offsite ☐ If offsite, name of facility_____. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☐ Yes ☐ If yes, show depth below ground surface_____ft. and attach sample results.
(5) Attach soil sample results and a diagram of sample locations and excavations

Additional Comments:

I hereby certify that the information above is true and complete to the best of my knowledge and belief. **I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.**

Date: 2/8/06
Printed Name/Title Kevin Widner, Operations Manager Signature _____

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval:
Printed Name/Title _____ Signature _____ Date: _____

Attachment III
NMOCD Form C-144 (07-21-08 Version)

Attachment IV
Copy of Letter of Violation - Inspection

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Mark E. Fesmire, P.E.
Director
Oil Conservation Division

Response Required – Deadline Enclosed

17-Jul-09

BC DEVELOPMENT, LP
PO BOX 50820
MIDLAND TX 79710

LOV NO. 02-09-038

LETTER OF VIOLATION - Inspection

Dear Operator:

The following inspection(s) indicate that the well, equipment, location or operational status of the well(s) failed to meet standards of the New Mexico Oil Conservation Division as described in the detail section below. To comply with standards imposed by Rules and Regulations of the Division, corrective action must be taken immediately and the situation brought into compliance. The detail section indicates preliminary findings and/or probable nature of the violation. This determination is based on an inspection of your well or facility by an inspector employed by the Oil Conservation Division on the date(s) indicated.

Please notify the proper district office of the Division, in writing, of the date corrective actions are scheduled to be made so that arrangements can be made to reinspect the well and/or facility

INSPECTION DETAIL SECTION

SHELL FEDERAL No.002 23-6-21S-24E **30-015-34679-00-00**

Inspection Date	Type Inspection	Inspector	Violation?	*Significant Non-Compliance?	Corrective Action Due By:	Inspection No.
07/16/2009	Routine/Periodic	Richard Inge	Yes	No	7/31/2009	iREI0919738255

Comments on Inspection: Violation of OCD rule 17 Drilling pit is on location containing fluids and solids. The liner has been breached. Submit OCD form C-144 with a pit closure plan by Completion Action Due By date with the pit to be closed within 1 month of the closure approval by the OCD.

In the event that a satisfactory response is not received to this letter of direction by the "Corrective Action Due By:" date shown above, further enforcement will occur. Such enforcement may include this office applying to the Division for an order summoning you to a hearing before a Divison Examiner in Santa Fe to show cause why you should not be ordered to permanently plug and abandon this well. Such a hearing may result in imposition of CIVIL PENALTIES for your violation of OCD rules.

Sincerely,

RICHARD INGE

Artesia OCD District Office

Note: Information in Detail Section comes directly from field inspector data entries - not all blanks will contain data
*Significant Non-Compliance events are reported directly to the EPA, Region VI, Dallas, Texas