R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

July 20, 2010

30-025-39593

Mr. Geoffrey Leking
NMOCD District
1625 French Drive
Hobbs, NM 88240
Via E-Mail

Mr. Brad Jones
NMOCD Environmental Bureau
1220 St. Francis Drive
Santa Fe, New Mexico
Via E-Mail

RE: Lusk 31 Federal #3, Lynx Petroleum Consultants

Dear Geoffrey and Brad:

This submission includes:

1. This transmittal letter
2. Modified C-144 Form signed by the operator
3. Modified C-144 Supplemental Documentation which includes
    a. Figures 1-13
    b. Appendix A, photo-documentation of the site conditions prior to pit construction
    c. Appendix B, images of the pit construction
    d. Appendix C, the previously-approved C-144
4. Application for Exceptions
    a. Appendix D compares NMOCD criteria for pits v. burial trench
    b. Draft public notice

Please note that the Application for Exceptions and the Modified C-144 Supplemental Documentation both refer to the previously-approved C-144 as Appendix C. Appendix D is unique to the Application for Exceptions and is labeled Appendix D to avoid confusion with Appendices associated with the modified C-144.

Below we list the provisions of NMOCD Rules from which we request an exception. Lynx will comply with all other provisions of NMOCD Rules.

Exception Request to NMOCD Rule 19.15.17.F.3 (c)

The text of the Rule states:

> **(c)** The operator shall collect at a minimum, a five point, composite sample of the contents of the drying pad associated with a closed-loop system or of the temporary pit to demonstrate that the TPH concentration, as determined by EPA method 418.1 or other EPA method that the division approves, does not exceed 2500 mg/kg. Using EPA SW-846 method 1312 or other EPA leaching procedure that the division approves, the operator shall demonstrate that (i) the chloride concentration, as determined by EPA method 300.1 or other EPA method that the division approves, does not exceed 3000 mg/l or the background concentration, whichever is greater, (ii) the concentrations of the inorganic water contaminants specified in Subsection A of 20.6.2.3103 NMAC as determined by appropriate EPA methods do not exceed the standards specified in Subsection A of 20.6.2.3103 NMAC or the background concentration, whichever is greater, and (iii) the concentrations of the organic water contaminants specified in Subsection A of 20.6.2.3103

> NMAC as determined by appropriate EPA methods do not exceed the standards specified in Subsection A of 20.6.2.3103 NMAC, unless otherwise specified above. The operator may collect the composite sample prior to treatment or stabilization to demonstrate that the contents do not exceed these concentrations. However, if the contents collected prior to treatment or stabilization exceed the specified concentrations the operator shall collect a second five point, composite sample of the contents after treatment or stabilization to demonstrate that the contents do not exceed these concentrations.

We request an exception to the requirement to use concentration limits to demonstrate that the contents of the temporary pit meet the standard of care identified in NMOCD Rules for trench burial. As described in the attachment, the mass of constituents in a burial trench is the factor that determines if trench burial will impair ground water or soils, not the concentration. With respect to the potential of contaminants moving from the trench into the root zone, the attachment describes how the depth of burial and the upper liner combine to provide the same level of protection as compliance with concentration limits.

Exception Request to NMOCD Rule 19.15.17.F.3 (e)

The text of the Rule states:

> **(e)** The operator shall close each drying pad associated with a closed-loop system or temporary pit by excavating and transferring all contents and synthetic pit liners or liner material associated with a closed-loop system or temporary pit to a lined trench. The excavated materials shall pass the paint filter liquids test (EPA SW-846, method 9095) and the closure standards specified in Subparagraph (c) of Paragraph (3) of Subsection F of 19.15.17.13 NMAC.

We request an exception to the requirement to excavate and transfer all contents and pit liners to a lined trench. As described below, we propose to re-use the drilling pit as the burial trench, which would obviate the need for excavation and transfer of materials.

Exception Request to NMOCD Rule 19.15.17.F.3 (f)(ii)

The text of the Rule states:

> **(f)** The operator shall test the soils beneath the temporary pit after excavation to determine whether a release has occurred.
> **(i)** Where ground water is between 50 and 100…
> **(ii)** Where ground water is more than 100 feet below the bottom of the temporary pit, the operator shall collect at a minimum, a five point, composite sample; collect individual grab samples from any area that is wet, discolored or showing other evidence of a release; and analyze for BTEX, TPH, benzene, GRO and DRO combined fraction and chlorides to demonstrate that benzene, as determined by EPA SW-846 method 8021B or 8260B, does not exceed 0.2 mg/kg; total BTEX, as determined by EPA SW-846 method 8021B or 8260B, does not exceed 50 mg/kg; the GRO and DRO combined fraction, as determined by EPA SW-846 method 8015M, does not exceed 500 mg/kg; TPH, as determined by EPA method 418.1 or other EPA method that the division approves, does not exceed 2500 mg/kg; and chlorides, as determined by EPA method 300.1, do not exceed 1000 mg/kg or the background concentration, whichever is greater. The operator shall notify the division of its results on form C-141. The division may require additional delineation upon review of the results.

We request an exception to the requirement to test the soils beneath the temporary pit after excavation to determine whether a release has occurred. As described in the attachment, we propose to employ a leak detection system in lieu of soil sampling. If the leak detection system gives evidence of a leak in the pit, we will remove the cuttings from the pit and bury them in a trench per standard rules and regulations.

Summary

As described in the attachment, Lynx proposes, should the pit remain intact during drilling, to:

- Re-use the drilling pit as the burial trench,
- Remove brine (and any entrained constituents of concern) from the pit, thereby reducing the mass of buried salt,
- Use fluid removal (via under-drain pumping) and drying of the solids as the primary stabilization method rather than increasing the volume of waste by adding clean soil.

We do not believe the application requests an alternative closure method as trench burial is the proposed method of closure – therefore we did not check that box on the C-144 Modification form. The proposal simply calls for re-using a drilling pit with documented integrity (no leakage) as the burial trench. In order to re-use the pit, the protocol requires stabilization of the solids by drying rather than increasing the volume of waste by dilution with clean soil and an alternative to soil sampling to test for a release.

You will also notice that site conditions dictated construction of the reserve pit with 2H:1V slopes, which is consistent with the prescriptive mandates of NMOCD Rules.

Sincerely,
R.T. Hicks Consultants, Ltd.

Randall T. Hicks
President

Copy: Larry Scott, Lynx Petroleum Consultants
Jim Amos, Bureau of Land Management (via E-mail)

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

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State of New Mexico
Energy Minerals and Natural Resources
Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

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: Lynx Petroleum Consultants, OGRID #: 013645
Address: PO Box 1708, Hobbs NM 88241
Facility or well name: Lusk 31 Federal #3
API Number: 30-025-39593 OCD Permit Number:
U/L or Qtr/Qtr NW/SE Section 31 Township 18S Range 32E County: Lea
Center of Proposed Design: Latitude 32 42 07.04 Longitude -103 48 13.75 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 20 mil ☒ LLDPE ☐ HDPE ☐ PVC ☐ Other
☒ String-Reinforced
Liner Seams: ☒ Welded ☒ Factory ☐ Other Volume: 16,700 bbl Dimensions: L 136 x W 104 x D 6-10

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___Not Applicable_____

☐ 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 SEE FIGURE	☐ 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 SEE FIGURE	☐ 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 SEE Figure	☐ 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 SEE figure	☐ 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 Figure	☐ 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. SEE FIGURE - 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 Figure	☐ Yes ☒ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division SEE FIGURE	☐ Yes ☒ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map SEE EXPLANATION and Figure	☐ Yes ☒ No
Within a 100-year floodplain. - FEMA map No FEMA Map exists, see explanation in text	☐ 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): Larry Scott Title: President

Signature: Date:

e-mail address: lrscott@leaco.net Telephone: 575 392 6950

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

OCD Representative Signature: **Approval Date:**

Title: **OCD Permit Number:**

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): Larry R. Scott Title: President

Signature: Larry R. Scott Date: 07-20-10

e-mail address: lynxpet@leaco.net Telephone: 575-392-6950

C-144 Modification Supplemental Documentation
Lusk 31 Federal #3 API # 30-025-39593

Introduction

This document clarifies information in the C-144 Supplemental Documentation, dated June 8, 2010, approved by Geoffry Leking, June 16, 2010 and presents additional proposed modifications. All statements in the approved C-144 are true and correct, to the best of our knowledge. Further, Lynx Petroleum Consultants, Inc. (Lynx) requests three exceptions to NMOCD Rules as detailed in the attached Application for Exceptions. Lynx will adhere to all other prescriptive mandates of NMOCD Rules.

As described in this modification, the drilling pit lined slopes are 2H:1V as prescribed by NMOCD Rules. Site conditions favored this slope rather than the originally-proposed 1.5H:1V.

Hydrogeologic Data

The information identified in item 10, "Siting Criteria" of the C-144 is attached. These are:

1. Figure 1 –presents data from the Office of the State Engineer (OSE) database and USGS database. This figure shows the location of the nearest registered water supply wells and available depth to ground water data.
2. Figure 1b – Ground water elevation data from the *Collection of Hydrologic Data – Eastside Roswell Range EIS Area – New Mexico* (Geohydrology Associates, Inc., 1978)
3. Figure 2- USGS topographic map of the area. These maps show locations of any significant watercourse the locations of windmills and other wells that may not be registered with the OSE
4. Figure 3 – recent aerial photograph showing the presence of structures, which in this area are oil wells and tank batteries
5. Figure 4 - is a street map that also shows the location of the nearest incorporated municipal boundary
6. Figure 5 – shows the no wetlands are identified in the area directly surrounding the site
7. Figure 6 – shows the location of the nearest identified subsurface mine
8. Figure 7 – shows the area in relation to identified unstable areas

A FEMA floodplain map of the area does not yet exist. However, Figure 2 and our site visit confirm that this sand dune area is not within a floodplain. There is no evidence of flooding at or near the site that would endanger the temporary pit or burial trench. Our analysis agrees with the evaluation of NMOCD through the approved permit for the pit and in-place burial.

Siting Criteria Compliance Demonstration

As designated in the C-144 the location of the pit and burial trench meet the criteria of NMOCD Rules. We believe the data presented in Figures 1-7 demonstrate that:

Ground water is GREATER than 100 feet below the bottom of the temporary pit and proposed burial trench

Figure 1 shows all wells in the OSE database, wells with depth to water data from the USGS database and information on well depths and aquifers from the Petroleum Recovery Research Center (PRRC). The map confirms information typically employed by NMOCD to determine the depth to water.

The map indicates that nearby wells obtain ground water from the Santa Rosa Sandstone (the base of the Chinle) or from the Chinle (based upon our evaluation of recorded total depths and the independent evaluation by the PRRC). Ground water in the Chinle (and Santa Rosa) is generally under pressure (confined) and therefore cannot be impaired by surface releases. Moreover, wells south of the site that draw water from the Chinle and Santa Rosa show depth to water measurements in excess of 100 feet. Note that some wells in the OSE database do not have data for depth to water or total depth (e.g. TD = 0) and these registered wells might be applications for wells that were nto drilled, wells drilled prior to requirements to submit information to the OSE or drilled wells where the applicant did not submit data.

As ground water data for this area is limited, we have elected to provide a map noting the site on Figure 16 from the *Collection of Hydrologic Data – Eastside Roswell Range EIS Area – New Mexico* (Geohydrology Associates, Inc., 1978) to further demonstrate that the depth to ground water at the site is greater than 100 feet below ground surface (Figure 1b).

The pit, excavated material and burial trench is NOT 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).

The approved permit for in-place burial, Figure 2-3 and Appendix A confirm this statement.

The pit and burial trench is NOT within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.

The approved permit, Figure 2-3 and Appendix A confirm this statement.

The pit and burial trench is NOT within 500 feet of a private, domestic fresh water well or spring used by less than five households for domestic or stock watering purposes, it is NOT within 1,000 feet of any other fresh water well

or spring.
The approved permit, Figures 1-3 and Appendix A support this statement.

The pit and burial trench is NOT 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.
The approved permit for in-place burial and Figure 4 confirm this statement.

The pit and burial trench is NOT within 500 feet of a wetland.
The approved permit for in-place burial, Figure 5 and Appendix A confirm this statement.

The pit, excavated material and burial trench is NOT within an area overlying a subsurface mine.
The approved permit for in-place burial and Figure 6 confirm this statement. The closest underground mine is shown in the southeast corner of Figure 6, many miles south of the site.

The pit and burial trench is NOT within an unstable area.
Our inquiry confirms the opinion suggested by the approved permit for in-place burial, that the pit (and proposed burial trench) is not in an unstable area. Figure 7 shows that the area is not within any karst area, which is a strong indicator of unstable areas. Our site visit and our examination of the geology of the area (see Figure 1) allow us to provide a professional opinion that the site is not in an unstable area.

The pit, excavated material and burial trench is NOT within a 100-year floodplain.
The approved permit for in-place burial, Figure 2 and our site visit confirm this statement. The location of the pit is not in or near an active watercourse. No FEMA map has been created for this area, so our professional judgment is based on observations of the site location and other available data.

Design Plan

On page 1 of our previously submitted Supplemental Documentation for the C-144 form dated June 8, 2010, Lynx states that it is requesting "administrative approval to construct the temporary drilling pit with 1.5H:1V slopes for certain sides of the drilling pit as shown in the design drawings". Nevertheless, site conditions were sandy and the entire pit was constructed with 2H:1V slopes.

Figures 8 through 10 present the design plan for the drilling pit as proposed in the approved C-144. Figure 10 has been modified from the original to show 2H:1V side slopes and Figures 11-13 present as-built drawings and Appendix B provides images of the pit construction. The plan consists of the following protocols,

which are derived from NMOCD Rules. The purpose of the pit is to contain liquids and solids, prevent contamination of fresh water and protect public health and the environment. The design proposes appropriate engineering principles and practices and will follow applicable liner manufacturers' requirements. Lynx followed the following steps in the construction of the temporary pit:

I. Prior to constructing the pit the operator stripped and stockpiled the topsoil for use as the final cover or fill at the time of closure.
II. The operator posted an upright sign not less than 12 inches by 24 inches with lettering not less than two inches in height in a conspicuous place on the fence surrounding the pit. The operator posted the sign in a manner and location such that a person can easily read the legend. The sign provides the following information: the operator's name; the location of the site by quarter-quarter or unit letter, section, township and range; and emergency telephone numbers.
III. The operator fenced the pit in a manner that prevents unauthorized access and maintains the fences in good repair.
IV. The operator fenced the pit to exclude livestock with a four foot fence that has at least four strands of barbed wire evenly spaced in the interval between one foot and four feet above ground level.

With respect to the design and construction of the temporary pit:

A. The operator designed and constructed a temporary pit to ensure the confinement of liquids to prevent unauthorized releases.
B. The temporary pit has a properly constructed foundation and interior slopes consisting of a firm, unyielding base, smooth and free of rocks, debris, sharp edges or irregularities to prevent the liner's rupture or tear.
C. The operator has constructed a temporary pit so that the slopes are no steeper than two horizontal feet to one vertical foot (2H:1V).
D. The temporary pit uses a geomembrane liner consisting of 20-mil string reinforced LLDPE that the appropriate division district office has approved in the past. The geomembrane liner is composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. The liner material is resistant to ultraviolet light. Liner compatibility complies with EPA SW-846 method 9090A.
E. The operator minimized liner seams and oriented them up and down, not across a slope. The operator used factory welded seams where possible. Prior to field seaming, the operator overlapped liners four to six inches and orient seams parallel to the line of maximum slope, *i.e.*, oriented along, not across, the slope. The operator minimized the number of field seams in corners and irregularly shaped areas.
F. Qualified personnel performed field seaming. Lynx welded field liner seams.

G. Construction avoided excessive stress-strain on the liner.
H. Geotextile were be placed under the liner where needed to reduce localized stress-strain or protuberances that may otherwise compromise the liner's integrity.
I. The operator anchored the edges of all liners in the bottom of a compacted earth-filled trench. The anchor trench was set at least 18 inches deep.
J. The operator ensured that the liner is protected from any fluid force or mechanical damage at any point of discharge into or suction from the lined temporary pit through the placement of a layer of protective felt over the liner and the placement of pipes at these locations as shown in the design drawings.
K. The operator designed and constructed a temporary pit to prevent run-on of surface water. A berm, ditch, proper sloping or other diversion surround a temporary pit to prevent run-on of surface water as shown on the design drawings.
L. The volume of a temporary pit does not exceed 10 acre-feet, including freeboard.

Additionally:

- As much as possible, the contractor separated coarser material from finer-grained material excavated from the pit for use in constructing the soil cover over the buried waste when operations of the drilling pit cease.
- Below the liner, the contractor installed the leak detection system described in the design drawings.
- Above the liner, a drain system composed of perforated pipe will allow removal of brine and associated constituents of concern from the residual solid materials.

Operating and Maintenance Plan

As stated earlier, the operator will operate and maintain the temporary pit to contain liquids and solids and maintain the integrity of the liner, liner system or secondary containment system, prevent contamination of fresh water and protect public health and the environment. Specifically:

1. The operator will dispose of all drilling fluids in a manner, approved by division rules, that prevents the contamination of fresh water and protects public health and the environment.
2. The operator will not discharge into or store any hazardous waste in the temporary pit.
3. If the pit liner's integrity is compromised, or if any penetration of the liner occurs above the liquid's surface, then the operator will notify the appropriate division district office within 48 hours of the discovery and repair the damage or replace the liner.
4. If the pit develops a leak, or if any penetration of the pit liner occurs below the liquid's surface, then the operator will remove all liquid

above the damage or leak line within 48 hours, notify the appropriate division district office within 48 hours of the discovery and repair the damage or replace the pit liner

5. The injection or withdrawal of liquids from the pit will be accomplished through a header, diverter or other hardware that prevents damage to the liner by erosion, fluid jets or impact from installation and removal of hoses or pipes.
6. The operator will operate and install the pit to prevent the collection of surface water run-on.
7. The operator will install, or maintain on site, an oil absorbent boom or other device to contain and remove oil from the pit's surface.

The operator will maintain and operate a temporary pit in accordance with the following additional protocols.

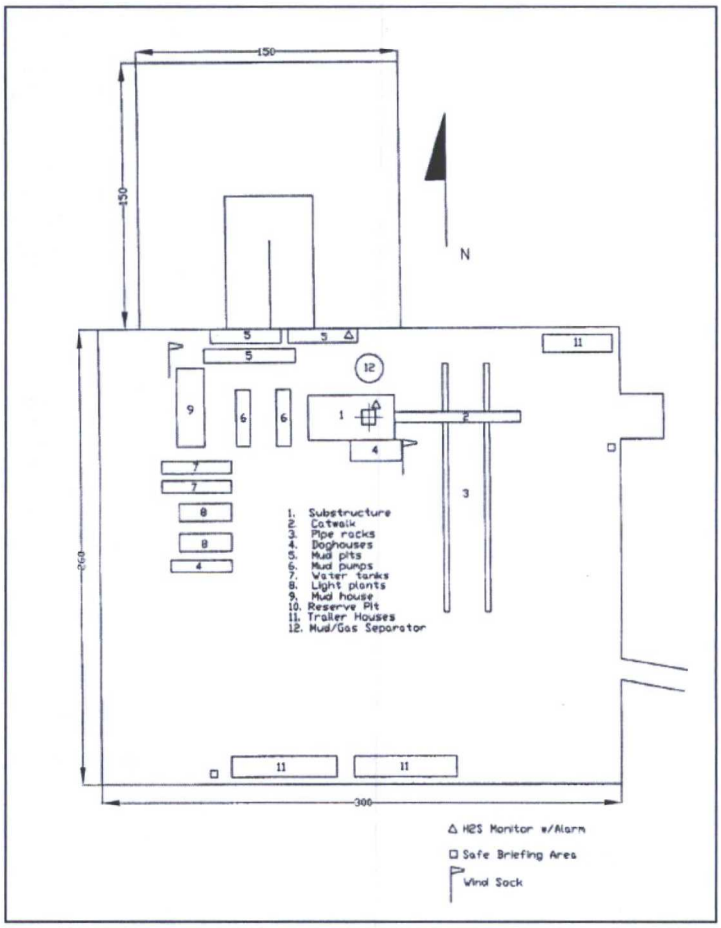
a. Only fluids used or generated during the drilling process will be discharged into a temporary pit.
b. The operator will maintain the temporary pit free of miscellaneous solid waste or debris.
c. The operator shall use a tank made of steel or other material, which the appropriate division district office approves, to contain hydrocarbon-based drilling fluids. The operator does not plan on using hydrocarbon-based drilling fluids.
d. Immediately after cessation of a drilling operation, the operator will remove any visible or measurable layer of oil from the surface of the drilling pit.
e. The operator will maintain at least two feet of freeboard for a temporary pit.
f. The operator will inspect a temporary pit containing drilling fluids at least daily while the drilling rig is on-site.
g. Thereafter, the operator will inspect the temporary pit weekly so long as liquids remain in the temporary pit.
h. The operator will maintain a log of such inspections and make the log available for the appropriate division district office's review upon request. The operator will file a copy of the log with the appropriate division district office when the operator closes the temporary pit.
i. The operator will remove all free liquids from a temporary pit within 30 days from the date that the operator releases the drilling rig. The operator will note the date of the drilling or workover rig's release on form C-105 or C-103 upon well completion.

In addition to the specifications outlined above, Lynx will:

- Use steel pit and lined outer horse shoe reserve pit to circulate mud and drill surface casing with fresh water.
- Use steel pit and lined inner horse shoe reserve pit to circulate mud and drill intermediate casing with saturated brine.

- Transfer sufficient brine fluid from inner pit to outer horse shoe pit to create appropriate salinity/weight of drilling fluid for drilling to total depth.
- Use steel pit and lined outer horse shoe reserve pit to circulate mud and drill to total depth with cut brine.
- When possible, add fresh water to inner pit to create brine/cut brine and transfer fluid to outer pit as necessary to accommodate for fluid loss during drilling.
- During drilling the liner leak detection system is checked routinely and weekly during drying and closure.
- After 10-40 days of drainage pumping and solids drying, the solids will be sampled as described below.

With respect to the above reference to a "steel pit" – this is not intended to indicate the planned use of a closed-loop system. Figures 8 and 9 show the horseshoe pit configuration used at the site. Photos in Appendix B document the construction of the temporary pit according to these designs. The steel pit referenced is the standard steel above-grade mud "pit" used for drilling most oil and gas wells. Mud circulates from the reserve pit to the steel pit where the fluid undergoes final conditioning prior to circulation down the boring. Figure 14, here, reproduces a drawing in the approved APD showing the layout of the rig. The steel mud pits are #5 in the drawing.



Closure Plan

Siting Criteria Compliance Demonstration

As described above, the site meets all of the siting criteria for on-site trench burial.

Proof of Surface Owner Notification

The Federal government is the surface landowner and their representative, the BLM, has approved the APD with the provision for on-site burial of cuttings. The approved APD is proof of surface owner notification. This proof of surface owner notification is included with the previously approved June 8, 2010 C-144 form, included in Appendix C.

Pursuant to19.15.17.13J(1) NMAC, Lynx will provide notice to the surface owner, specifically to the BLM, that it plans to close the temporary pit via certified mail, return receipt requested.

Construction/Design of Burial Trench

Lynx proposes to close the pit using the pit itself as an on-site trench (please see the attached Application for Exceptions to NMOCD Rules for justification of need and sufficiency of alternatives to protect fresh water, public health and the environment.). The operator has designed the pit to conform with the same protocols applicable to an on-site trench for closure as specified in 19.15.17.13B.(2) NMAC. Specifically:

1. Lynx has excavated the pit (to be used as an on-site trench) to an appropriate depth that allows for the installation of the geomembrane bottom liner, geomembrane liner cover and the division-prescribed soil cover required pursuant to 19.15.17.13.H NMAC.
2. The pit (on-site trench) has been properly constructed foundation and side walls consisting of a firm, unyielding base, smooth and free of rocks, debris, sharp edges or irregularities to prevent the liner's rupture or tear.
3. Geotextile was placed under the liner where needed to reduce localized stress-strain or protuberances that may otherwise compromise the liner's integrity.
4. The pit (on-site trench) was constructed with a geomembrane liner that consists of a 20-mil string reinforced LLDPE liner
5. The geomembrane liner is composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. The liner material will be resistant to ultraviolet light. Liner compatibility will comply with EPA SW-846 method 9090A.

6. The contractor for the operator minimized liner seams and oriented them up and down, not across a slope and the operator used factory welded seams where possible. Prior to field seaming, the operator overlapped liners four to six inches and orient liner seams parallel to the line of maximum slope, *i.e.*, oriented along, not across, the slope. The operator minimized the number of field seams in corners and irregularly shaped areas.
7. Qualified personnel performed field seaming. The contractor welded field liner seams.
8. The contractor for the operator installed sufficient liner material to reduce stress-strain on the liner.
9. The operator ensured that the outer edges of all liners are secured for the placement of the excavated waste material into the drilling pit (on-site trench).
10. The contractor for the operator will fold the outer edges of the drilling pit (on-site trench) liner to overlap the waste material in the pit (on-site trench) prior to the installation of the geomembrane cover.
11. The contractor for the operator will install a geomembrane cover over the waste material in the lined trench (former drilling pit). The operator will install the geomembrane cover in a manner that prevents the collection of infiltration water in the lined trench and on the geomembrane cover after the soil cover is in place.
12. The geomembrane cover will consist of a 20-mil string reinforced LLDPE liner. The geomembrane cover will be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. Cover compatibility will comply with EPA SW-846 method 9090A.

Protocols and Procedures

Pursuant to 19.15.17.13.A-B NMAC, the operator will:

- Close the pit within six months from the date that the operator releases the drilling workover rig.
- Remove all liquids from the temporary pit prior to closure and dispose of the liquids in a division-approved facility or recycle, reuse or reclaim the liquids in a manner that the appropriate division district office approves. The operator shall close the temporary pit by on-site burial.

The operator has demonstrated and complied with the siting requirements in 19.15.17.10.C NMAC and the closure requirements and standards of 19.15.17.13.F NMAC as the closure method of the temporary pit involves on site burial pursuant to 19.15.17.13B(2) NMAC.

The operator will comply with 19.15.17.13.G-K NMAC as discussed in the Site Reclamation Plan section of this document.

The operator will place a steel marker at the center of an on-site burial. The steel marker will be not less than four inches in diameter and will be cemented in a three-foot deep hole at a minimum. The steel marker will extend at least four feet above mean ground level and at least three feet below ground level. The operator name, lease name and well number and location, including unit letter, section, township and range, and that the marker designates an on-site burial location will be welded, stamped or otherwise permanently engraved into the metal of the steel marker.

The operator will report the exact location of the on-site burial on form C-105 filed with the division.

The operator will file a notice with the BLM identifying the exact location of the on-site burial as there is no deed associated with this location.

Confirmation Sampling Plan

Lynx has requested three exceptions that we believe will be as effective (and in some cases, could be more effective) as what is specified in the Pit Rule for the protection of fresh water, public health and the environment. If these exception requests are approved, this will allow some exception to the requirements of 19.15.17.13.F(3)(a)-(f) NMAC – specifically that for a separate on-site trench, for excavating and transferring all contents and synthetic pit liners or liner material associated with a temporary pit to a separate, distinct lined trench, and the operator shall test soils beneath the temporary pit after excavation.

As specified in 19.15.17.13.F(3)(b) NMAC, the operator still plans to stabilize or solidify the contents of the temporary pit to a bearing capacity sufficient to support the final cover of the trench burial. The operator will not mix the contents with soil or other material at a mixing ration of greater than 3:1, soil or other material to contents.

Sampling and analysis of the contents of the pit, pursuant to 19.15.17.13.F(3)(c) NMAC is discussed in the Waste Material Sampling Plan section of this report.

As specified in 19.15.17.13F(3)(e) NMAC, materials to be buried on-site shall pass the paint filter liquids test (EPA SW-846, method 9095) and the closure standard specified in 19.15.17.13.F(3)(c) NMAC.

As specified in 19.15.17.13F(3)(f) NMAC, the operator will determine whether a release has occurred, albeit using a leak detection system.

Because ground water is more than 100 feet below the bottom of the temporary pit, pursuant to 19.15.17.13.F.(3)(f)(ii) NMAC the operator will inspect the earth below the primary liner that is not adequately monitored by the leak detection system (slopes of the pit above the level of the solids in the pit) for moisture and

discoloration and sample soil according to the specified protocols described in NMOCD Rules. Specifically, Lynx will remove transfer to the burial trench (i.e. drilling pit) any material that is wet, discolored or showing other evidence of a release. Lynx will then collect a composite sample from beneath these excavated areas and analyze for benzene, total BTEX, TPH, the GRO and DRO combined fraction and chlorides to demonstrate that benzene, as determined by EPA SW-846 method 8021B or 8260B or other EPA method that the division approves, does not exceed 0.2 mg/kg; total BTEX, as determined by EPA SW-846 method 8021B or 8260B or other method that the division approves, does not exceed 50 mg/kg; the GRO and DRO combined fraction, as determined by EPA SW-846 method 8015M, does not exceed 500 mg/kg; the TPH, as determined by EPA method 418.1 or other EPA method that the division approves, does not exceed 2500 mg/kg; and chlorides, as determined by EPA method 300.1, do not exceed 1000 mg/kg or the background concentration, whichever is greater. The operator will notify the division of its results on form C-141.

As specified in 19.15.17.13.F(3)(g) NMAC, if it is demonstrated that a release has not occurred, the operator shall, if possible after using the temporary pit for an on-site trench, backfill any portion of the non-used temporary pit with compacted, non-waste containing earthen material; construct a division-prescribed soil cover; recontour and re-vegetate the site. The division-prescribed soil cover, recontouring and re-vegetation shall comply with 19.15.17.13G, H, and I, NMAC.

In the attached Request for an Exception, we request an exception to the requirement to test the soils beneath the temporary pit to determine whether a release has occurred. We propose to employ a leak detection system in lieu of soil sampling to determine whether a release has occurred.

For the Lusk Pit, as described in the exception request, determining if a release has occurred relies on a total of 10 leak detection grids that were installed in the manner described below (also see Appendix C for the approved C-144). Each leak detection grid contains one gypsum block moisture sensor (Soil Moisture Corporation Model 5201F, www.soilmoisture.com/prod_details.asp?prod_id=1087&cat_id=20) installed in accordance with manufacturer's specifications in:

- A 3- to 6-inch layer of permeable earth (e.g. sand), which overlies
- A sheet of 20-mil string reinforced liner with dimensions of approximately 25 feet by 30 feet

Two leak detection grids underlie the inner horse shoe brine pit, which will be completely removed to the outer horse shoe, which will double as the burial trench. Upon pit closure, the earthen material beneath the inner horse shoe pit will be visually inspected for wet or discolored earth. As described above, any wet or discolored material will be transferred to the burial trench (e.g. drilling pit)

and the earth material beneath the removed material will be sampled as described above.

Eight leak detection grids are distributed beneath the outer horse shoe of the pit as shown in the approved C-144. As described in the closure plan and request for an exception to NMOCD Rules, the drilling pit will become the burial trench provided that the liner maintains integrity. Therefore, we will inspect the side slopes of pit for wet earth or discoloration during the closure process as stated above.

If the operator or the division determines that a release has occurred, then the operator will comply with 19.15.29 NMAC and 19.15.30 NMAC, as appropriate.

If the sampling program demonstrates that a release has not occurred or that any release does not exceed the concentrations specified in Subparagraph (c) of Paragraph (3) of Subsection F of 19.15.17.13 NMAC, as the operator has certified to the division that it has given written notice to the surface owner that it intends to do so. The operator will use the pit as an on-site trench for closure of the temporary pit – after NMOCD approves the exception request. In areas not used as an on-site trench (e.g. inner horse shoe), Lynx will backfill this area of the temporary pit excavation with compacted, non-waste containing, earthen material; construct a division-prescribed soil cover; recontour and re-vegetate the site. The division-prescribed soil cover, recontouring and re-vegetation requirements will comply with Subsections G, H and I of 19.15.17.13 NMAC.

The operator will install a geomembrane cover over material in the lined trench. The operator will design and construct the geomembrane cover in accordance with the requirements in 19.15.17.11.J(9) and (10) NMAC.

The operator will cover the geomembrane lined and covered, filled, trench with compacted, non-waste containing, earthen material; recontour and re-vegetate the site.

Waste Material Sampling Plan

The attached Application for Exceptions explains our request for an exception regarding the waster material sampling plan.

The contents of the pit will be sampled after drainage and drying and prior to any addition of clean fill according to the protocol outlined in NMOCD Rules for trench burial. As outlined in the NMOCD-approved C-144, we will obtain a five-point composite sample of the residual solids for laboratory analysis of:

- GRO and DRO using EPA Method 8015B rather than TPH concentration, as determined by EPA method 418.1
- Chloride, using EPA SW-846 method 1312 (SPLP) and determined by EPA method 300.1

- The concentrations of the inorganic water contaminants specified in 20.6.2.3103(A) NMAC EPA SW-846 method 1312 (SPLP) as determined by appropriate EPA methods, and
- The concentrations of the organic water contaminants specified in 20.6.2.3103(A) NMAC EPA SW-846 method 1312 (SPLP) as determined by appropriate EPA methods.

Upon receipt of the results, we will provide NMOCD with the calculation showing that the mass of constituents of concern that will be trench buried at the site meets the criteria established by NMOCD Rules (concentration x mass of mixed waste = mass of constituents of concern). The calculation of constituent mass is described above. Excavation and removal of the solids in the brine pit (inner horse shoe) may be required to meet the criteria established in NMOCD Rules. The submission of testing results may recommend removal of some waste from the inner horse shoe pit to meet the requirements of the Pit Rule and ensure protection of fresh water, public health, and the environment.

Disposal Facility Name and Permit Number

In the event that the proposed closure method does not satisfy the on-site closure standards specified in Subsection F of 19.15.17.13 NMAC or, if applicable, other on-site closure standards that the environmental bureau in the division's Santa Fe office approves (i.e. the attached exception request), the operator will close the temporary pit by excavating all contents and, if applicable, synthetic pit liners and transferring those materials to a division-approved facility.

Disposal Facility Names and Permit Numbers

Lea Land, LLC	NM-01-0035
Controlled Recovery, Inc.	NM-01-0006

Soil Cover Design

After the operator has removed the pit contents to the burial trench, the soil cover will consist of the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater.

The soil cover for trench burial will consist of a minimum of four feet of compacted, non-waste containing, earthen material. The soil cover will include either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater.

The operator will construct the soil cover to the site's existing grade and prevent ponding of water and erosion of the cover material.

Re-vegetation Plan

The first growing season after the operator closes the pit and trench, the operator will seed or plant the disturbed areas.

Lynx will accomplish seeding at the site by drilling on the contour whenever practical or by other division-approved methods, as required by 19.15.17.13I(2) NMAC. The operator will notify the NMOCD District Office of the proposed protocol at least 30-days prior to implementing the re-vegetation plan.

The operator will obtain vegetative cover that equals 70% of the native perennial vegetative cover (un-impacted by overgrazing, fire or other intrusion damaging to native vegetation) consisting of at least three native plant species, including at least one grass, but not including noxious weeds, and maintain that cover through two successive growing seasons.

During the two growing seasons that prove viability, there will be no artificial irrigation of the vegetation.

The operator will repeat seeding or planting until it successfully achieves the required vegetative cover.

When conditions are not favorable for the establishment of vegetation, such as periods of drought, the operator may request to delay seeding or planting until soil moisture conditions become favorable or may require the operator to use additional techniques such as mulching, fertilizing, irrigating, fencing or other practices.

The operator will notify the division when it has seeded or planted and when it successfully achieves re-vegetation.

Site Reclamation Plan

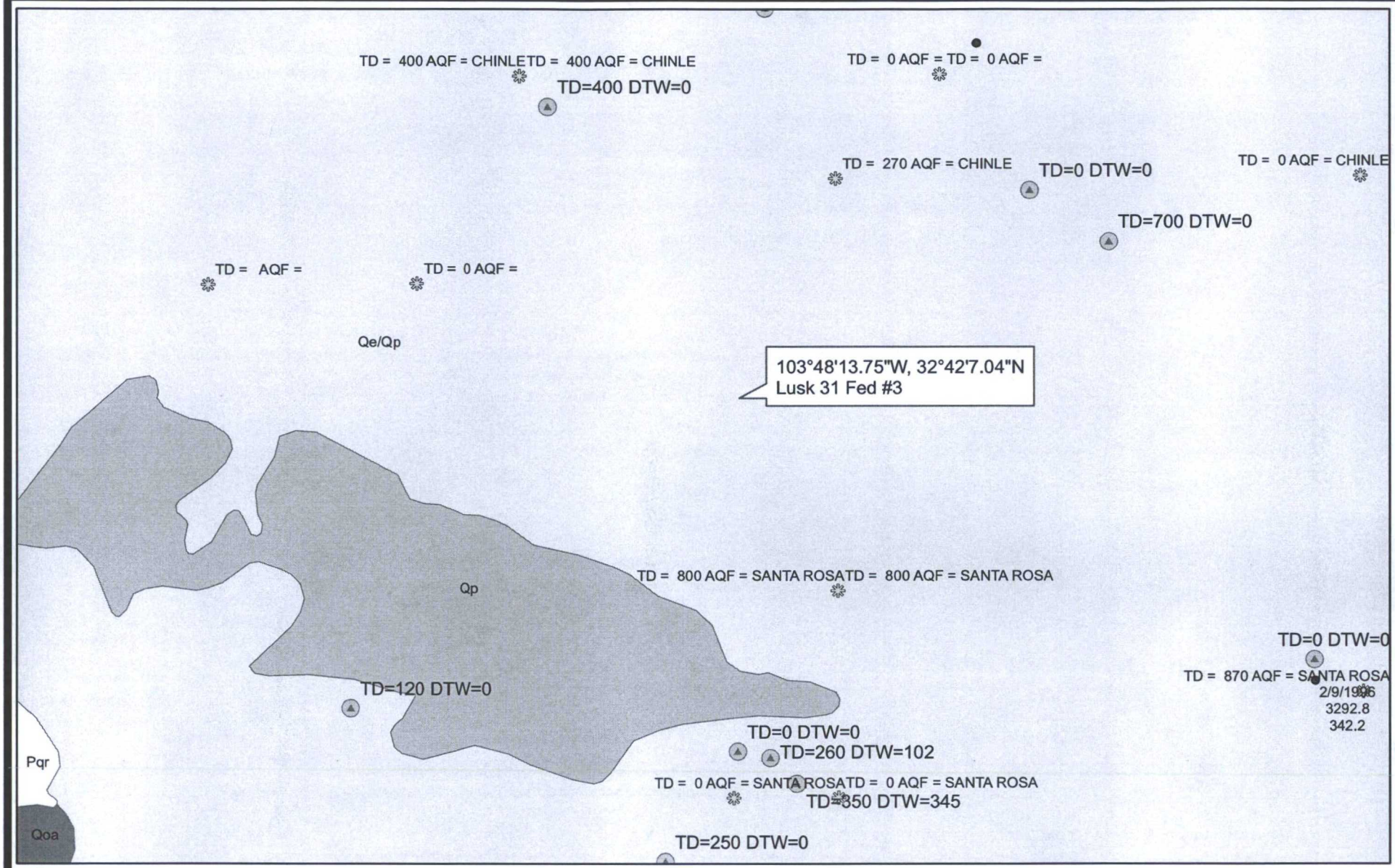
After closure of the pit and trench, the operator will reclaim the pit location and all areas associated with the pit including associated access roads to a safe and stable condition that blends with the surrounding undisturbed area. The operator will substantially restore the impacted surface area to the condition that existed prior to oil and gas operations by placement of the soil cover as provided in Subsection H of 19.15.17.13 NMAC (described in this submittal), recontour the location and associated areas to a contour that approximates the original contour and blends with the surrounding topography and re-vegetate according to Subsection I of 19.15.17.13 NMAC (as described herein).

Closure Notice and Reporting to NMOCD

The operator will notify the appropriate division district office verbally or by other means at least 72 hours, but not more than one week, prior to any closure operation. The notice will include the operator's name and the location to be closed by unit letter, section, township and range, the well's name, number and API number.

Within 60 days of closure completion, the operator will submit a closure report on form C-144, with necessary attachments to document all closure activities including sampling results; information required by 19.15.17 NMAC; a plot plan; and details on back-filling, capping and covering, where applicable.

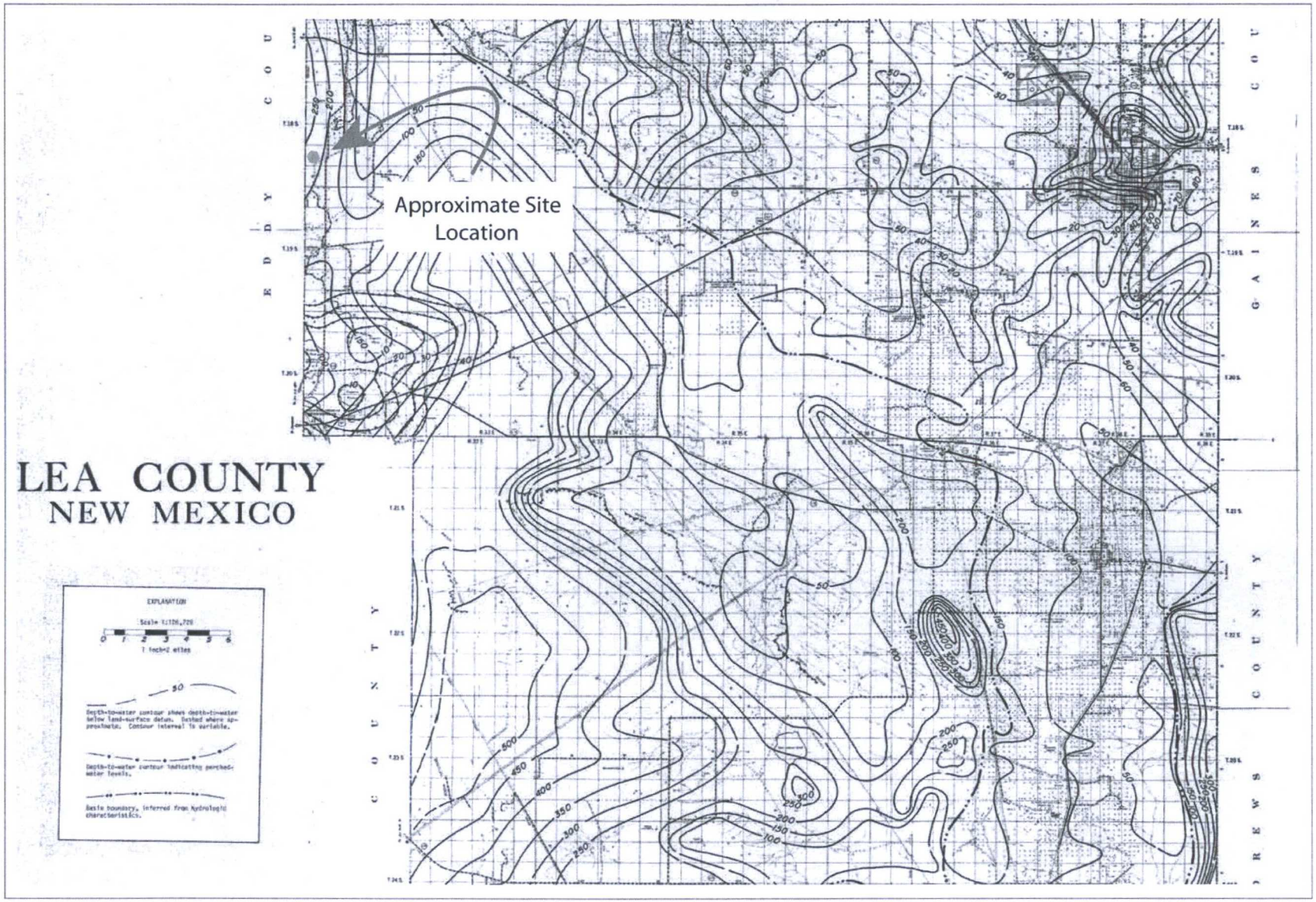
In the closure report, the operator will certify that all information in the report and attachments is correct and that the operator has complied with all applicable closure requirements and conditions specified in the approved closure plan. If the operator used a temporary pit, the operator shall provide a plat of the pit location on form C-105 within 60 days of closing the temporary pit.



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Geology and Depth to Ground Water (feet bgs)	Figure 1
	Lynx Petroleum- Lusk 31 Federal #2	June 2010

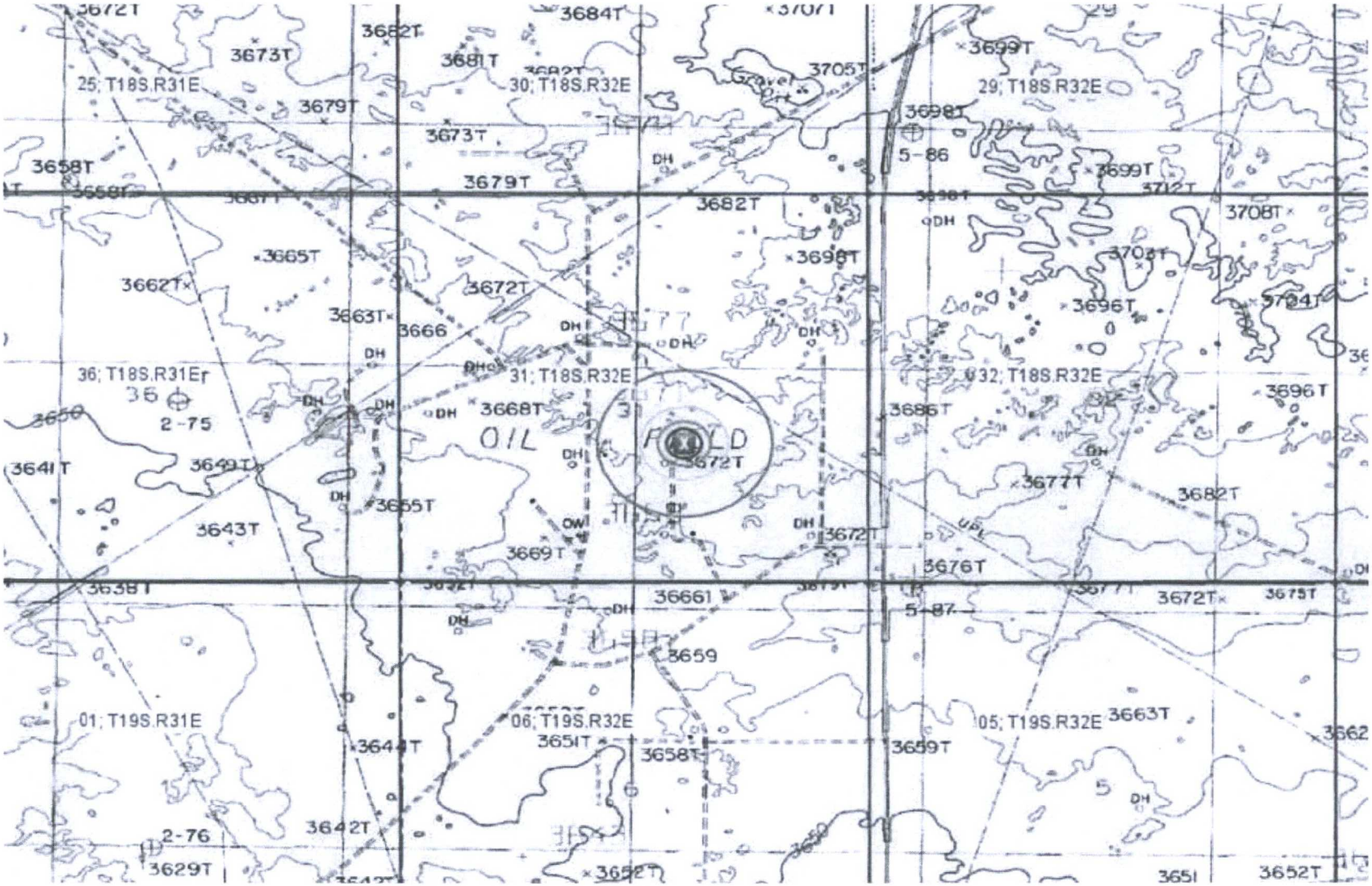
6/4/2010

Z:/DRAFT GIS PLATE/LYNX LUSK 31 #2/FIG1GEODTW.MXD



Map Source: Collection of Hydrologic Data - Eastside Roswell Range EIS Area - New Mexico (Geohydrology Associates, Inc., 1978)

R.T. HICKS CONSULTANTS, LTD. 901 Rio Grande Blvd. NW Suite F-142 Albuquerque, NM 87104 505.266.5004 Fax: 505.266.0745	Ground Water Elevation Map	Figure 1b
	Lusk 31 Federal #3, API 30-025-39593	July 2010



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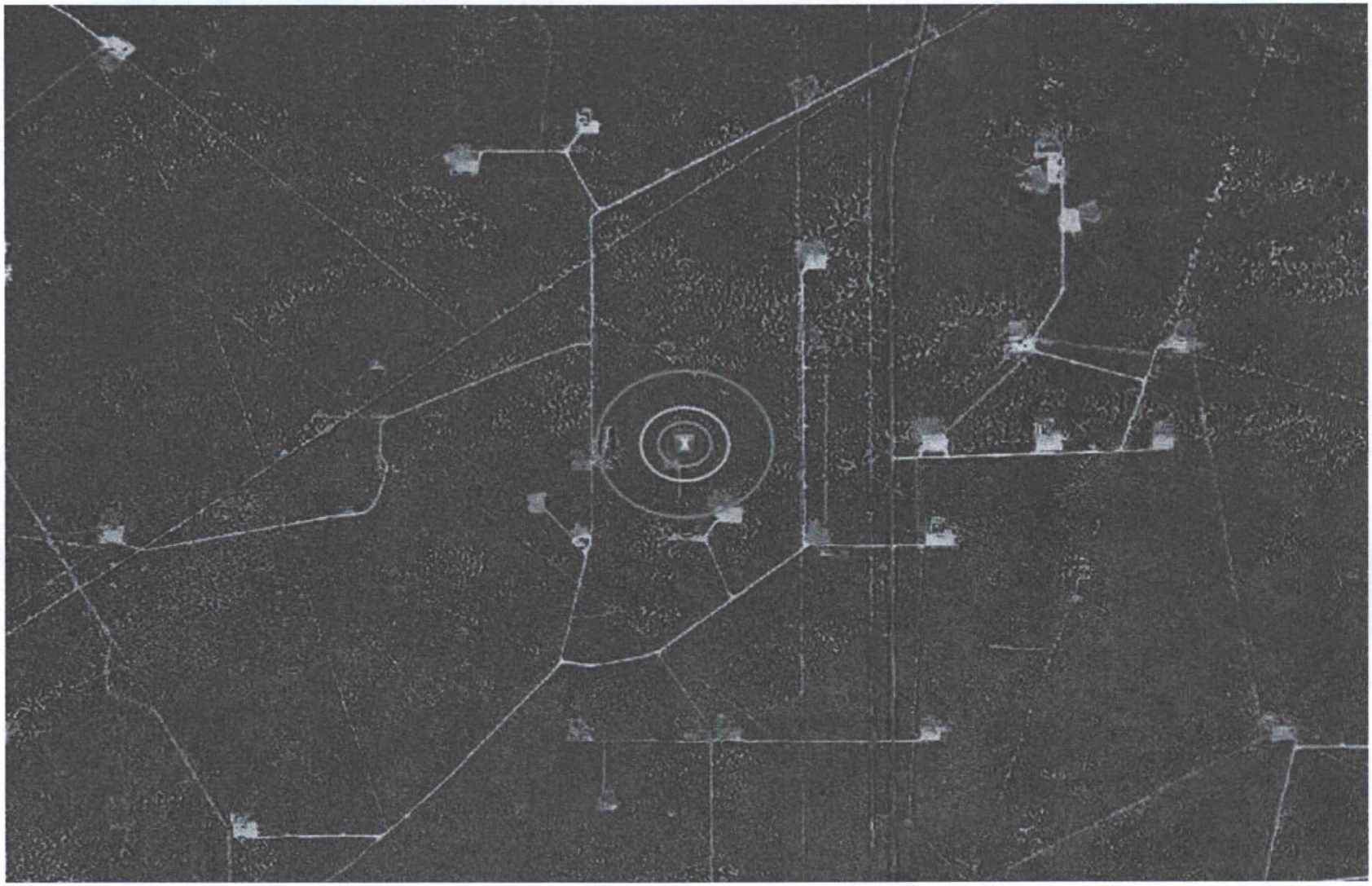
N W E S

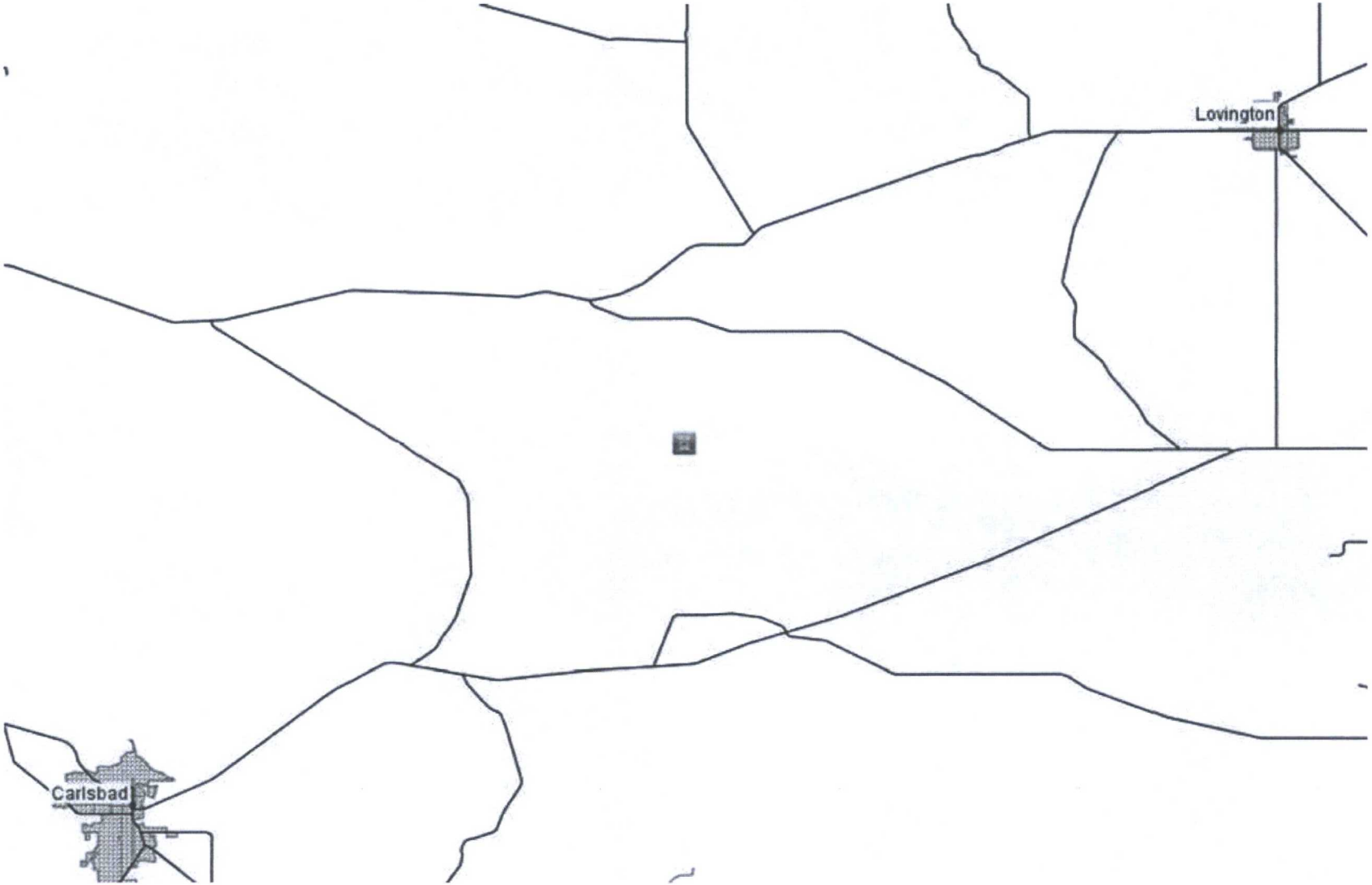
Petroleum Recovery Research Center	Topographic Map	Figure: 2
	Lynx Petroleum Lusk 31 Federal #3	Jun 04, 2010



0 1000 2000ft

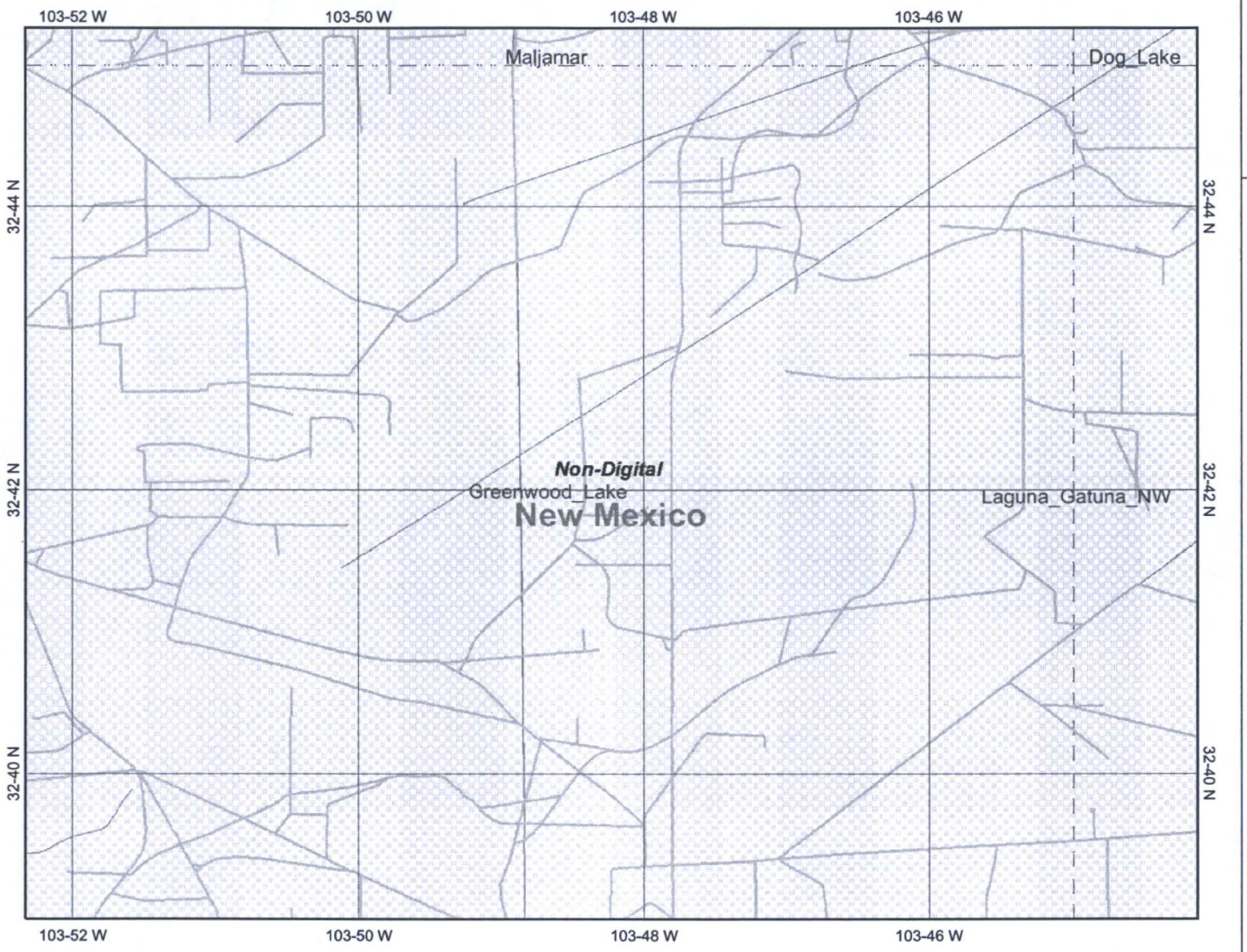
N W E S

Petroleum Recovery Research Center	Recent Air Photo	Figure: 3
	Lynx - Lusk 31 Federal #3	Jun 04, 2010



Petroleum Recovery Research Center	Municipal Boundaries	Figure: 4
	Lynx - Lusk 31 Federal #3	Jun 04, 2010

Figure 5 Wetlands Around Site



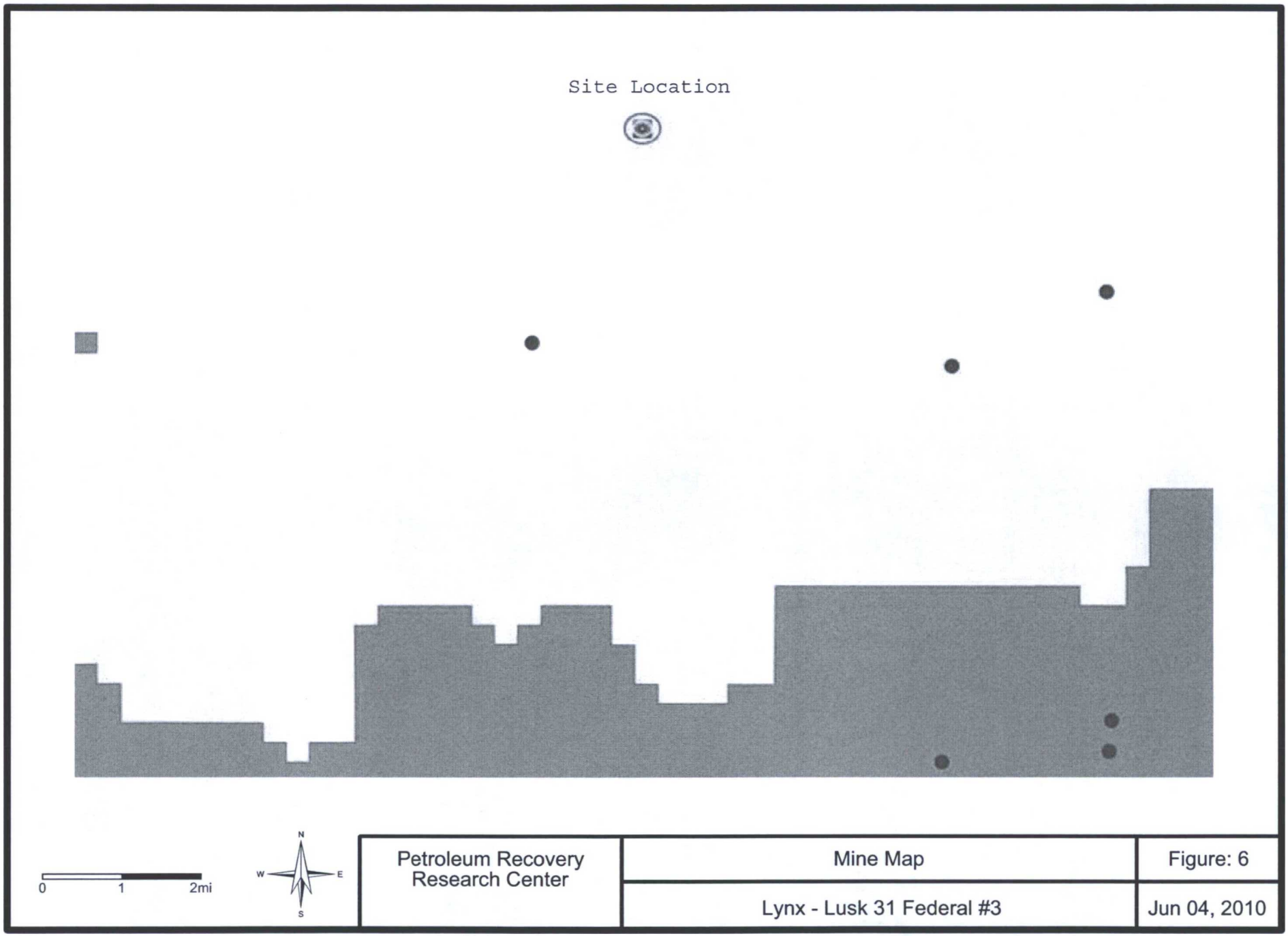
Map center: 32° 42' 7" N, 103° 48' 14" W

Legend

- Interstate
- Major Roads
- Other Road
- Interstate
- State highway
- US highway
- Roads
- Cities
- USGS Quad Index 24K
- Lower 48 Wetland Polygons
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine
- Lower 48 Available Wetland Data
- Non-Digital
- Digital
- No Data
- Scan
- NHD Streams
- Counties 100K
- Urban Areas 300K
- States 100K
- South America
- North America

Scale: 1:81,707

Notes: Lynx Petroluem
LUSK 31 Fed #3

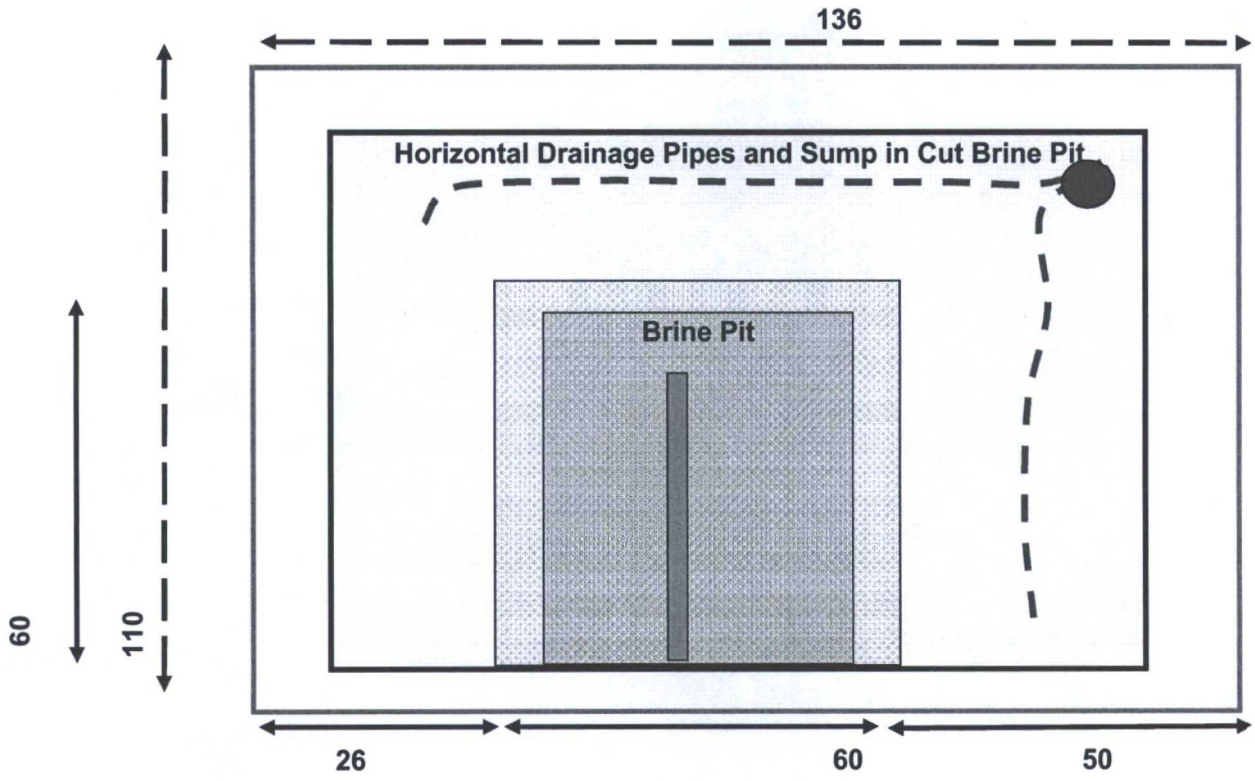


Petroleum Recovery Research Center	Mine Map	Figure: 6
	Lynx - Lusk 31 Federal #3	Jun 04, 2010

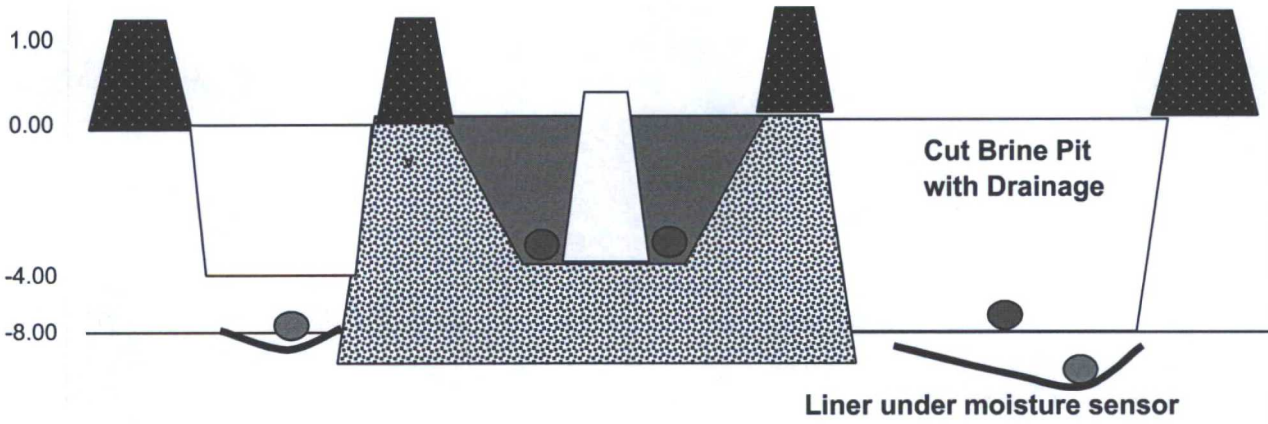
0 2 4mi

N W E S

Petroleum Recovery Research Center	USGS Karst Map	Figure: 7
	Lynx - Lusk 31 Federal #3	Jun 04, 2010



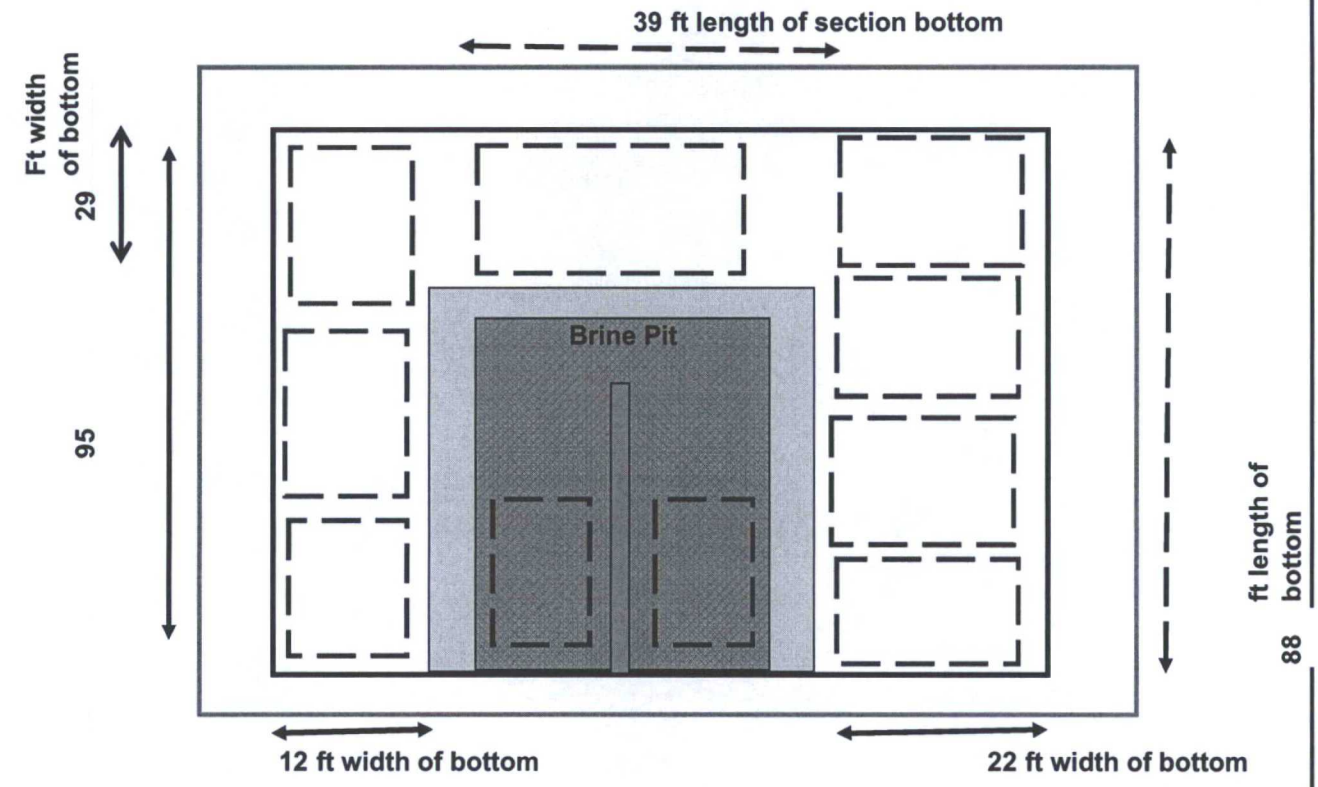
Dimensions center of berm to center of berm

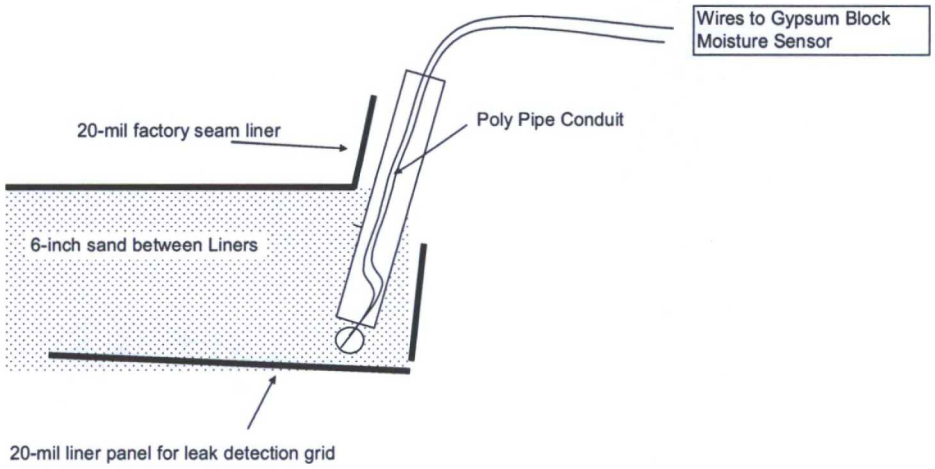


Patent Pending

R.T. Hicks Consultants, Ltd.	Pit Liner Schematics	Figure 8
	Lynx Petroleum Consultants - Lusk 31 Fed #3	May 2010

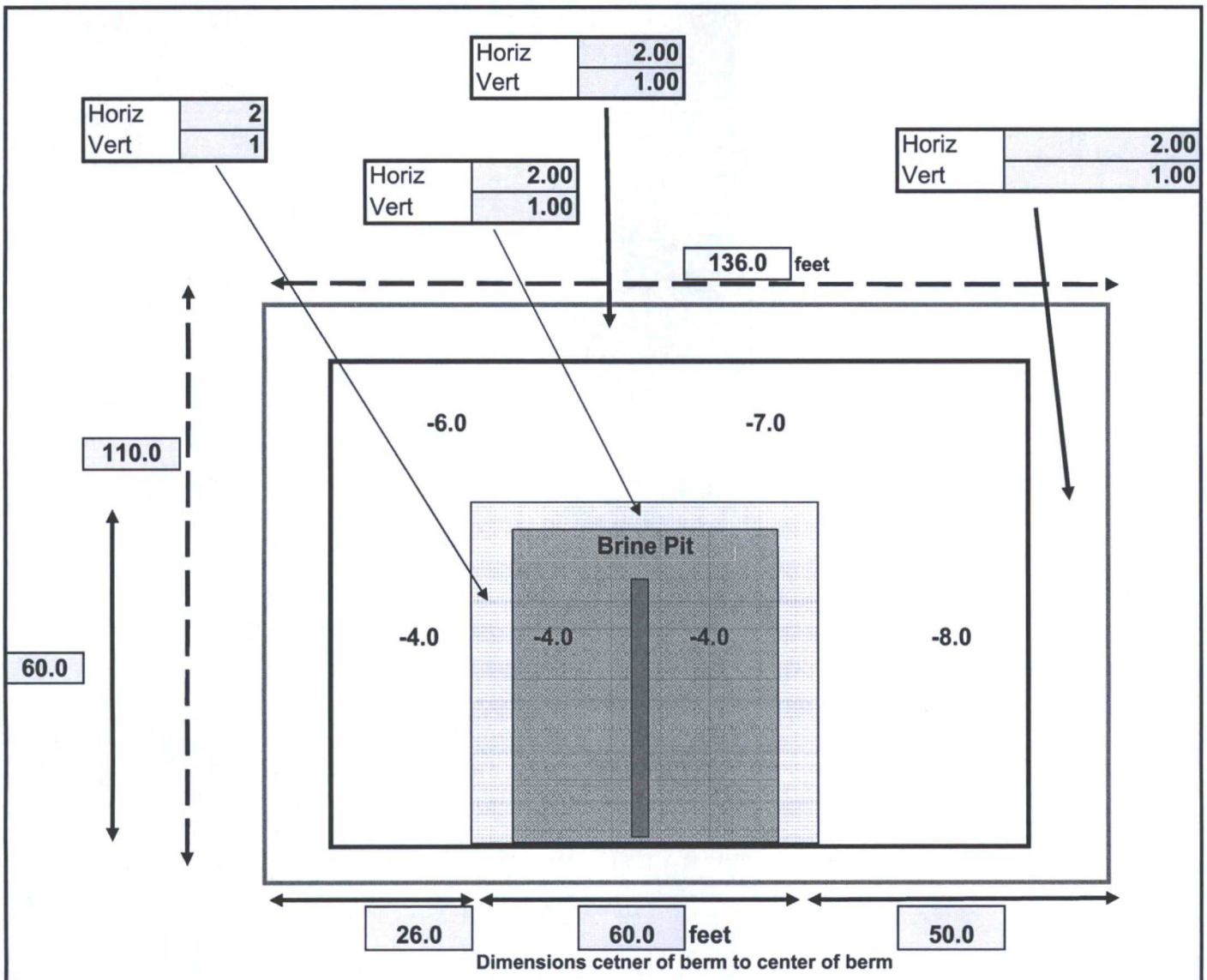
Soil Moisture Corporation Gypsum Block Model 5201F placed over 20-mil liner panel (dashed rectangles). Six inches of permeable material (e.g. soil or sand) placed between liner panel anc primary pit liner. Poly pipe conduit protects electrical leads from block to surface. Sloped liner panel directs any seepage to moisture sensor





Patent Pending

R.T. Hicks Consultants, Ltd.	Leak Detection System Schematic	Figure 9
	Lynx Petroleum Consultants - Lust 31 Fed #3	May 2010

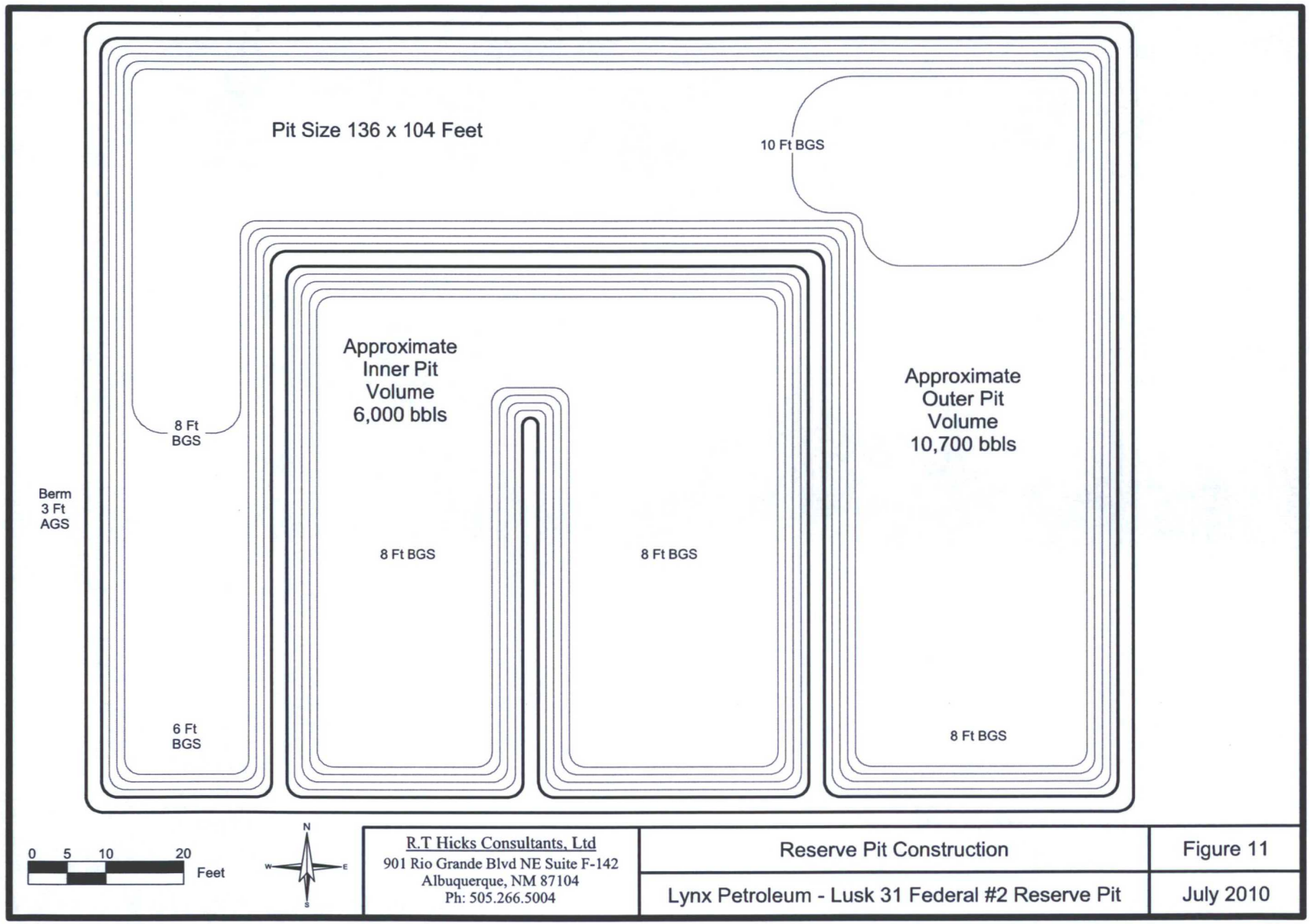


Depth Inputs	Upper Right corner	-7.0
	Lower Right corner	-8.0
	Upper Left corner	-6.0
	Lower Left corner	-4.0
	Brine Pit (both cells)	-4.0

Berm ht. 1

Volume of Inner Shoe **1,957.91** **bbls**
Volume of Outer Shoe **11,081.38** **bbls**

R.T. Hicks Consultants, Ltd.	Depth of Pit Below Grade and Dimensions	Figure 10
	Lynx Petroleum Consultants - Lust 31 Fed #3	July 2010



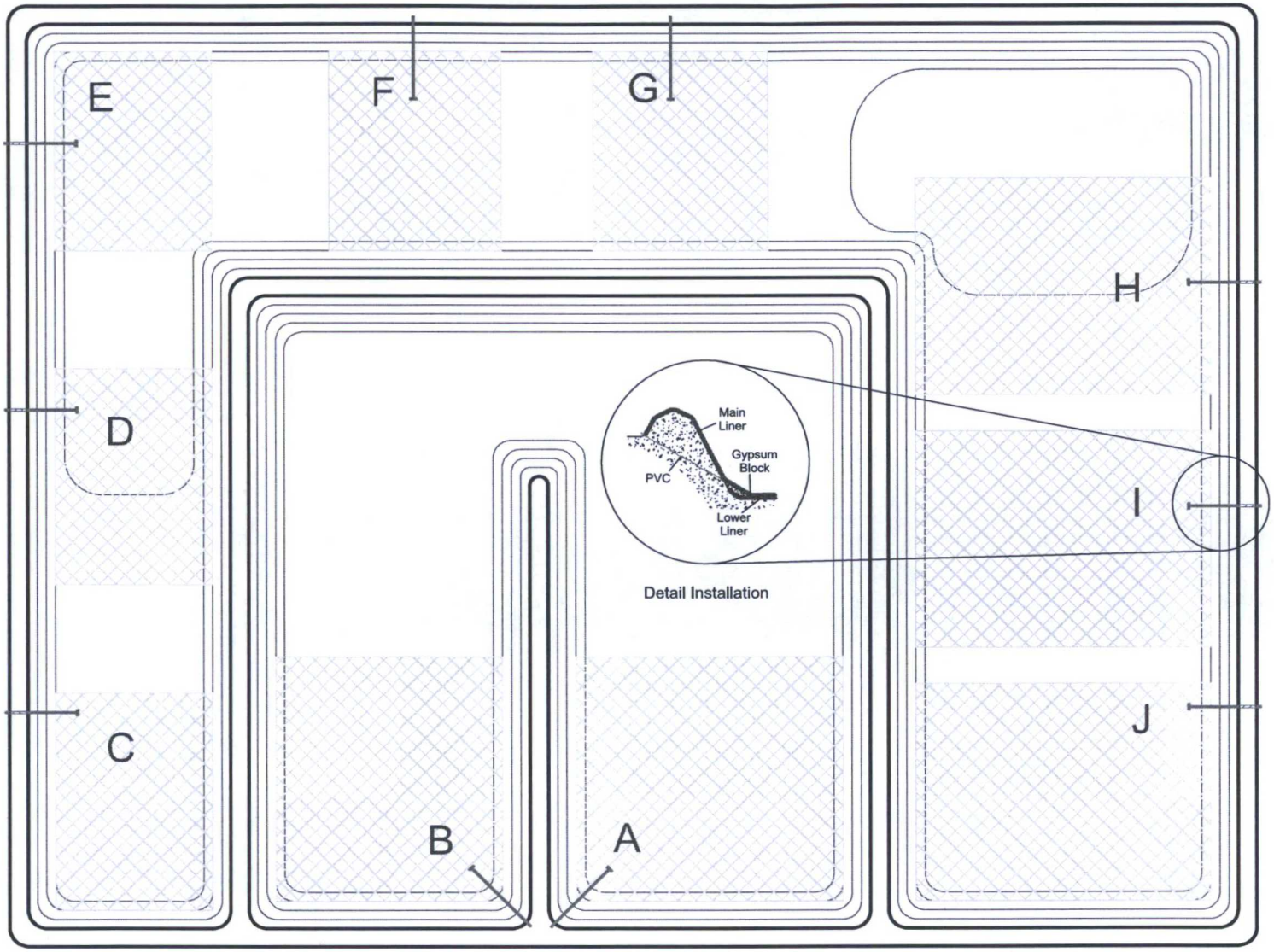
R.T Hicks Consultants, Ltd
901 Rio Grande Blvd NE Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Reserve Pit Construction

Figure 11

Lynx Petroleum - Lusk 31 Federal #2 Reserve Pit

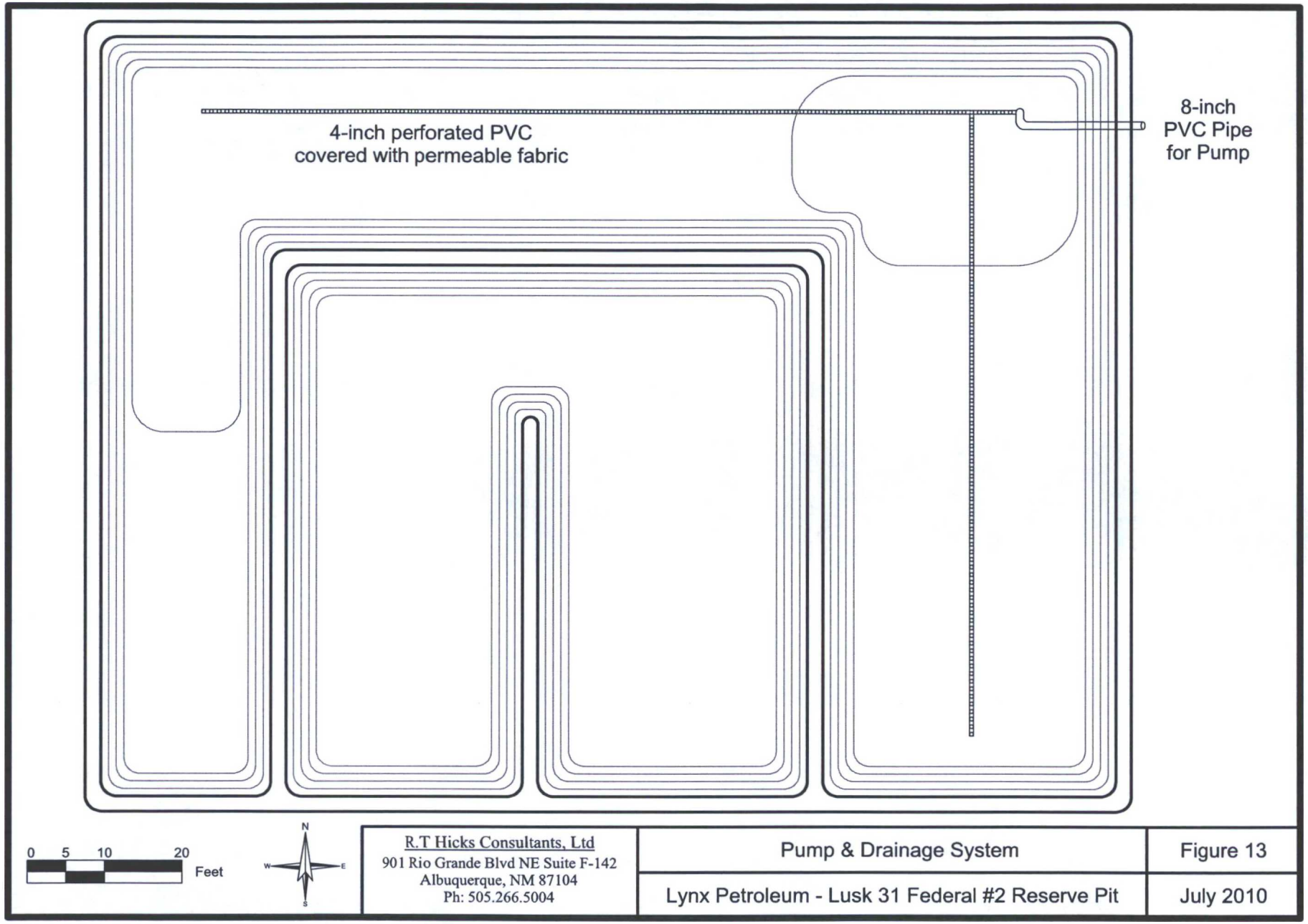
July 2010



0 5 10 20 Feet

N W E S

R.T Hicks Consultants, Ltd 901 Rio Grande Blvd NE Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Leak Detection System	Figure 12
	Lynx Petroleum - Lusk 31 Federal #2 Reserve Pit	July 2010



R.T Hicks Consultants, Ltd
901 Rio Grande Blvd NE Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Pump & Drainage System

Figure 13

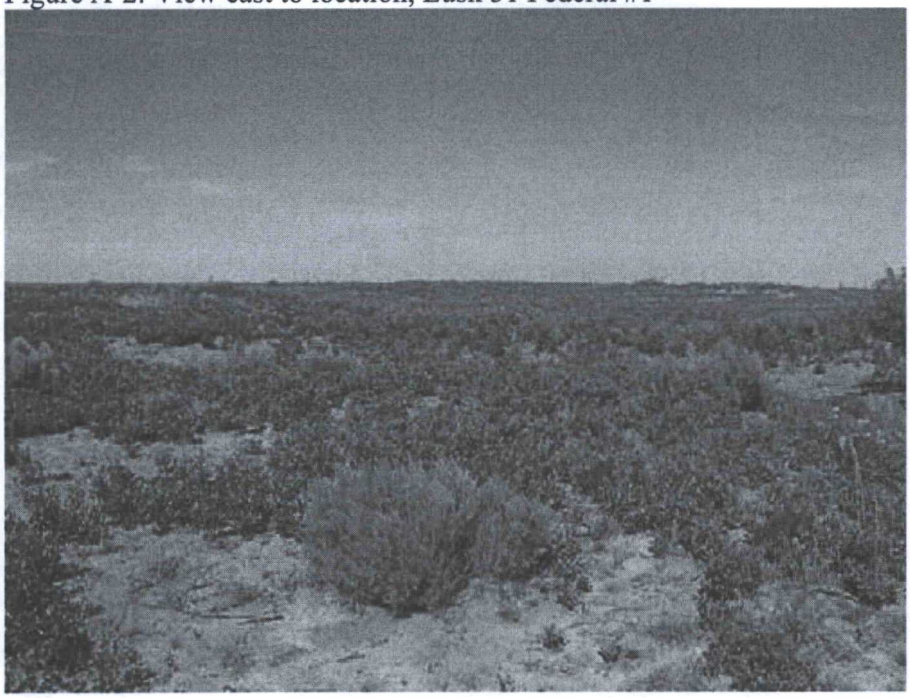
Lynx Petroleum - Lusk 31 Federal #2 Reserve Pit

July 2010

Appendix A

Figure A-1: View North to the location, Lusk 31 Federal #2 on horizon at left.

Figure A-2: View east to location, Lusk 31 Federal #1



Appendix B – Photo Documentation of Construction

Figure B-1: Drilling pit excavation

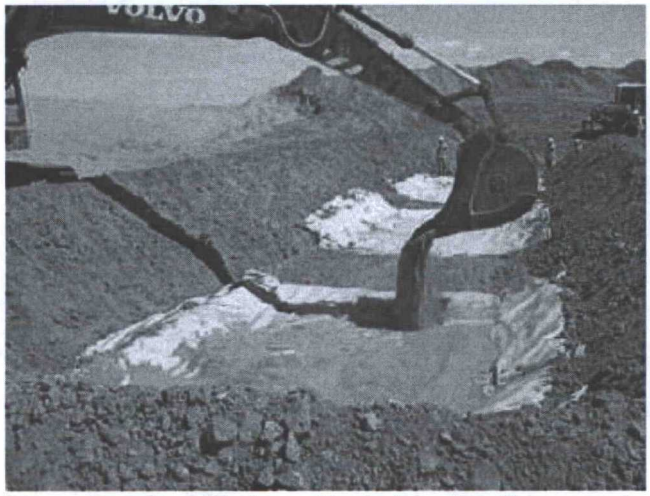


Figure B-2: Installation of leak detection liner panels and permeable material over panels

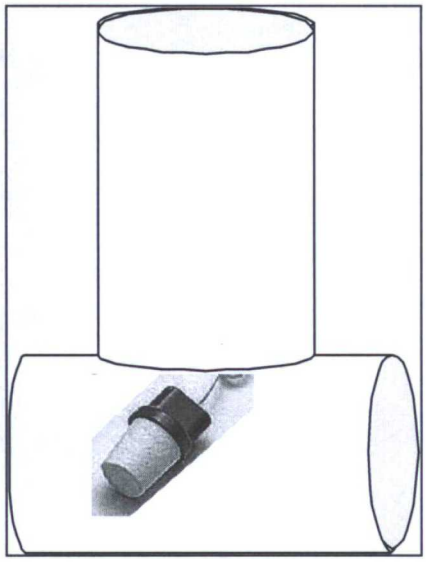


Figure B-3: Placement of moisture sensors for leak detection system and drawing showing moisture sensor in tee at end of conduit.

Figure B-4: Placing conduit from moisture sensor to ground surface

Figure B-5: Leak detection system

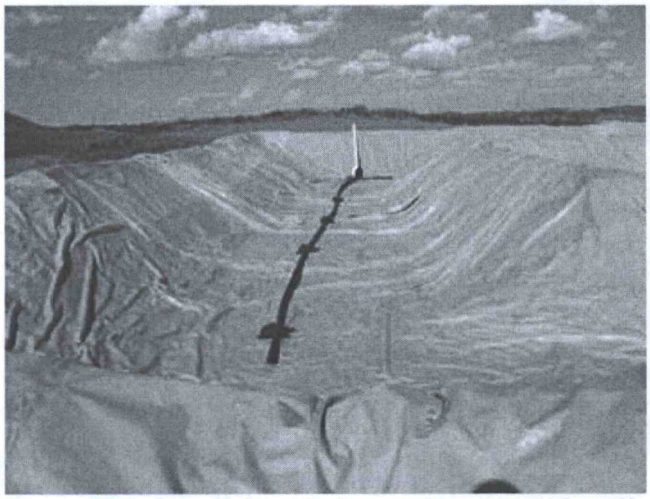


Figure B-6: Lined pit with dewatering system installed

Figure B-7: Pit spoil piles

Appendix C - Previously Approved C-144 – Dated June 8, 2010

AMMENDMENT TO
04/08/10 APPROVED
C-144 CLOS PLAN

R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

June 8, 2010

RECEIVED
JUN 08 2010
HOBBSOCD

Mr. Geoffrey Leking
NMOCD District 1
1625 French Drive
Hobbs, NM 88240
Via E-Mail

RE: Lusk 31 Federal #3, Lynx Petroleum Consultants

Dear Geoffrey:

This submission is a new modification of our previously-approved permit. Lynx Petroleum Consultants requests approval for trench burial in full compliance with the mandates of NMOCD Rules and withdraws the request for an exception to NMOCD Rules. In order to assure that this submission represents a complete application, we include:

1. A C-144 form for the modification of the existing permit – signed by the operator
2. The previously-approved C-144
3. Documents required by item 11 of the C-144:
   a. Hydrogeologic data (see also the previously-approved C-144)
   b. Siting Criteria Compliance Demonstrations (see also the approved C-144)
   c. Design Plan (attached)
   d. Operating and Maintenance Plan (attached)
   e. Closure Plan (attached)
4. Documents required by item 18 of the C-144
   a. Siting Criteria Compliance Demonstration (see also the previously approved C-144)
   b. Proof of Surface Owner Notice (see attached approved APD)
   c. Construction/design Plan of Burial Trench (see attached)
   d. Protocols and procedures (see attached)
   e. Confirmation Sampling Plan (see attached)
   f. Waste Material Sampling Plan (see attached)
   g. Disposal Facility Name and Permit Number
   h. Soil Cover Design (see attached)
   i. Re-vegetation Plan (see attached)
   j. Site Reclamation Plan (see attached)

We believe this submission will show that the pit design meets all of the criteria specified in NMOCD Rules. The NMOCD Artesia Office approved a similar design. If Lynx elects to request an exception to NMOCD Rules in the future, we will submit the request to the Environmental Bureau with a copy to your office.

Sincerely,
R.T. Hicks Consultants

Randall Hicks

Copy: Lynx Petroleum Consultants
Bureau of Land Management

AMENDMENT TO THE
04/08/10 APPROVED
C-144

Form C-144
July 21, 2008

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

RECEIVED
JUN 08 2010
HOBBSOCD

State of New Mexico
Energy Minerals and Natural Resources
Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

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: Lynx Petroleum Consultants, OGRID #: 013645
Address: PO Box 1708, Hobbs NM 88241
Facility or well name: Lusk 31 Federal #3
API Number: 30-025-39593 OCD Permit Number: P1-01553
U/L or Qtr/Qtr NW/SE Section 31 Township 18S Range 32E County: Lea
Center of Proposed Design: Latitude 32 42 07.04 Longitude -103 48 13.75 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 20 mil ☒ LLDPE ☐ HDPE ☐ PVC ☐ Other
☒ String-Reinforced
Liner Seams: ☒ Welded ☒ Factory ☐ Other Volume: 13000 bbl Dimensions: L 130 x W 90 x D 9

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___Not Applicable_____

☐ 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 SEE FIGURE	☐ 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 **SEE FIGURE**	☐ 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 SEE Figure	☐ 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 SEE figure	☐ 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 Figure	☐ 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. SEE FIGURE - 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 Figure	☐ Yes ☒ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division SEE FIGURE	☐ Yes ☒ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map SEE EXPLANATION and Figure	☐ Yes ☒ No
Within a 100-year floodplain. - FEMA map No FEMA Map exists, see explanation in text	☐ 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 SEE EXPLANATION
- ☐ 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): Larry R. Scott Title: President

Signature: Larry R Scott Date: June 8, 2010

e-mail address: lrscott@leaco.net Telephone: 575-392-6950

20.
OCD Approval: ☐ Permit Application (including closure plan) ☒ Closure Plan (only) ☐ OCD Conditions (see attachment) AMMENDED FROM 04/08/10

OCD Representative Signature: Geoffrey Leking **Approval Date:** 06/16/10

Title: Environmental Engineer **OCD Permit Number:** P1-01553

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: _____

C-144 Modification Supplemental Documentation
Lusk 31 Federal #3 API # 30-025-39593

Introduction

Lynx Petroleum Consultants, Inc. (Lynx) requests administrative approval to construct the temporary drilling pit with 1.5H:1V slopes for certain sides of the drilling pit as shown in the design drawings. Lynx will adhere to all other prescriptive mandates of NMOCD Rules. If any statements in this submission inadvertently suggest that Lynx will not adhere to all other mandates in NMOCD Rules, Lynx will adhere to the Rules, not the text in this submission. If NMOCD finds any such language, please bring it to our attention so we may correct it.

Hydrogeologic Data

The information identified in item 10, "Siting Criteria" of the C-144 is attached. These are:

1. Figure 1 –presents data from the Office of the State Engineer (OSE) database and USGS database. This figure shows the location of the nearest registered water supply wells and available depth to ground water data.
2. Figure 2- USGS topographic map of the area. These maps show locations of any significant watercourse the locations of windmills and other wells that may not be registered with the OSE
3. Figure 3 – recent aerial photograph showing the presence of structures, which in this area are oil wells and tank batteries
4. Figure 4 - is a street map that also shows the location of the nearest incorporated municipal boundary
5. Figure 5 – shows the no wetlands are identified in the area directly surrounding the site
6. Figure 6 – shows the location of the nearest identified subsurface mine
7. Figure 7 – shows the area in relation to identified unstable areas

A FEMA floodplain map of the area does not yet exist. However, Figure 2 and our site visit confirm that this sand dune area is not within a floodplain. There is no evidence of flooding at or near the site that would endanger the temporary pit or burial trench. Our analysis agrees with the evaluation of NMOCD through the approved permit for the pit and in-place burial.

Siting Criteria Compliance Demonstration

As designated in the C-144 the location of the pit and burial trench meet the criteria of NMOCD Rules. We believe the data presented in Figures 1-7 demonstrate that:

Ground water is GREATER than 100 feet below the bottom of the temporary pit and proposed burial trench

Figure 1 shows all wells in the OSE database, wells with depth to water data from the USGS database and information on well depths and aquifers from the

Petroleum Recovery Research Center (PRRC). The map confirms information typically employed by NMOCD to determine the depth to water.

The map indicates that nearby wells obtain ground water from the Santa Rosa Sandstone (the base of the Chinle) or from the Chinle (based upon our evaluation of recorded total depths and the independent evaluation by the PRRC). Ground water in the Chinle (and Santa Rosa) is generally under pressure (confined) and therefore cannot be impaired by surface releases. Moreover, wells south of the site that draw water from the Chinle and Santa Rosa show depth to water measurements in excess of 100 feet. Note that some wells in the OSE database do not have data for depth to water or total depth (e.g. TD = 0) and these registered wells might be applications for wells that were nto drilled, wells drilled prior to requirements to submit information to the OSE or drilled wells where the applicant did not submit data.

The pit, excavated material and burial trench is NOT 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).
The approved permit for in-place burial, Figure 2-3 and Appendix A confirm this statement.

The pit and burial trench is NOT within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.
The approved permit, Figure 2-3 and Appendix A confirm this statement.

The pit and burial trench is NOT within 500 feet of a private, domestic fresh water well or spring used by less than five households for domestic or stock watering purposes, it is NOT within 1,000 feet of any other fresh water well or spring.
The approved permit, Figures 1-3 and Appendix A support this statement.

The pit and burial trench is NOT 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.
The approved permit for in-place burial and Figure 4 confirm this statement.

The pit and burial trench is NOT within 500 feet of a wetland.
The approved permit for in-place burial, Figure 5 and Appendix A confirm this statement.

The pit, excavated material and burial trench is NOT within an area overlying a subsurface mine.

The approved permit for in-place burial and Figure 6 confirm this statement. The closest underground mine is shown in the southeast corner of Figure 6, many miles south of the site.

The pit and burial trench is NOT within an unstable area.
Our inquiry confirms the opinion suggested by the approved permit for in-place burial, that the pit (and proposed burial trench) is not in an unstable area. Figure 7 shows that the area is not within any karst area, which is a strong indicator of unstable areas. Our site visit and our examination of the geology of the area (see Figure 1) allow us to provide a professional opinion that the site is not in an unstable area.

The pit, excavated material and burial trench is NOT within a 100-year floodplain.
The approved permit for in-place burial, Figure 2 and our site visit confirm this statement. The location of the pit is not in or near an active watercourse. No FEMA map has been created for this area, so our professional judgment is based on observations of the site location and other available data.

Design Plan

Figures 8 through 10 present the design plan for the proposed drilling pit. The plan consists of the following protocols, which are derived from NMOCD Rules. The purpose of the pit is to contain liquids and solids, prevent contamination of fresh water and protect public health and the environment. The design proposes appropriate engineering principles and practices and will follow applicable liner manufacturers' requirements. Lynx will:

I. Prior to constructing the pit the operator will strip and stockpile the topsoil for use as the final cover or fill at the time of closure.
II. The operator will post an upright sign not less than 12 inches by 24 inches with lettering not less than two inches in height in a conspicuous place on the fence surrounding the pit, unless the pit is located on a site where there is an existing well signed in compliance with 19.15.16.8 NMAC, that is operated by the same operator. The operator will post the sign in a manner and location such that a person can easily read the legend. The sign will provide the following information: the operator's name; the location of the site by quarter-quarter or unit letter, section, township and range; and emergency telephone numbers.
III. The operator will fence or enclose the pit in a manner that prevents unauthorized access and will maintain the fences in good repair.
IV. The operator will fence the pit to exclude livestock with a four foot fence that has at least four strands of barbed wire evenly spaced in the interval between one foot and four feet above ground level.

With respect to the design and construction of the temporary pit:

A. The operator will design and construct a temporary pit to ensure the confinement of liquids to prevent unauthorized releases.
B. The temporary pit will have a properly constructed foundation and interior slopes consisting of a firm, unyielding base, smooth and free of rocks, debris, sharp edges or irregularities to prevent the liner's rupture or tear.
C. The operator will construct a temporary pit so that the slopes are no steeper than two horizontal feet to one vertical foot (2H:1V). However, this application requests that the appropriate division district office approve an alternative to the slope requirement as shown in the design diagram in Figure 10, some slopes will be 1.5H:1V. NMOCD's approval of similar requests provides the demonstration that the operator can construct and operate the temporary pit in a safe manner to prevent contamination of fresh water and protect public health and the environment.
D. The temporary pit uses a geomembrane liner consisting of 20-mil string reinforced LLDPE that the appropriate division district office has approved in the past. The geomembrane liner is composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. The liner material is resistant to ultraviolet light. Liner compatibility complies with EPA SW-846 method 9090A.
E. The operator will minimize liner seams and orient them up and down, not across a slope. The operator will use factory welded seams where possible. Prior to field seaming, the operator will overlap liners four to six inches and orient seams parallel to the line of maximum slope, *i.e.*, oriented along, not across, the slope. The operator will minimize the number of field seams in corners and irregularly shaped areas.
F. Qualified personnel will perform field seaming. The operator will weld field liner seams.
G. Construction will avoid excessive stress-strain on the liner.
H. Geotextile will be placed under the liner where needed to reduce localized stress-strain or protuberances that may otherwise compromise the liner's integrity.
I. The operator will anchor the edges of all liners in the bottom of a compacted earth-filled trench. The anchor trench will be at least 18 inches deep.
J. The operator will ensure that the liner is protected from any fluid force or mechanical damage at any point of discharge into or suction from the lined temporary pit through the placement of a layer of protective felt over the liner and the placement of pipes at these locations as shown in the design drawings.
K. The operator will design and construct a temporary pit to prevent run-on of surface water. A berm, ditch, proper sloping or other

diversion will surround a temporary pit to prevent run-on of surface water as shown on the design drawings.

L. The volume of a temporary pit does not exceed 10 acre-feet, including freeboard.

Additionally:

- If practical, the contractor will separate coarser material from finer-grained material excavated from the pit for use in constructing the soil cover over the buried waste when operations of the drilling pit cease.
- Below the liner, the contractor will install the leak detection system described in the design drawings.
- Above the liner, a drain system composed of perforated pipe will allow removal of brine and associated constituents of concern from the residual solid materials.

Operations Plan

As stated earlier, the operator will operate and maintain the temporary pit to contain liquids and solids and maintain the integrity of the liner, liner system or secondary containment system, prevent contamination of fresh water and protect public health and the environment. Specifically:

1. The operator will dispose of all drilling fluids in a manner, approved by division rules, that prevents the contamination of fresh water and protects public health and the environment.
2. The operator will not discharge into or store any hazardous waste in the temporary pit.
3. If the pit liner's integrity is compromised, or if any penetration of the liner occurs above the liquid's surface, then the operator will notify the appropriate division district office within 48 hours of the discovery and repair the damage or replace the liner.
4. If the pit develops a leak, or if any penetration of the pit liner occurs below the liquid's surface, then the operator will remove all liquid above the damage or leak line within 48 hours, notify the appropriate division district office within 48 hours of the discovery and repair the damage or replace the pit liner
5. The injection or withdrawal of liquids from the pit will be accomplished through a header, diverter or other hardware that prevents damage to the liner by erosion, fluid jets or impact from installation and removal of hoses or pipes.
6. The operator will operate and install the pit to prevent the collection of surface water run-on.
7. The operator will install, or maintain on site, an oil absorbent boom or other device to contain and remove oil from the pit's surface.

The operator will maintain and operate a temporary pit in accordance with the following additional protocols.

a. Only fluids used or generated during the drilling process will be discharged into a temporary pit.
b. The operator will maintain the temporary pit free of miscellaneous solid waste or debris.
c. The operator shall use a tank made of steel or other material, which the appropriate division district office approves, to contain hydrocarbon-based drilling fluids. The operator does not plan on using hydrocarbon-based drilling fluids.
d. Immediately after cessation of a drilling operation, the operator will remove any visible or measurable layer of oil from the surface of the drilling pit.
e. The operator will maintain at least two feet of freeboard for a temporary pit.
f. The operator will inspect a temporary pit containing drilling fluids at least daily while the drilling rig is on-site.
g. Thereafter, the operator will inspect the temporary pit weekly so long as liquids remain in the temporary pit.
h. The operator will maintain a log of such inspections and make the log available for the appropriate division district office's review upon request. The operator will file a copy of the log with the appropriate division district office when the operator closes the temporary pit.
i. The operator will remove all free liquids from a temporary pit within 30 days from the date that the operator releases the drilling rig. The operator will note the date of the drilling or workover rig's release on form C-105 or C-103 upon well completion.

In addition to the specifications outlined above, Lynx will:

- Use steel pit and lined outer horse shoe reserve pit to circulate mud and drill surface casing with fresh water.
- Use steel pit and lined inner horse shoe reserve pit to circulate mud and drill intermediate casing with saturated brine.
- Transfer sufficient brine fluid from inner pit to outer horse shoe pit to create appropriate salinity/weight of drilling fluid for drilling to total depth.
- Use steel pit and lined outer horse shoe reserve pit to circulate mud and drill to total depth with cut brine.
- When possible, add fresh water to inner pit to create brine/cut brine and transfer fluid to outer pit as necessary to accommodate for fluid loss during drilling.
- During drilling the liner leak detection system is checked routinely and weekly during drying and closure.
- After 10-40 days of drainage pumping and solids drying, the solids will be sampled as described below.

Closure Plan

Siting Criteria Compliance Demonstration

As described above, the site meets all of the siting criteria for on-site trench burial.

Proof of Surface Owner Notification

The Federal government is the surface landowner and their representative, the BLM, has approved the APD with the provision for on-site burial of cuttings. The approved APD is proof of surface owner notification.

Construction/Design of Burial Trench

Lynx proposes to close the pit using an on-site trench adjacent to the temporary pit. The operator will design and construct an on-site trench for closure as specified in Paragraph (2) of Subsection B of 19.15.17.13 NMAC. Specifically:

1. The operator will excavate to an appropriate depth that allows for the installation of the geomembrane bottom liner, geomembrane liner cover and the division-prescribed soil cover required pursuant to Subsection H of 19.15.17.13 NMAC.
2. The on-site trench will have a properly constructed foundation and side walls consisting of a firm, unyielding base, smooth and free of rocks, debris, sharp edges or irregularities to prevent the liner's rupture or tear.
3. Geotextile will be placed under the liner where needed to reduce localized stress-strain or protuberances that may otherwise compromise the liner's integrity.
4. The on-site trench will be constructed with a geomembrane liner that consists of a 20-mil string reinforced LLDPE liner
5. The geomembrane liner will be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. The liner material will be resistant to ultraviolet light. Liner compatibility will comply with EPA SW-846 method 9090A.
6. The operator will minimize liner seams and orient them up and down, not across a slope and the operator will use factory welded seams where possible. Prior to field seaming, the operator will overlap liners four to six inches and orient liner seams parallel to the line of maximum slope, *i.e.*, oriented along, not across, the slope. The operator will minimize the number of field seams in corners and irregularly shaped areas.
7. Qualified personnel will perform field seaming. The operator will weld field liner seams.

8. The operator will install sufficient liner material to reduce stress-strain on the liner.
9. The operator will ensure that the outer edges of all liners are secured for the placement of the excavated waste material into the trench.
10. The operator will fold the outer edges of the trench liner to overlap the waste material in the trench prior to the installation of the geomembrane cover.
11. The operator will install a geomembrane cover over the waste material in the lined trench. The operator will install the geomembrane cover in a manner that prevents the collection of infiltration water in the lined trench and on the geomembrane cover after the soil cover is in place.
12. The geomembrane cover will consist of a 20-mil string reinforced LLDPE liner. The geomembrane cover will be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. Cover compatibility will comply with EPA SW-846 method 9090A.

Protocols and Procedures

The operator will remove all liquids from the temporary pit prior to closure and dispose of the liquids in a division-approved facility or recycle, reuse or reclaim the liquids in a manner that the appropriate division district office approves.

Prior to placing the contents from the temporary pit into the trench, the operator will stabilize or solidify the contents to a bearing capacity sufficient to support the final cover of the trench burial. The operator will not mix the contents with soil or other material at a mixing ratio of greater than 3:1, soil or other material to contents.

The operator will place a steel marker at the center of an on-site burial. The steel marker will be not less than four inches in diameter and will be cemented in a three-foot deep hole at a minimum. The steel marker will extend at least four feet above mean ground level and at least three feet below ground level. The operator name, lease name and well number and location, including unit letter, section, township and range, and that the marker designates an on-site burial location will be welded, stamped or otherwise permanently engraved into the metal of the steel marker.

The operator will report the exact location of the on-site burial on form C-105 filed with the division.

The operator will file a notice with the BLM identifying the exact location of the on-site burial as there is no deed associated with this location

Confirmation Sampling Plan

Because ground water is more than 100 feet below the bottom of the temporary pit, the operator will collect, at a minimum, a five point, composite sample; collect individual grab samples from any area that is wet, discolored or showing other evidence of a release; and analyze for benzene, total BTEX, TPH, the GRO and DRO combined fraction and chlorides to demonstrate that benzene, as determined by EPA SW-846 method 8021B or 8260B or other EPA method that the division approves, does not exceed 0.2 mg/kg; total BTEX, as determined by EPA SW-846 method 8021B or 8260B or other method that the division approves, does not exceed 50 mg/kg; the GRO and DRO combined fraction, as determined by EPA SW-846 method 8015M, does not exceed 500 mg/kg; the TPH, as determined by EPA method 418.1 or other EPA method that the division approves, does not exceed 2500 mg/kg; and chlorides, as determined by EPA method 300.1, do not exceed 1000 mg/kg or the background concentration, whichever is greater. The operator will notify the division of its results on form C-141.

If the operator or the division determines that a release has occurred, then the operator will comply with 19.15.29 NMAC and 19.15.30 NMAC, as appropriate.

If the sampling program demonstrates that a release has not occurred or that any release does not exceed the concentrations specified in Subparagraph (c) of Paragraph (3) of Subsection F of 19.15.17.13 NMAC, as the operator has certified to the division that it has given written notice to the surface owner that it intends to do so. The operator will use a separate on-site trench for closure of the temporary pit. The operator will backfill the temporary pit excavation with compacted, non-waste containing, earthen material; construct a division-prescribed soil cover; recontour and re-vegetate the site. The division-prescribed soil cover, recontouring and re-vegetation requirements will comply with Subsections G, H and I of 19.15.17.13 NMAC.

Waste Material Sampling Plan

The operator will collect at a minimum, a five point, composite sample of the contents of the temporary pit to demonstrate that the TPH concentration, as determined by EPA method 418.1 or other EPA method that the division approves, does not exceed 2500 mg/kg. Using EPA SW-846 method 1312 or other EPA leaching procedure that the division approves, the operator will demonstrate that (i) the chloride concentration, as determined by EPA method 300.1 or other EPA method that the division approves, does not exceed 3000 mg/l or the background concentration, whichever is greater, (ii) the concentrations of the inorganic water contaminants specified in Subsection A of 20.6.2.3103 NMAC as determined by appropriate EPA methods do not exceed the standards specified in Subsection A of 20.6.2.3103 NMAC or the background concentration, whichever is greater, and (iii) the concentrations of the organic water contaminants specified in Subsection A of 20.6.2.3103 NMAC as

determined by appropriate EPA methods do not exceed the standards specified in Subsection A of 20.6.2.3103 NMAC, unless otherwise specified above. The operator may collect the composite sample prior to treatment or stabilization to demonstrate that the contents do not exceed these concentrations. However, if the contents collected prior to treatment or stabilization exceed the specified concentrations the operator will collect a second five point, composite sample of the contents after treatment or stabilization to demonstrate that the contents do not exceed these concentrations.

Soil Cover Design

After the operator has removed the pit contents to the burial trench, the soil cover will consist of the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater.

The soil cover for trench burial will consist of a minimum of four feet of compacted, non-waste containing, earthen material. The soil cover will include either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater.

The operator will construct the soil cover to the site's existing grade and prevent ponding of water and erosion of the cover material.

Re-vegetation Plan

The first growing season after the operator closes the pit and trench, the operator will seed or plant the disturbed areas.

The operator will accomplish seeding by a division-approved method. The operator will notify the NMOCD District Office of the proposed protocol at least 30-days prior to implementing the re-vegetation plan.

The operator will obtain vegetative cover that equals 70% of the native perennial vegetative cover (un-impacted by overgrazing, fire or other intrusion damaging to native vegetation) consisting of at least three native plant species, including at least one grass, but not including noxious weeds, and maintain that cover through two successive growing seasons.

During the two growing seasons that prove viability, there will be no artificial irrigation of the vegetation.

The operator will repeat seeding or planting until it successfully achieves the required vegetative cover.

When conditions are not favorable for the establishment of vegetation, such as periods of drought, the operator may request to delay seeding or planting until soil moisture conditions become favorable or may require the operator to use

additional techniques such as mulching, fertilizing, irrigating, fencing or other practices.

The operator will notify the division when it has seeded or planted and when it successfully achieves re-vegetation.

Site Reclamation Plan

After closure of the pit and trench, the operator will reclaim the pit location and trench location and all areas associated with the pit and trench including associated access roads to a safe and stable condition that blends with the surrounding undisturbed area. The operator will substantially restore the impacted surface area to the condition that existed prior to oil and gas operations by placement of the soil cover as provided in Subsection H of 19.15.17.13 NMAC (described in this submittal), recontour the location and associated areas to a contour that approximates the original contour and blends with the surrounding topography and re-vegetate according to Subsection I of 19.15.17.13 NMAC (as described herein).

Alternative Closure Plan

In the event that the proposed closure method does not satisfy the on-site closure standards specified in Subsection F of 19.15.17.13 NMAC or, if applicable, other on-site closure standards that the environmental bureau in the division's Santa Fe office approves, the operator will close the temporary pit by excavating all contents and, if applicable, synthetic pit liners and transferring those materials to a division-approved facility.

Disposal Facility Names and Permit Numbers

Lea Land, LLC	NM-01-0035
Controlled Recovery, Inc.	NM-01-0006

Closure Notice and Reporting to NMOCD

The operator will notify the appropriate division district office verbally or by other means at least 72 hours, but not more than one week, prior to any closure operation. The notice will include the operator's name and the location to be closed by unit letter, section, township and range. well's name, number and API number.

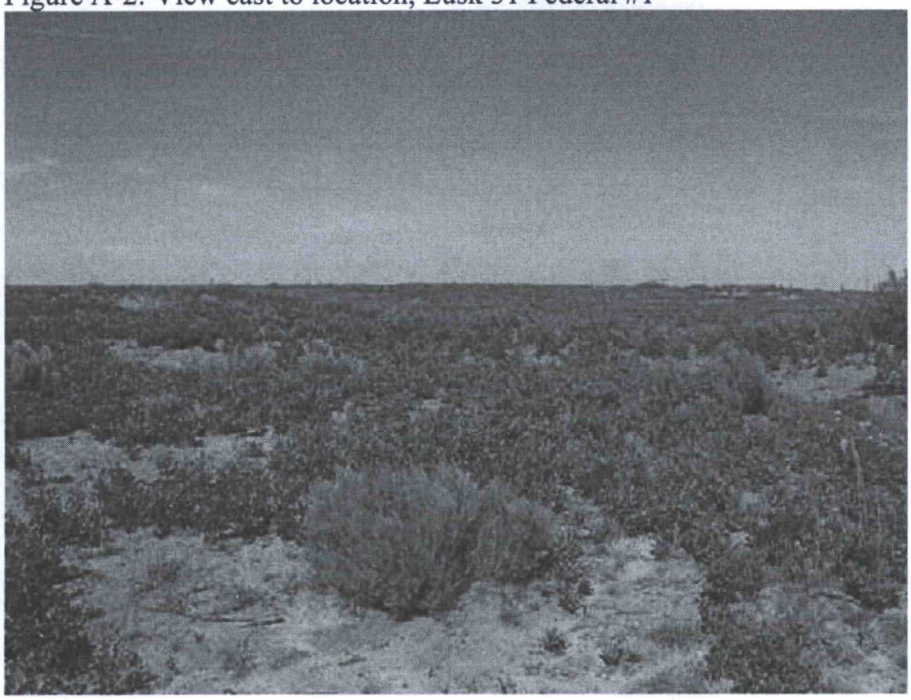
Within 60 days of closure completion, the operator will submit a closure report on form C-144, with necessary attachments to document all closure activities including sampling results; information required by 19.15.17 NMAC; a plot plan; and details on back-filling, capping and covering, where applicable.

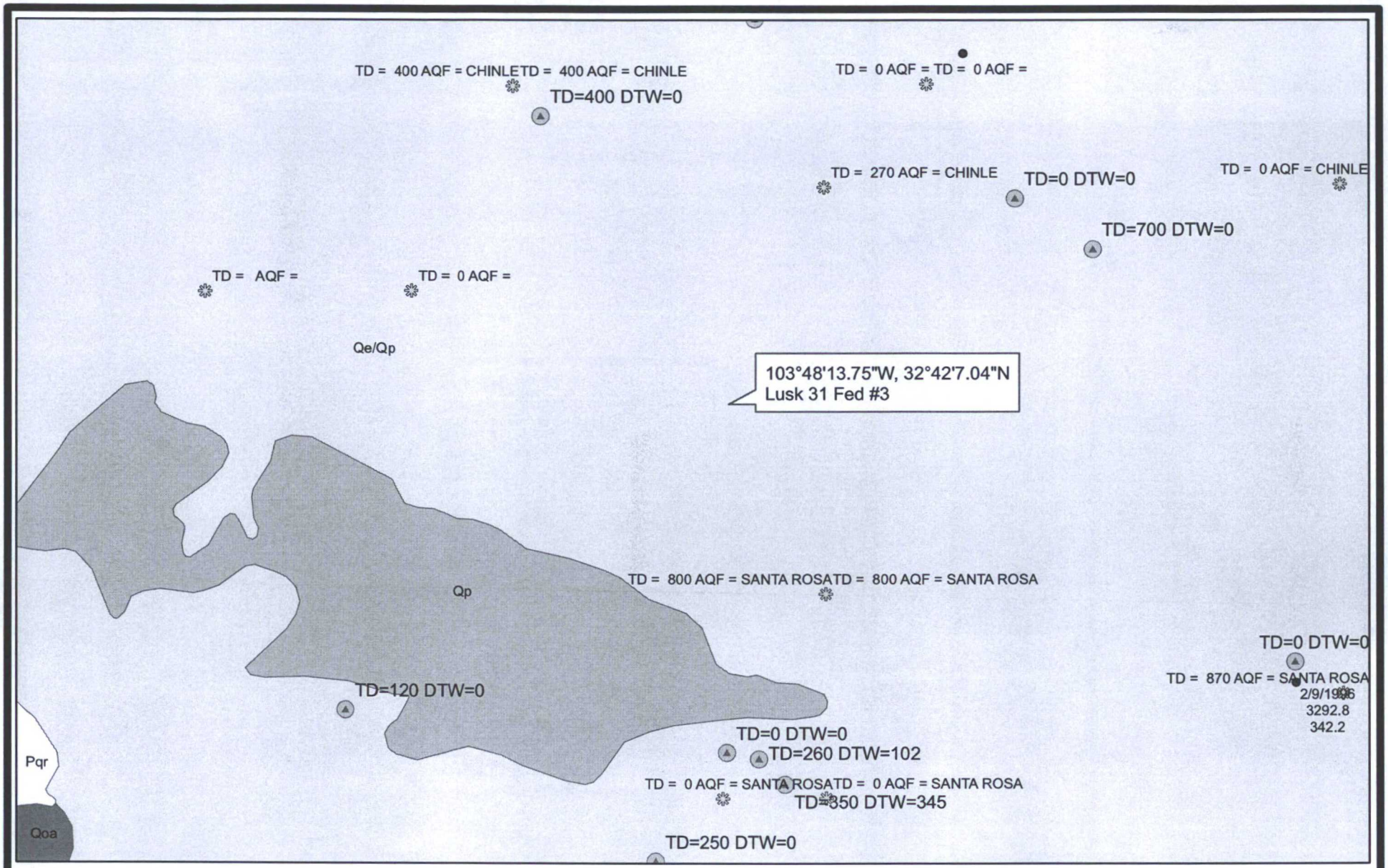
In the closure report, the operator will certify that all information in the report and attachments is correct and that the operator has complied with all applicable closure requirements and conditions specified in the approved closure plan. If the operator used a temporary pit, the operator shall provide a plat of the pit location on form C-105 within 60 days of closing the temporary pit.

Appendix A

Figure A-1: View North to the location, Lusk 31 Federal #2 on horizon at left.

Figure A-2: View east to location, Lusk 31 Federal #1

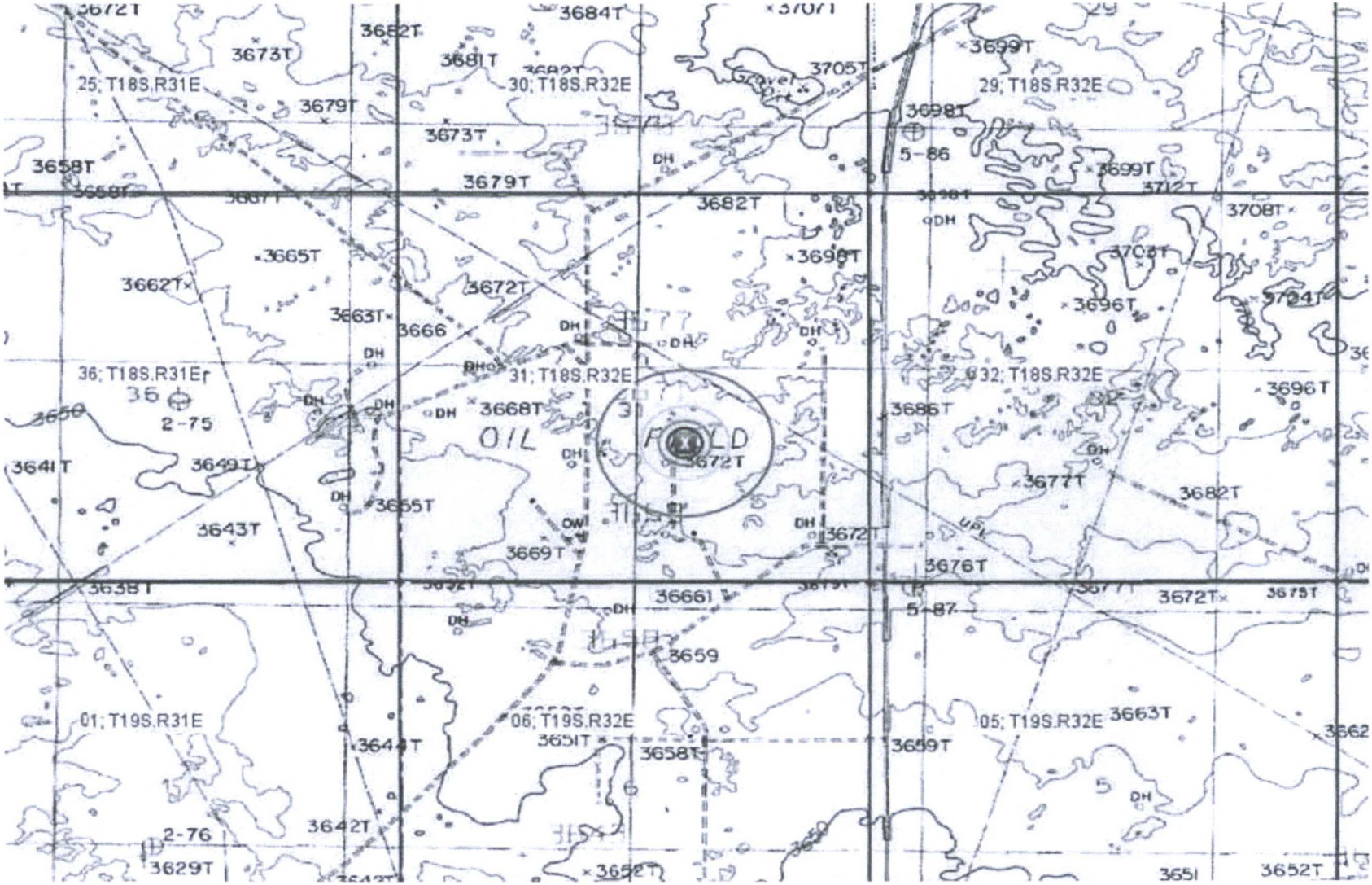




R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Geology and Depth to Ground Water (feet bgs)	Figure 1
	Lynx Petroleum- Lusk 31 Federal #2	June 2010

6/4/2010

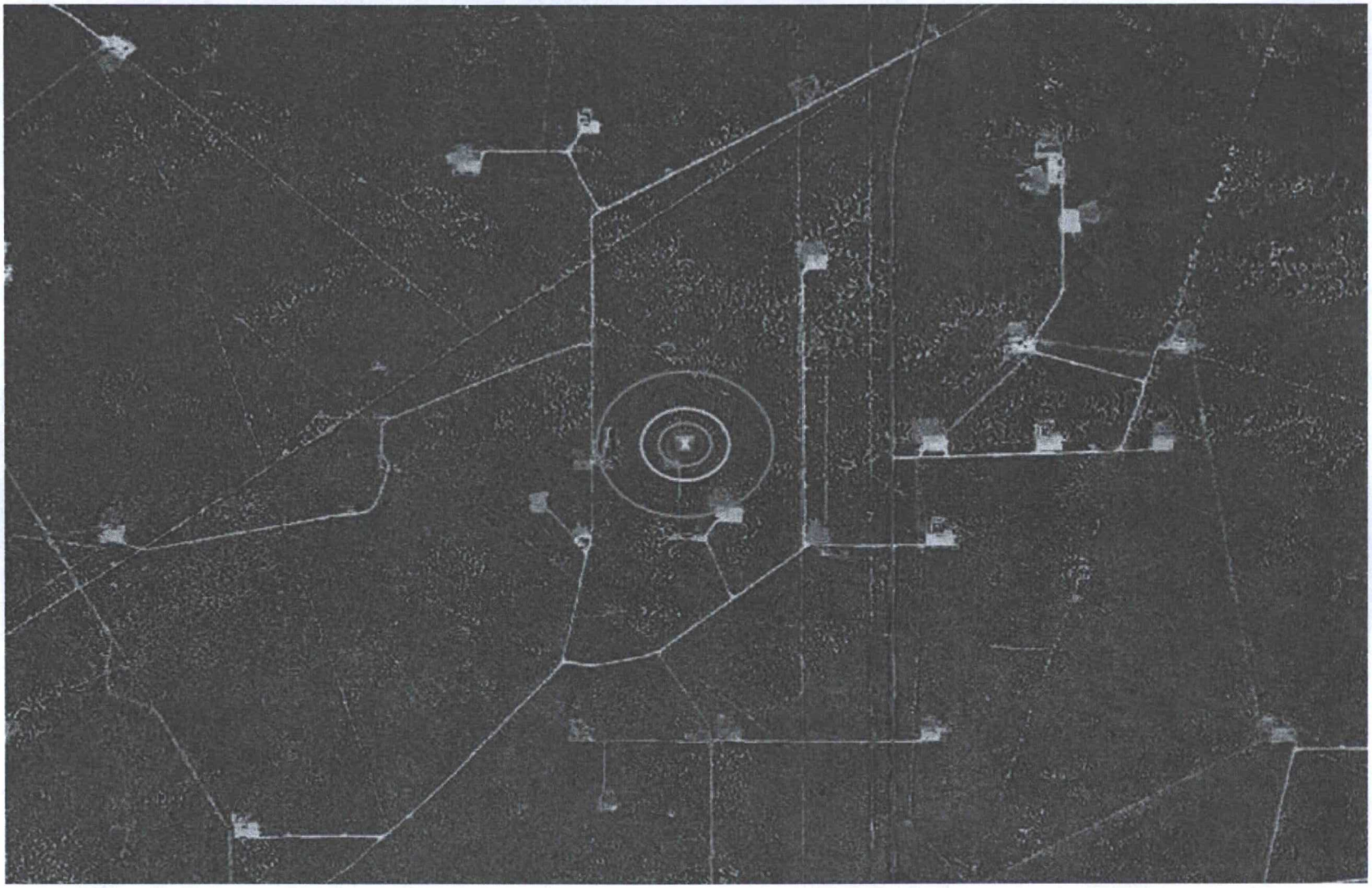
Z:/DRAFT GIS PLATE/LYNX LUSK 31 #2/FIG1GEODTW.MXD



0 1000 2000ft

N W E S

Petroleum Recovery Research Center	Topographic Map	Figure: 2
	Lynx Petroleum Lusk 31 Federal #3	Jun 04, 2010



0 1000 2000ft

N
W E
S

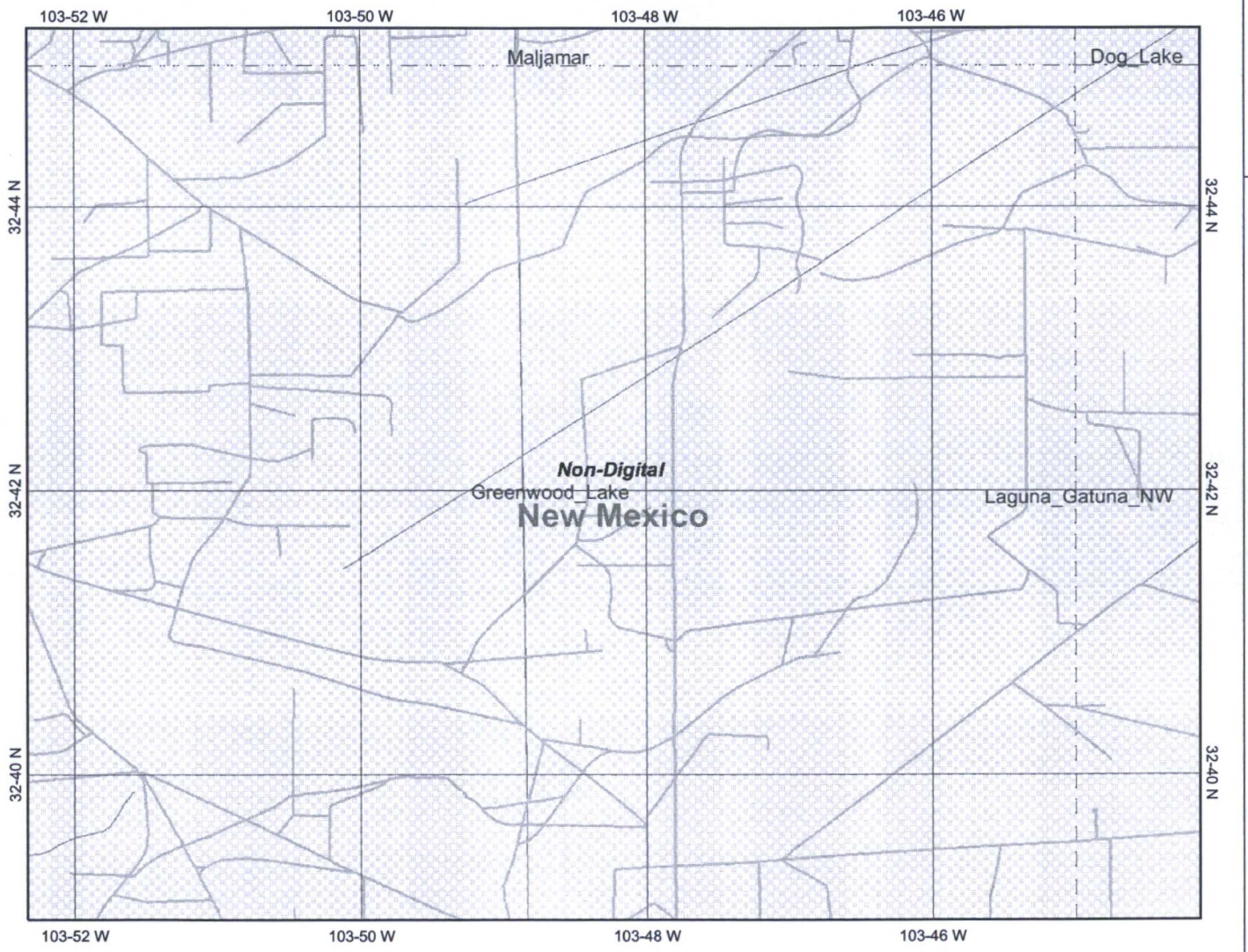
Petroleum Recovery Research Center	Recent Air Photo	Figure: 3
	Lynx - Lusk 31 Federal #3	Jun 04, 2010

0 5 10mi

N W E S

Petroleum Recovery Research Center	Municipal Boundaries	Figure: 4
	Lynx - Lusk 31 Federal #3	Jun 04, 2010

Figure 5 Wetlands Around Site



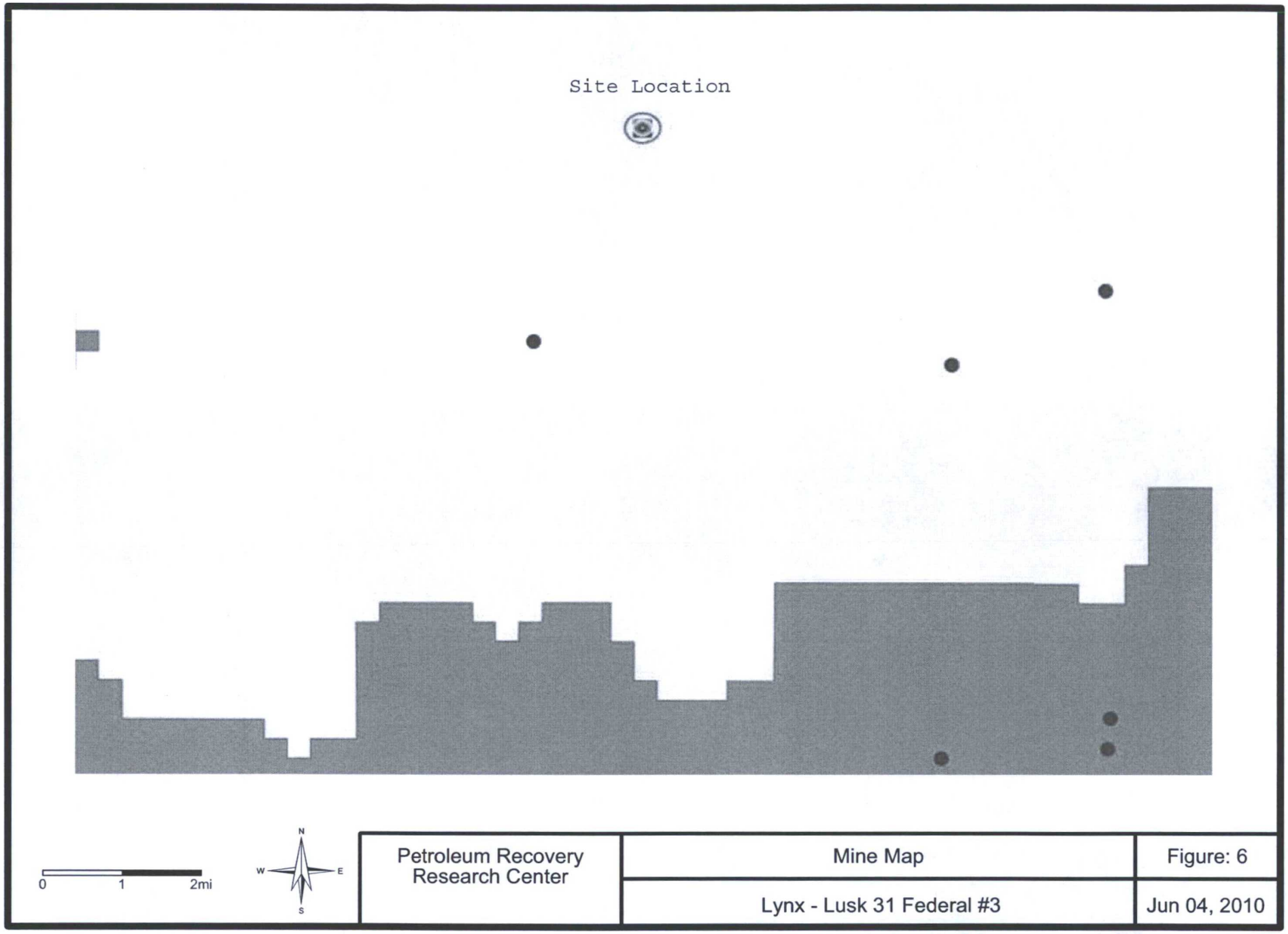
Map center: 32° 42' 7" N, 103° 48' 14" W

Legend

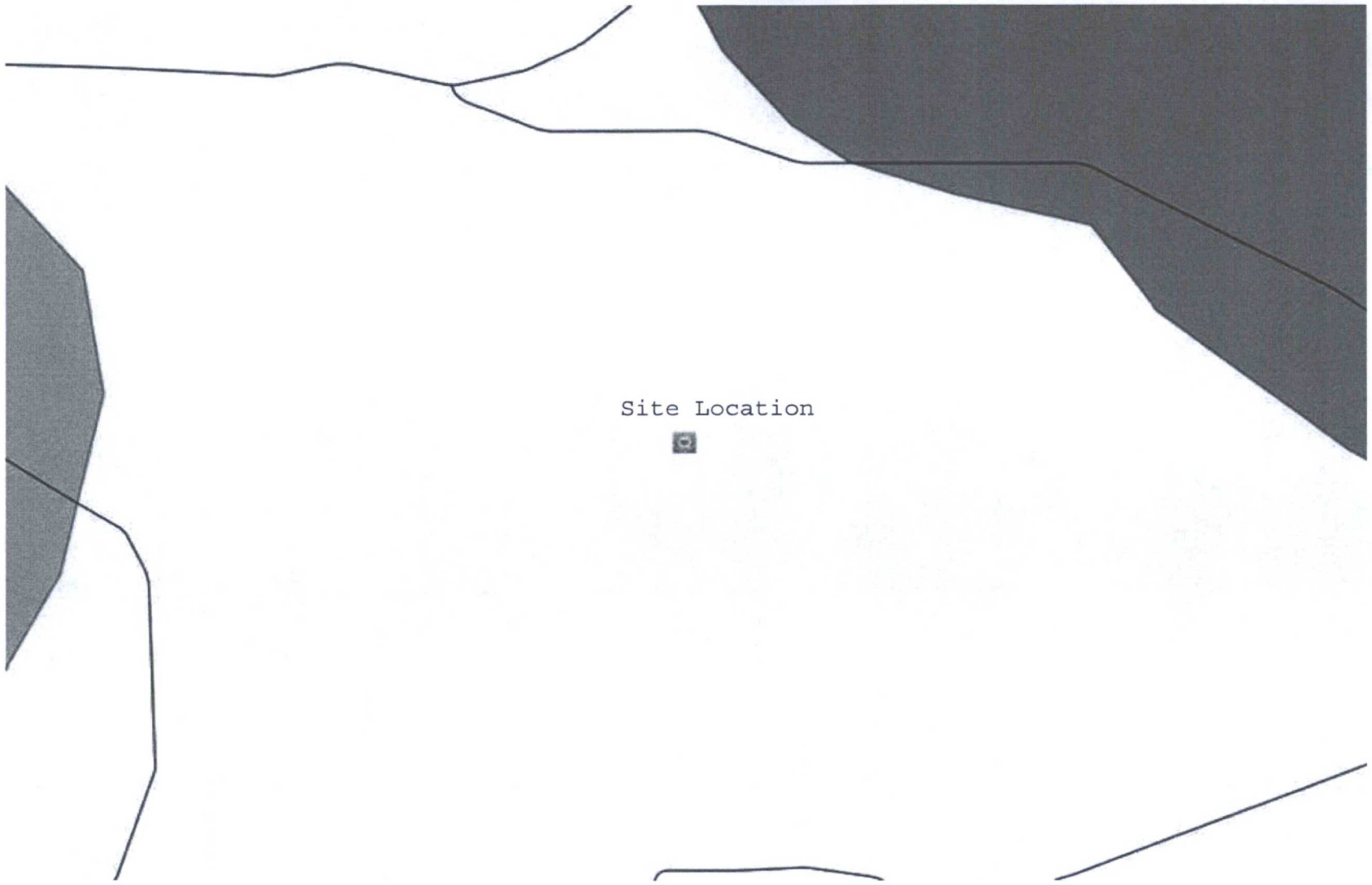
- Interstate
- Major Roads
- Other Road
- Interstate
- State highway
- US highway
- Roads
- Cities
- USGS Quad Index 24K
- Lower 48 Wetland Polygons
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine
- Lower 48 Available Wetland Data
- Non-Digital
- Digital
- No Data
- Scan
- NHD Streams
- Counties 100K
- Urban Areas 300K
- States 100K
- South America
- North America

Scale: 1:81,707

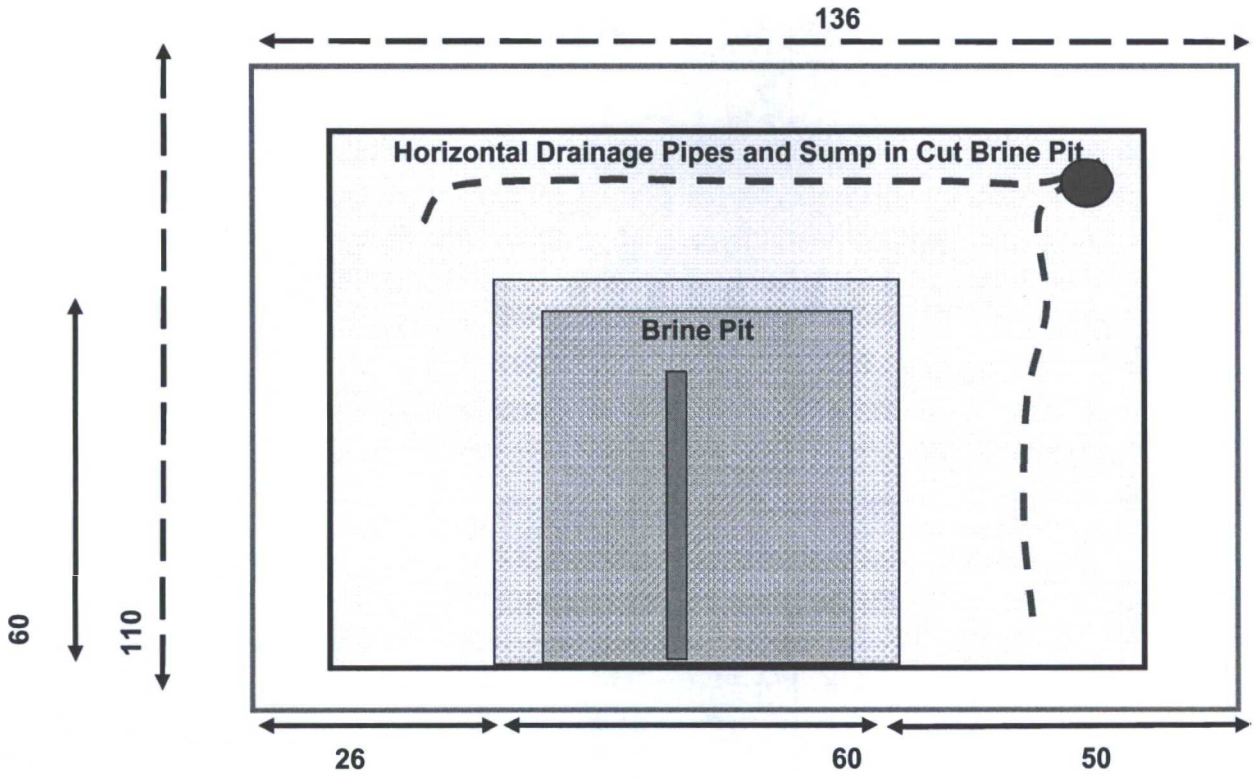
Notes: Lynx Petroluem
LUSK 31 Fed #3



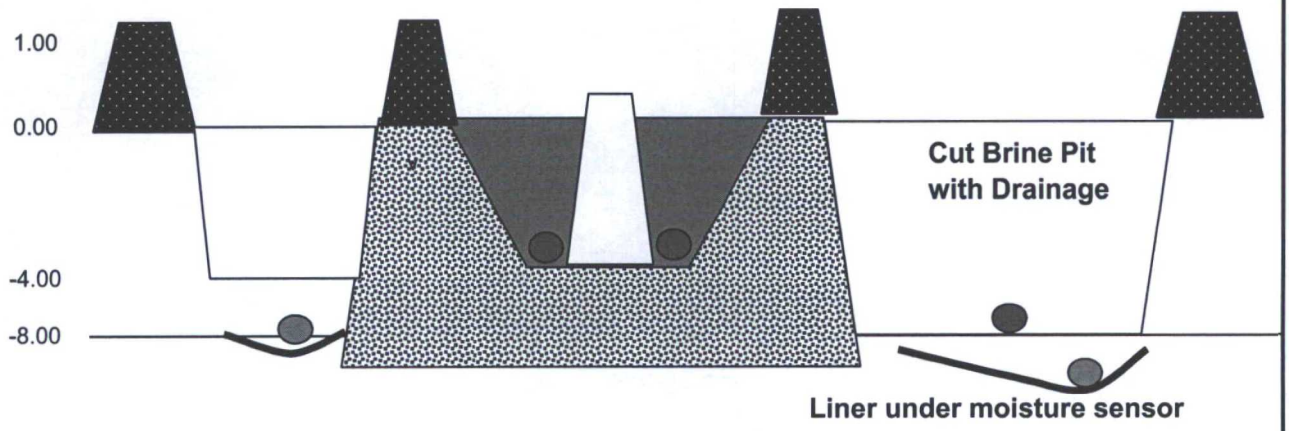
Petroleum Recovery Research Center	Mine Map	Figure: 6
	Lynx - Lusk 31 Federal #3	Jun 04, 2010



Petroleum Recovery Research Center	USGS Karst Map	Figure: 7
	Lynx - Lusk 31 Federal #3	Jun 04, 2010



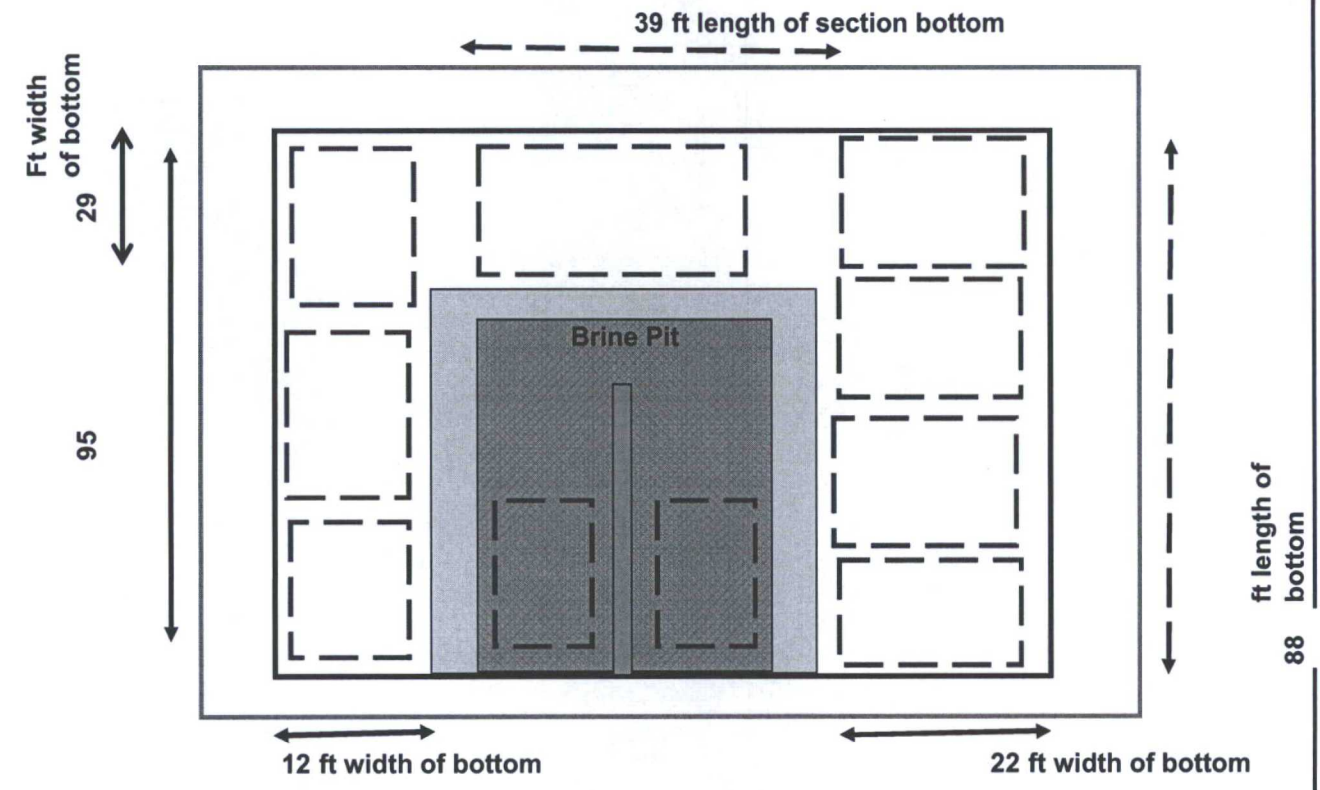
Dimensions center of berm to center of berm

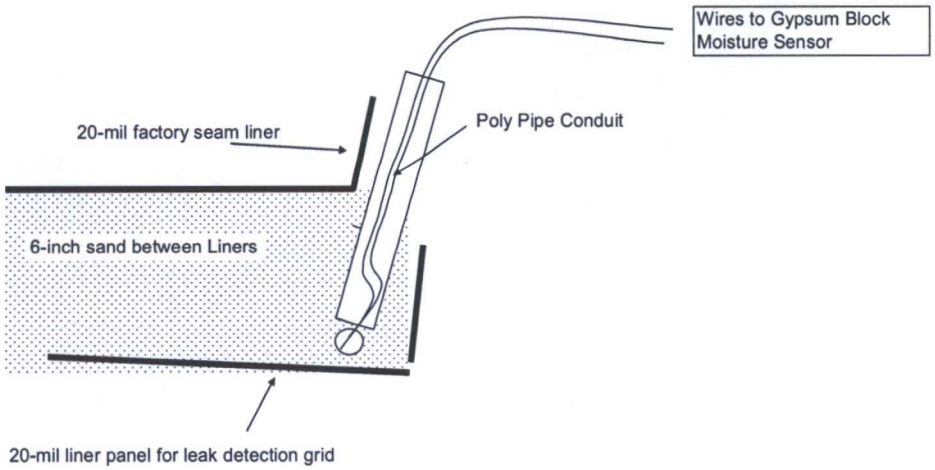


Patent Pending

R.T. Hicks Consultants, Ltd.	Pit Liner Schematics	Figure 8
	Lynx Petroleum Consultants - Lusk 31 Fed #3	May 2010

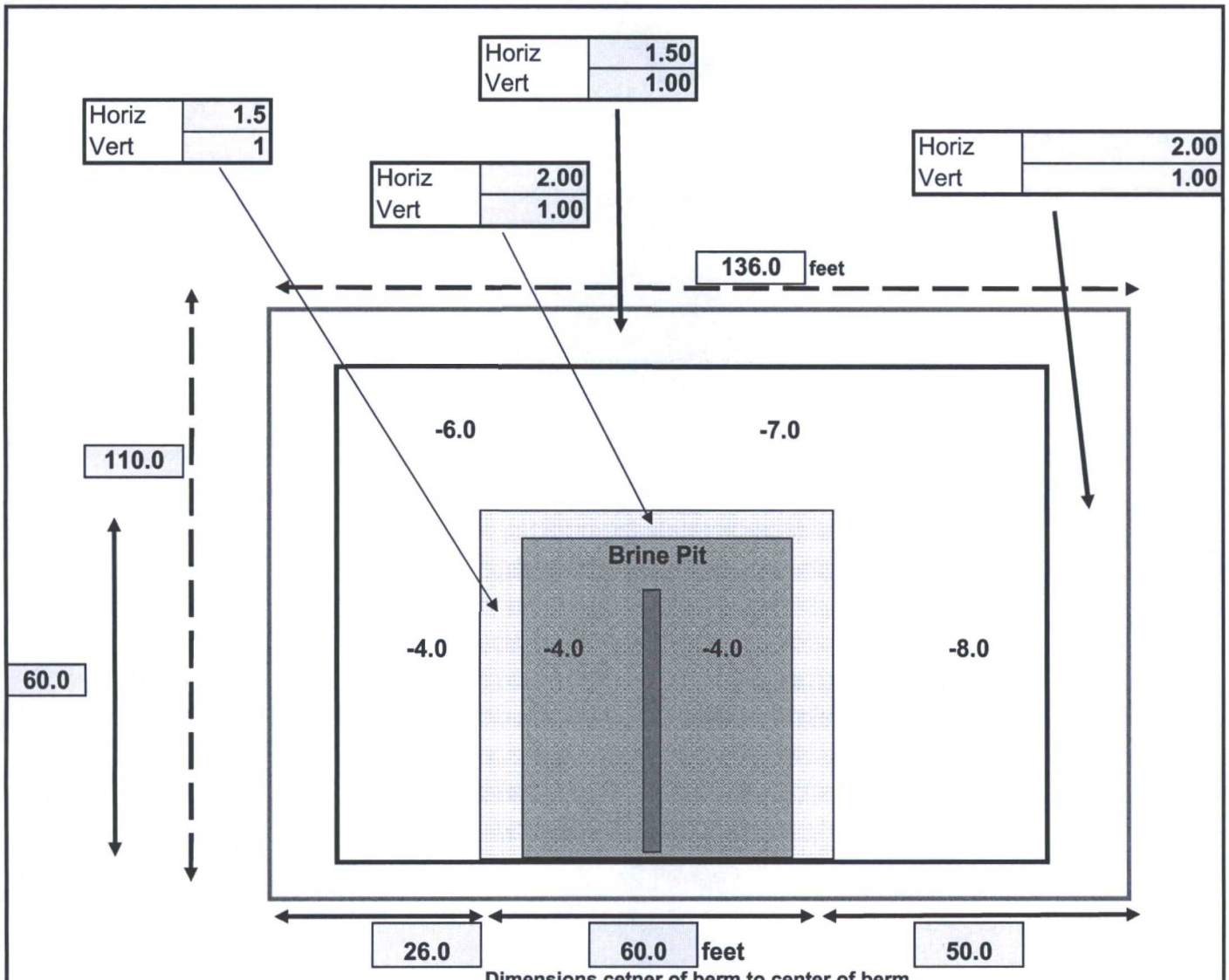
Soil Moisture Corporation Gypsum Block Model 5201F placed over 20-mil liner panel (dashed rectangles). Six inches of permeable material (e.g. soil or sand) placed between liner panel anc primary pit liner. Poly pipe conduit protects electrical leads from block to surface. Sloped liner panel directs any seepage to moisture sensor





Patent Pending

R.T. Hicks Consultants, Ltd.	Leak Detection System Schematic	Figure 9
	Lynx Petroleum Consultants - Lust 31 Fed #3	May 2010



Depth Inputs		
	Upper Right corner	-7.0
	Lower Right corner	-8.0
	Upper Left corner	-6.0
	Lower Left corner	-4.0
	Brine Pit (both cells)	-4.0

Berm ht. 1

Volume of Inner Shoe 2,122.95 **bbls**
Volume of Outer Shoe 11,552.68 **bbls**

R.T. Hicks Consultants, Ltd.	Depth of Pit Below Grade and Dimensions	Figure 10
	Lynx Petroleum Consultants - Lust 31 Fed #3	May 2010

C-144 Modification Supplemental Documentation
Lusk 31 Federal #3 API # 30-025-39593

Previously Approved C-144

6/8/2010

RECEIVED
DEC 09 2009
HOBBSOCD

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

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: [X] 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: Lynx Petroleum Consultants, Inc. OGRID #: 013645
Address P.O. Box 1708, Hobbs, NM 88241
Facility or well name: Lusk "31" Federal No. 3
API Number: 30-025-39593 OCD Permit Number: P1-01553
U/L or Qtr/Qtr NW/4SE/4 Section 31 Township 18S Range 32E County. Lea
Center of Proposed Design: Latitude 32°42'07.04" N Longitude 103°48'13.75" W NAD: [ ] 1927 [X] 1983
Surface Owner: [X] Federal [ ] State [ ] Private [ ] Tribal Trust or Indian Allotment

2
[X] **Pit:** Subsection F or G of 19.15.17.11 NMAC
Temporary: [X] Drilling [ ] Workover
[ ] Permanent [ ] Emergency [ ] Cavitation [ ] P&A
[X] Lined [ ] Unlined Liner type: Thickness 20 mil [X] LLDPE [ ] HDPE [ ] PVC [ ] Other _____
[X] String-Reinforced
Liner Seams. [X] Welded [ ] Factory [ ] Other _____ Volume. 15,500 bbl Dimensions: L 150 x W 150 x D 8

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 575'
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) CRI NM-01-0006
☒ 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): Larry R. Scott Title: President

Signature: Larry R Scott Date: October 1, 2009

e-mail address: lynxpet@leaco.net Telephone: 575-392-6950

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

OCD Representative Signature: Geoffrey Leking **Approval Date:** 04/08/2010

Title: Environmental Engineer **OCD Permit Number:** P1-01553

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 _____

Lusk '31' Federal No. 3
C-144 Attachments

All maps submitted with this application were generated utilized the Petroleum Recovery Research Center's "Pit Rule Mapping Portal".

Figure 1 is a topographic map at a 1"=2000' scale showing the area surrounding the proposed location.

Figure 2 was developed with the U.S.G.S. and O.S.E.S. layers turned on demonstrating that there are no ground water resources within several miles of the proposed location.

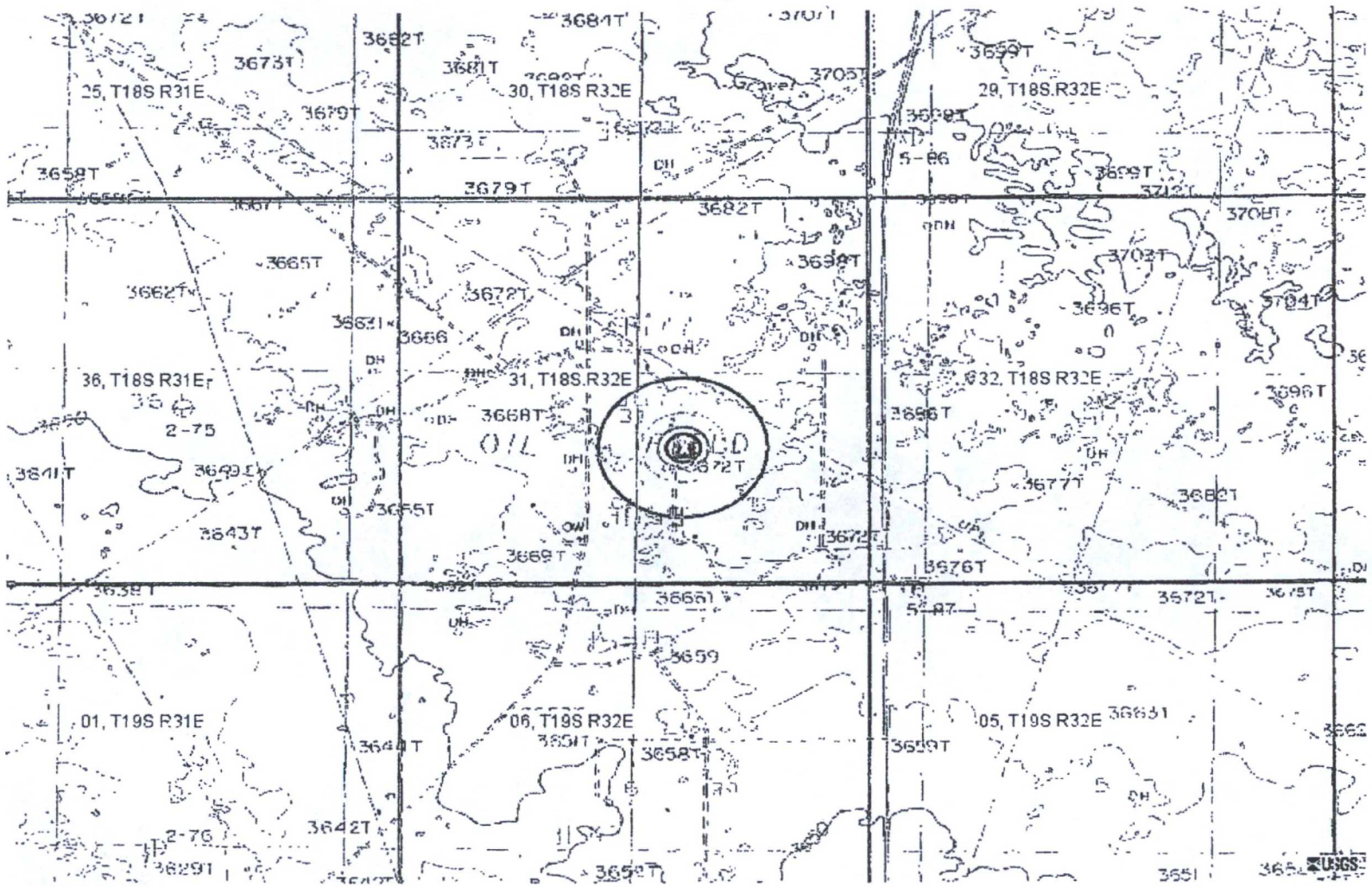
Figure 3 was developed with the surface water layer turned on demonstrating that there is no surface water with several miles of the proposed location.

Figure 4 is an aerial photograph demonstrating that there are no structures, municipal boundaries, wetlands, mines, or unstable areas within several miles of the proposed location. The area has not been mapped by FEMA as being within a 100 year floodplain.

We plan to push the topsoil to the north side of the location to be utilized for recover purposes at the conclusion of the drilling project. The pit will be constructed per the attached diagram and lined as per specifications. The three open sides will be fenced with four strands of barbed wire per specifications. The fourth side (rig side) will be left open until the drilling equipment has been removed from location at which time this will also be fenced.

We anticipate that the inner horshoe will contain 10.0 ppg (saturated) brine water to be used for the drilling of the salt section. The outer horshoe will initially contain fresh water but will "brine up" during the drilling of the production hole to a concentration of 60,000-100,000 ppm. Both inner and outer horshoes will be dewatered immediately following drilling operations.

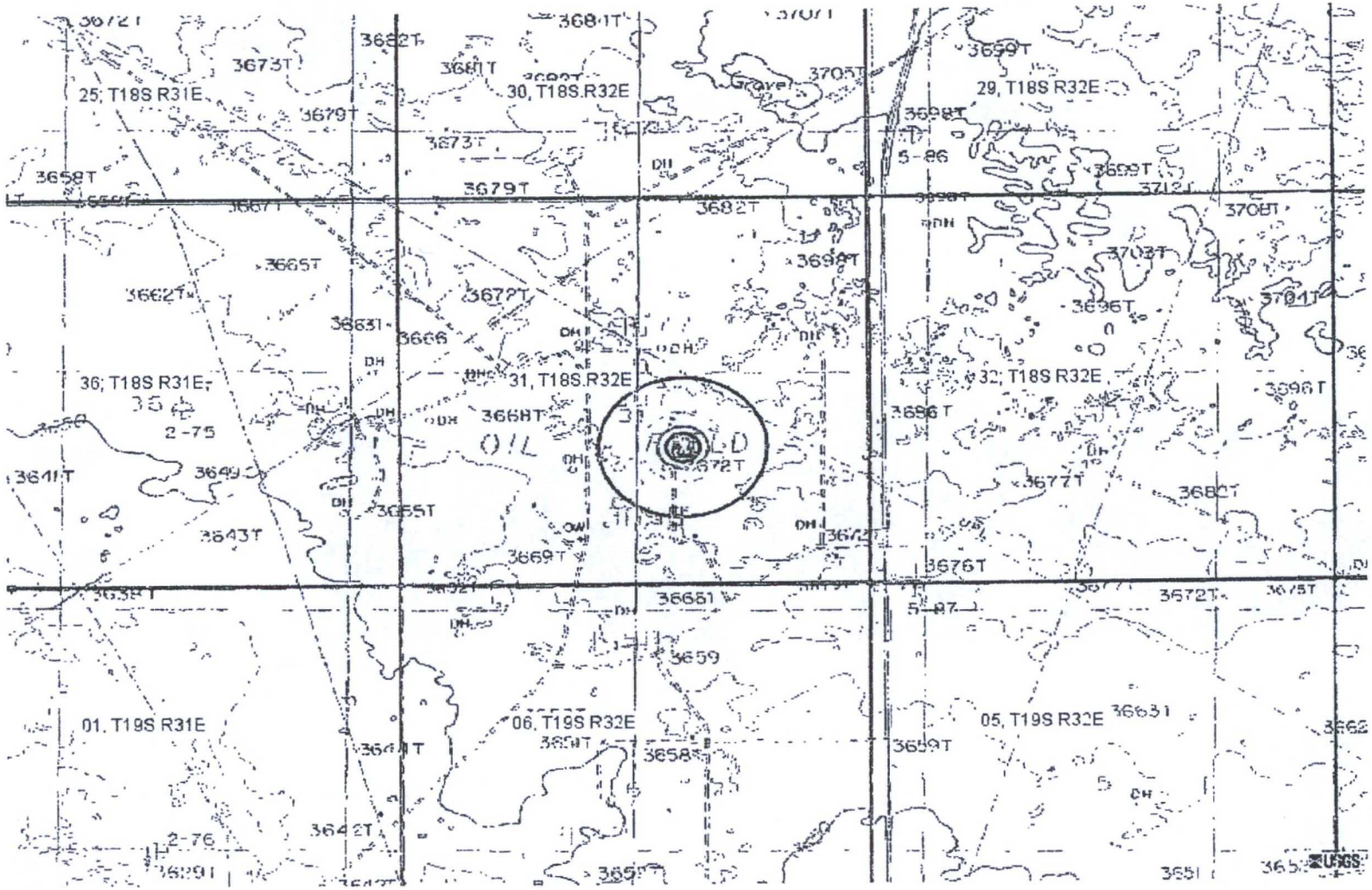
With the pit dry, we plan to cover the drill cuttings with 20 mil LLDPE plastic and then push the previously located topsoil back over the area to cover. Finally, the area will be reseeded with a mixture of seed required by the Bureau of Land Management with their APD approval.



0 1000 2000ft

N W E S

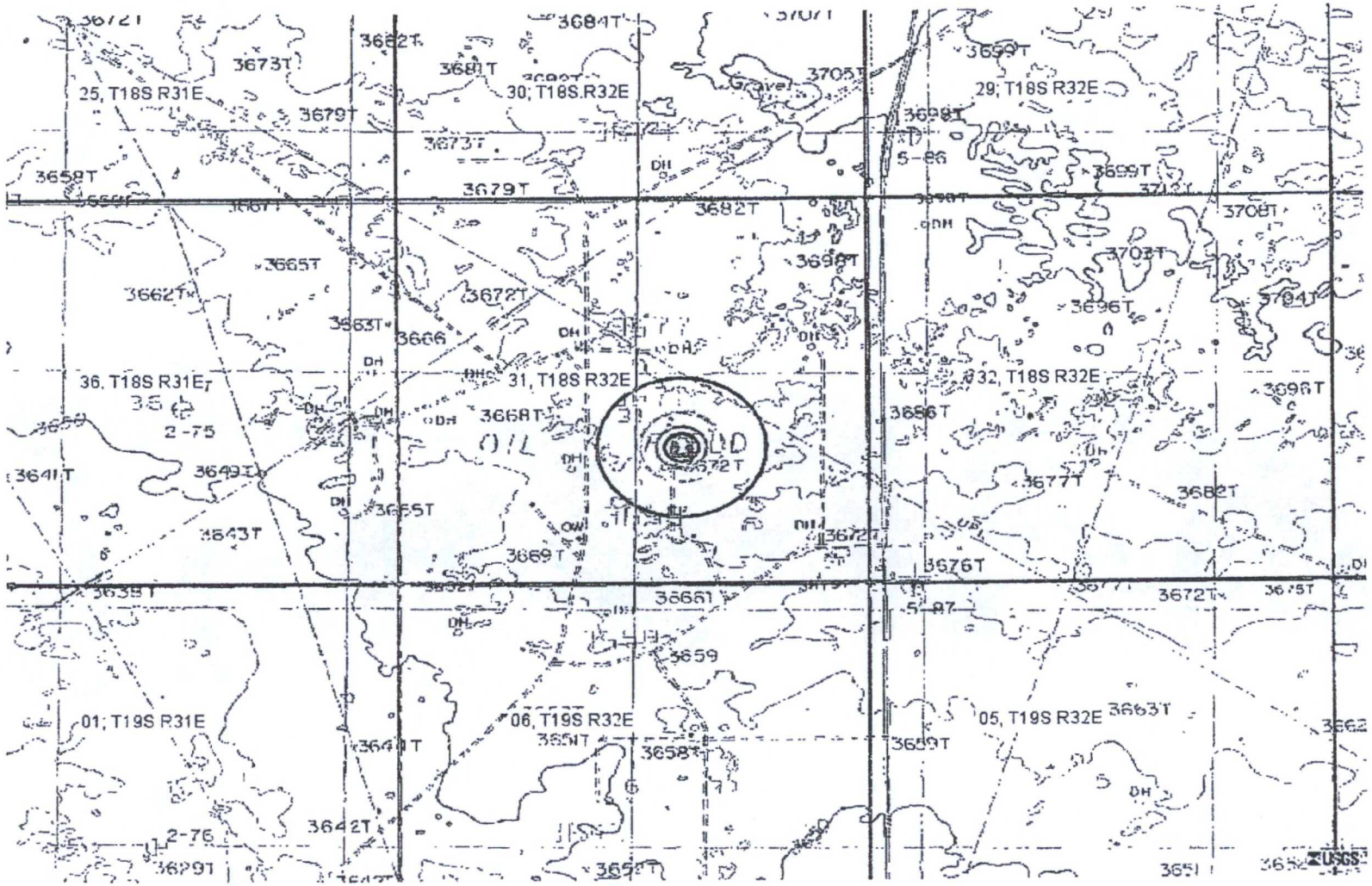
Petroleum Recovery Research Center	Topographic Map	Figure: 1
	Lynx Petroleum Cons., Inc./Lusk '31' Fed. No. 3	Sep 28, 2009



0 1000 2000ft

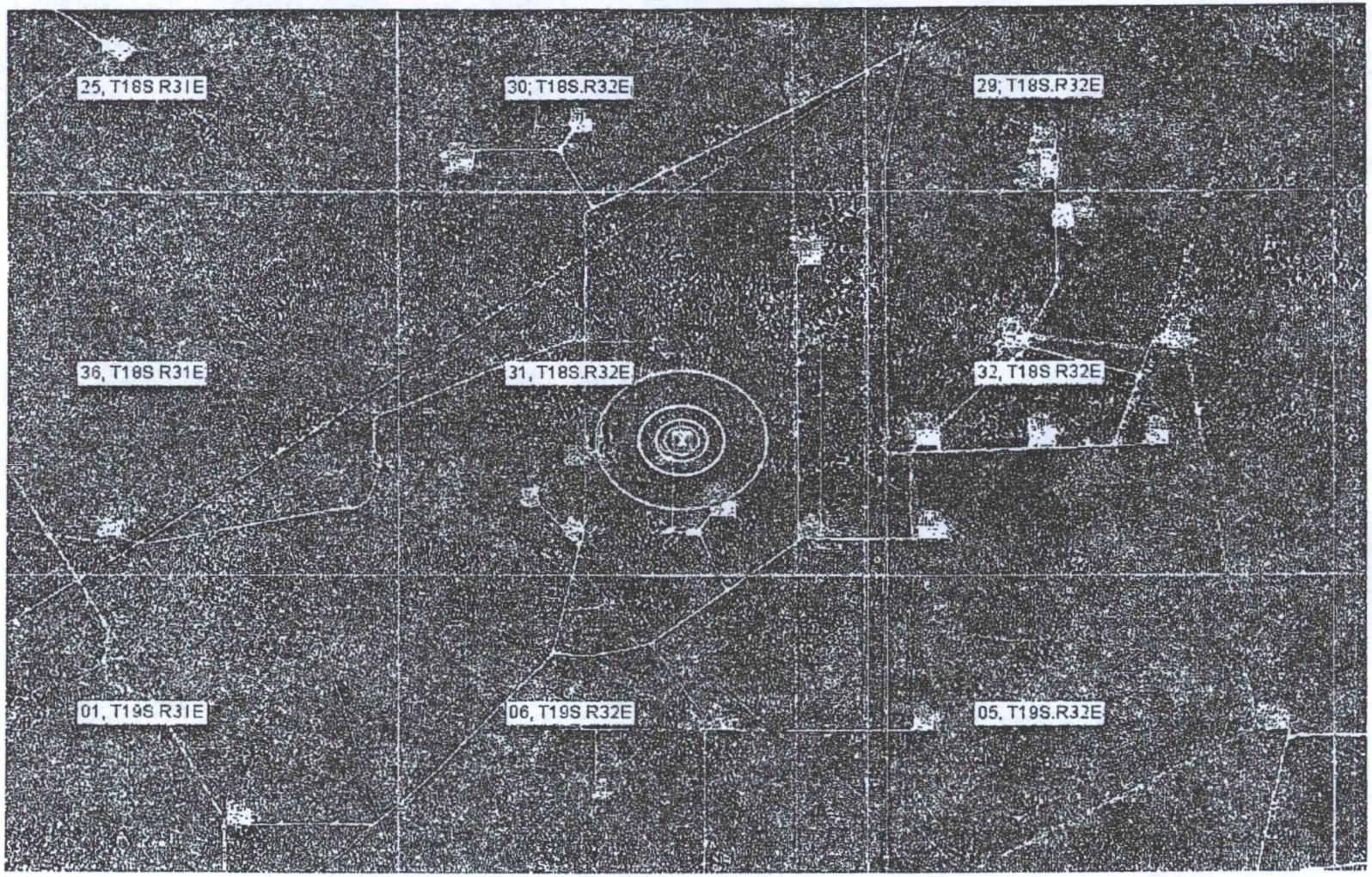
N W E S

Petroleum Recovery Research Center	No Ground Water Present	Figure: 2
	Lynx Petroleum Cons., Inc./Lusk '31' Fed. No. 3	Sep 28, 2009

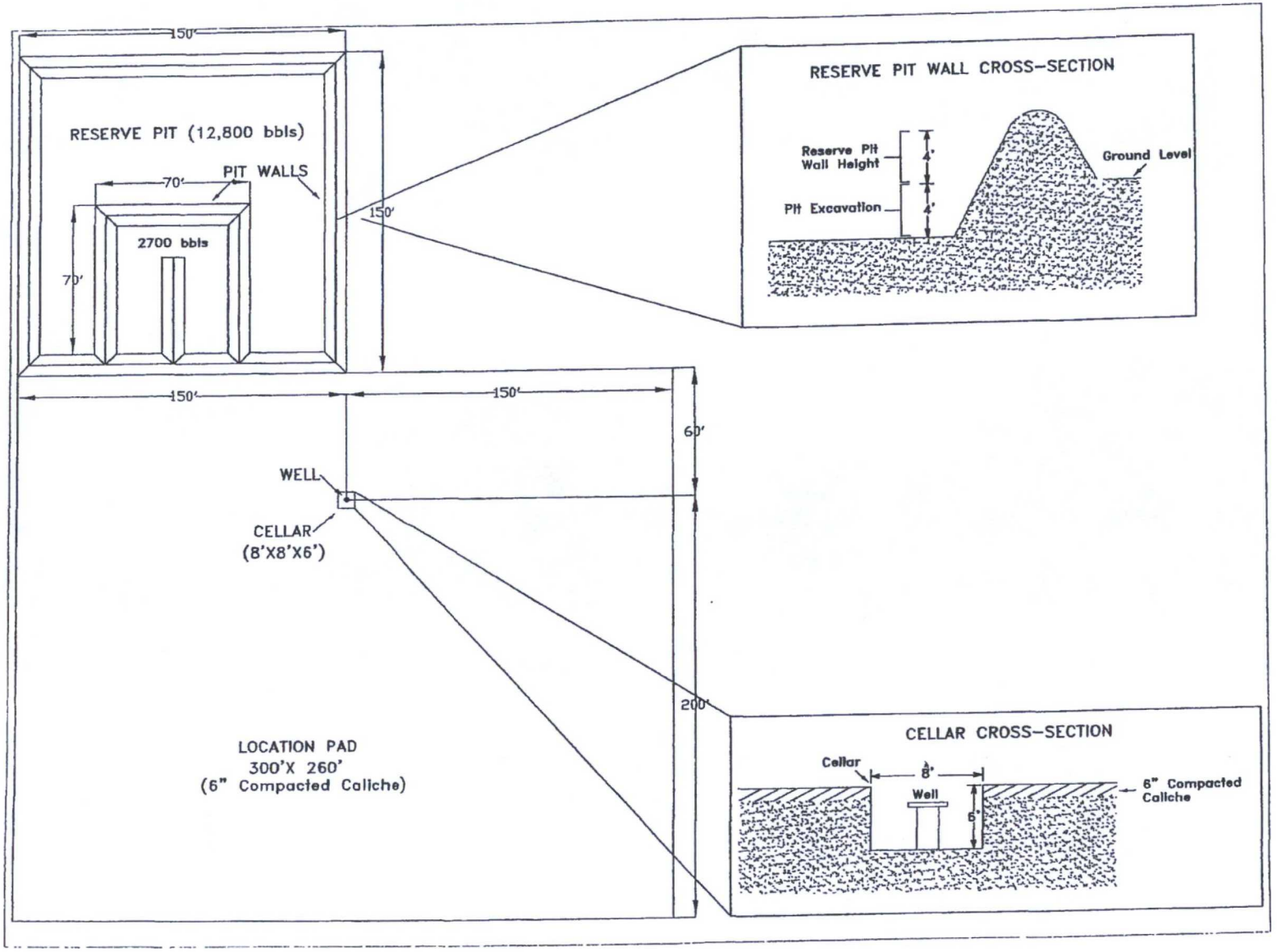


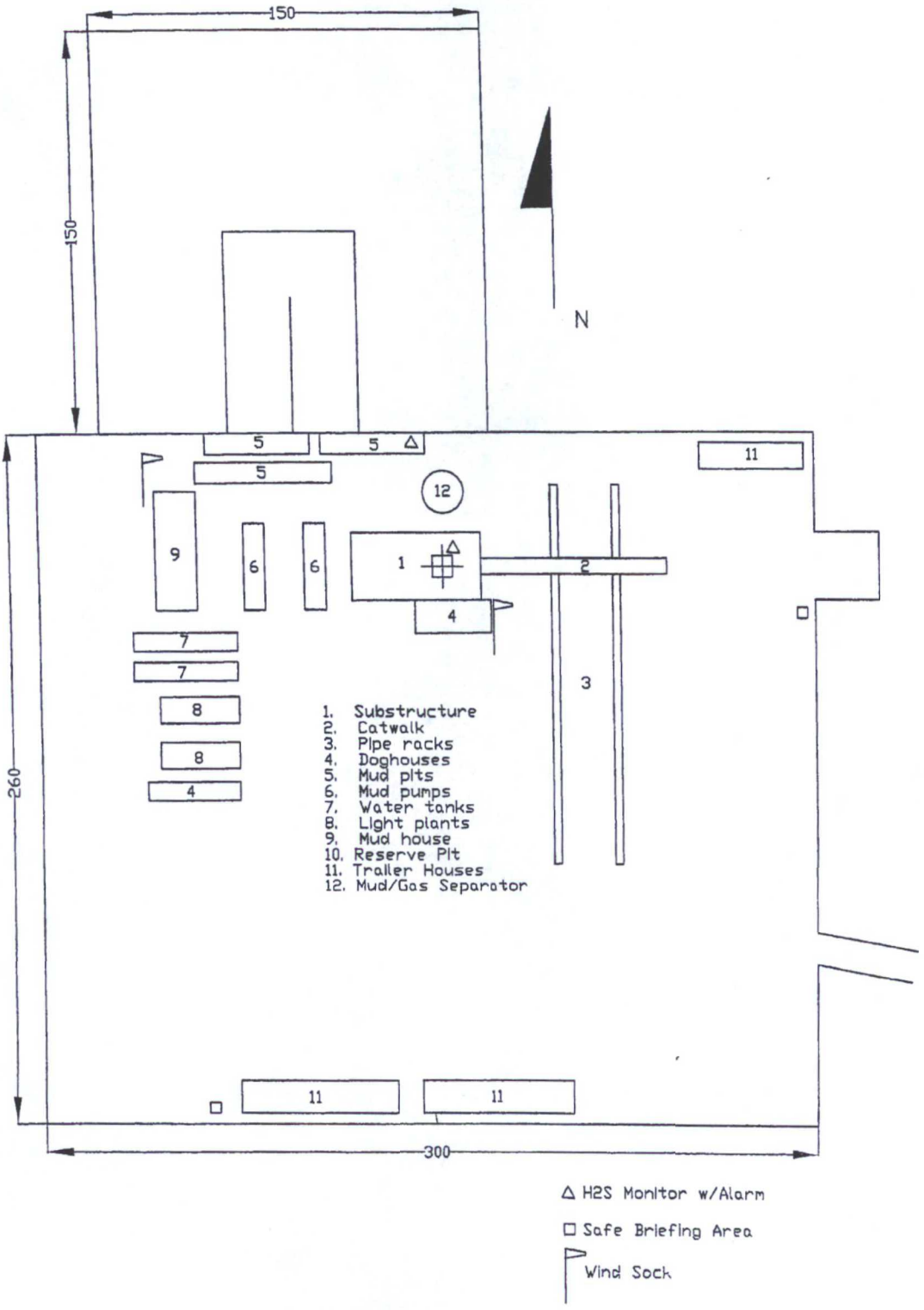
0 1000 2000ft

Petroleum Recovery Research Center	No Surface Water Present	Figure: 3
	Lynx Petroleum Cons., Inc./Lusk '31' Fed. No. 3	Sep 28, 2009



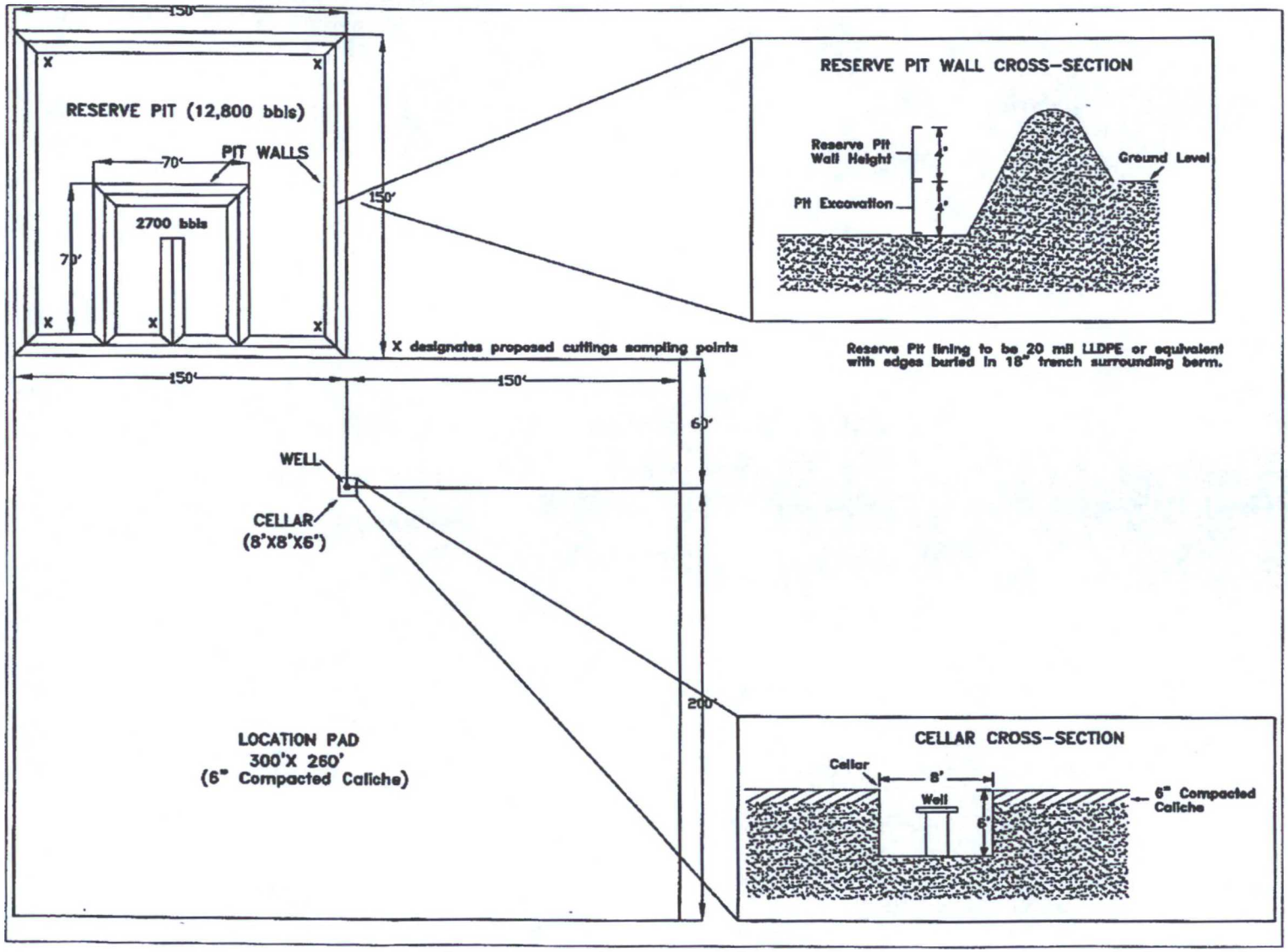
Petroleum Recovery Research Center	No Structures/Urban Areas Present	Figure: 4
	Lynx Petroleum Cons., Inc./Lusk '31' Fed. No. 3	Sep 28, 2009


150'
RESERVE PIT (12,800 bbls)
PIT WALLS
70'
2700 bbls
70'
150'
RESERVE PIT WALL CROSS-SECTION
Reserve Pit Wall Height
Pit Excavation
4'
Ground Level
150'
150'
60'
WELL
CELLAR
(8'X8'X6')
200'
LOCATION PAD
300'X 260'
(6" Compacted Caliche)
CELLAR CROSS-SECTION
Cellar
8'
Well
6'
6" Compacted Caliche



Scale: None	Lusk '31' Federal No. 3	Loc: 1880'FSL & 2080'FEL
	Rig Layout	Sec.31, T-18S, R-32E

PROPOSED SAMPLING LOCATIONS FOR 5-PT COMPOSITE SAMPLING



SAMPLE OF ANALYSES
TO BE PERFORMED ON
5-PT COMPOSITE

CARDINAL LABORATORIES
PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
CAPITAN CHEMICAL, LLC
ATTN: LYNX PETROLEUM - LARRY SCOTT
P.O. BOX 1200
HOBBS, NM 88241
FAX TO: (575) 392-3889

Receiving Date: 12/17/08
Reporting Date: 12/19/08
Project Number: LUSK 33-2
Project Name: PIT CLOSURE
Project Location: LUSK FIELD

Sampling Date: NOT GIVEN
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: AB/HM

LAB NUMBER	SAMPLE ID	GRO (C_6-C_{10}) (mg/kg)	DRO (>C_{10}-C_{28}) (mg/kg)	418.1 TOTAL TPH (mg/kg)	Cl* (mg/kg)
ANALYSIS DATE		12/18/08	12/18/08	12/19/08	12/17/08
H16542-1	SW	108	240	2,780	34,000
H16542-2	SE	35.3	310	5,880	66,400
H16542-3	CENTER	41.2	330	7,530	43,200
H16542-4	NE	74.8	418	2,850	18,000
H16542-5	NW	12.0	137	1,420	20,000
Quality Control		599	514	323	500
True Value QC		500	500	300	500
% Recovery		120	103	108	100
Relative Percent Difference		8.1	4.7	0.3	2.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; EPA 418.1; Cl-: Std. Methods 4500-Cl-B
*Analyses performed on 1:4 w:v aqueous extracts.

Chemist

12/19/08
Date

H16452 TPH2CL CC

CARDINAL LABORATORIES

PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
CAPITAN CHEMICAL, LLC
ATTN: LYNX PETROLEUM - LARRY SCOTT
P.O. BOX 1200
HOBBS, NM 88241
FAX TO: (575) 392-3689

Receiving Date: 12/17/08
Reporting Date: 12/19/08
Project Number: LUSK 33-2
Project Name: PIT CLOSURE
Project Location: LUSK FIELD

Sampling Date: NOT GIVEN
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: ZL

LAB NUMBER	SAMPLE ID	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL BENZENE (mg/kg)	TOTAL XYLENES (mg/kg)
ANALYSIS DATE		12/19/08	12/19/08	12/19/08	12/19/08
H16542-1	SW	0.458	4.41	4.48	7.53
H16542-2	SE	0.730	1.99	1.40	2.59
H16542-3	CENTER	0.719	2.49	2.25	3.84
H16542-4	NE	0.304	0.711	1.64	3.20
H16542-5	NW	0.229	0.926	1.12	2.01
Quality Control		0.043	0.044	0.046	0.137
True Value QC		0.050	0.050	0.050	0.150
% Recovery		86.0	88.0	92.0	91.3
Relative Percent Difference		1.2	1.4	6.9	3.6

METHOD: EPA SW-846 8021B

TEXAS NELAP CERTIFICATION T104704398-08-TX FOR BENZENE, TOLUENE, ETHYL BENZENE, AND TOTAL XYLENES.

Chemist

12/19/08
Date

CARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240
(575) 393-2326 Fax (575) 393-2476

Page____ of____

Company Name:	Capitan Chemical, LLC	**BILL TO**	
Project Manager:	Lynx Petroleum - Larry Scott	P.O. #:	
Address:	P.O. Box 1200	Company:	
City:	Hobbs State: NM Zip: 88240	Attn:	
Phone #:	392 3230 Fax #: ~~247~~ 392-3689	Address:	
Project #:	Lusk 33-7 Project Owner: Lynx Petroleum	City:	
Project Name:	Pit Closure	State: Zip:	
Project Location:	Lusk field	Phone #:	
Sampler Name:	Joe Hughes	Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV: ACID/BASE	ICE / COOL	OTHER	SAMPLING: DATE	TIME	TPH 8015	TPH 418	Cl-	BTEX
H16542-1	SW		1			X					X				X	X	X	X
-2	SE		1			X					X				X	X	X	X
-3	E center		1			X					X				X	X	X	X
-4	NE		1			X					X				X	X	X	X
-5	NW		1			X					X				X	X	X	X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims, including those for negligence and any other cause whatsoever, shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Sampler Relinquished:	Date: 12-17-08	Received By:	
Joe Hughes	Time: 12:15	Mistie LeBret	
Relinquished By:	Date:	Received By:	
	Time:		
Delivered By: (Circle One)	Temp.	Sample Condition: Cool Yes / No; Intact Yes / No	CHECKED BY: (Initials)
Sampler - UPS - Bus - Other:		☑ ☐ ☑ ☐	MCBB

Phone Result: ☐ No Add'l Phone #:
Fax Result: ☐ No Add'l Fax #:
REMARKS:

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476.

6. SOURCE OF CONSTRUCTION MATERIAL :

   A. Caliche will be hauled from the nearest approved pit.

7. METHODS OF HANDLING WASTE DISPOSAL :

   A. Drill cuttings will be disposed of in the drill pit.

   B. Drilling fluids will be recovered from the drilling pits upon conclusion of drilling/completion operations.

   C. Water produced during testing well be disposed of in the drill pits. Oil produced during testing will be stored in the test tanks until sold.

   D. Current laws and regulations pertaining to the disposal of human waste will be complied with.

   E. Trash, waste paper and garbage will be contained in a fenced trash trailer and disposed of in an approved landfill.

8. ANCILLARY FACILITIES :

   A. None required.

9. WELLSITE LAYOUT :

   A. The attached rig layout plat indicates the relative location and dimensions of the well pad, mud pits, reserve pit and major rig equipment.

   B. The reserve pit will be lined with plastic to prevent loss of water and contain the drilling mud.

10. PLANS FOR RESTORATION OF THE SURFACE :

   A. After completion of drilling and/or completion operations all equipment and other material not needed for producing operations will be removed. Pits will be filled and the location cleaned of all trash and junk to leave the wellsite in as aesthetically pleasing condition as possible

   B. Any unguarded pits containing fluids will be fenced until they are backfilled.

C. If the well is non-productive, the disturbed area will be rehabilitated to Federal Agency requirements, and will be accomplished as expeditiously as possible.

11. OTHER INFORMATION :

A. Terrain : Low rolling hills.

B. Soil : Sandy.

C. Vegetation : Mesquite, creosote, and grasses.

D. Surface Use : Grazing.

E. Ponds and Streams : None within 1.0 mile.

F. Water Wells : None within 1.0 mile.

G. Residences and Buildings : None within 1.0 mile.

H. Arroyos, Canyons, Etc. : None within 1.0 mile.

I. Well Sign : A sign identifying and locating the well will be maintained at the wellsite.

J. Archeological, Historical and Other Cultural Sites : An archeological survey of the well pad has been ordered from Boone Archeological Services. They will furnish a report and recommendation to the B. L. M. in Carlsbad, NM.

K. Surface Ownership : The access road and wellsite are located on Public surface.

12. OPERATOR'S REPRESENTATIVE :

Larry R. Scott
P. O. Box 1708
Hobbs, NM 88241
Phone – (575) 392-6950 Fax – (575) 392-7886

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Hobbs Field Station at (575) 393-3612 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall stockpile the topsoil of the well pad. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

C. RESERVE PITS

The reserve pit shall be constructed and closed in accordance with the NMOCD rules.

The reserve pit shall be constructed 150' X 150' on the North side of the well pad.

The reserve pit shall be constructed, so that upon completion of drilling operations, the dried pit contents shall be buried a minimum depth of three feet below ground level. Should the pit content level not meet the three foot minimum depth requirement, the excess contents shall be removed until the required minimum depth of three feet below ground level has been met. The operator shall properly dispose of the excess contents at an authorized disposal site.

The reserve pit shall be constructed and maintained so that runoff water from outside the location is not allowed to enter the pit. The berms surrounding the entire perimeter of the pit shall extend a minimum of two (2) feet above ground level. At no time will standing fluids in the pit be allowed to rise above ground level.

The reserve pit shall be fenced on three (3) sides during drilling operations. The fourth side shall be fenced immediately upon rig release.

D. FEDERAL MINERAL MATERIALS PIT

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. Call the
Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

Surfacing

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color
Shale Green, Munsell Soil Color Chart # 5Y 4/2

IX. INTERIM RECLAMATION & RESERVE PIT CLOSURE

A. INTERIM RECLAMATION

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting interim reclamation.

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

At the time reserve pits are to be reclaimed, operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

B. RESERVE PIT CLOSURE

The reserve pit, when dried and closed, shall be recontoured, all trash removed, and reseeded as follows:

Seed Mixture for LPC Sand/Shinnery Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either

certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A
**Four-winged Saltbush	5lbs/A

* This can be used around well pads and other areas where caliche cannot be removed.

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

Approved APD- Proof of Surface Owner Notification

OCD-HOBBS

RECEIVED

DEC 09 2009

HOBBSOCD

ATS-10-53

Form 3160-3
(August 2007)

FORM APPROVED
OMB No 1004-0137
Expires July 31, 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No.
NM 23006

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

7 If Unit or CA Agreement, Name and No.

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
Lusk '31' Federal No. 3 <37315>

2. Name of Operator Lynx Petroleum Consultants, Inc. <13645>

9. API Well No.
30-025-39593

3a. Address P.O. Box 1708
Hobbs, NM 88241

3b. Phone No. *(include area code)*
575-392-6950

10 Field and Pool, or Exploratory
Lusk North Bone Spring/Wolfcamp Lusk North

4. Location of Well *(Report location clearly and in accordance with any State requirements *)*
At surface 1880' FSL & 2080' FEL Unit J
At proposed prod. zone 1880' FSL & 2080' FEL

11. Sec., T. R. M. or Blk. and Survey or Area
Sec.31, T-18S, R-32E

14. Distance in miles and direction from nearest town or post office*
11 miles SSW of Maljamar, NM

12 County or Parish
Lea

13. State
NM

15 Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16 No. of acres in lease	17 Spacing Unit dedicated to this well
480'	321.27	40 acres
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft	**19. Proposed Depth**	**20 BLM/BIA Bond No. on file**
325'	11,200'	NM-1694 (BO2099)
21 Elevations (Show whether DF, KDB, RT, GL, etc.)	**22. Approximate date work will start***	**23. Estimated duration**
3676' GL	12/01/2009	26 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office)
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature	Name *(Printed/Typed)*	Date
Larry R. Scott	Larry R. Scott	10/01/2009

Title

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
/s/ Don Peterson		DEC 04 2009
Title	**Office**	
FIELD MANAGER	CARLSBAD FIELD OFFICE	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

Capitan Controlled Water Basin

KZ

SEE ATTACHED FOR CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

RECEIVED
DEC 09 2009
HOBBSOCD

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease – 4 Copies
Fee Lease – 3 Copies

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-025-39593	41450 / 41609	Lusk North Bone Spring/Wolfcamp (Lusk / North)

Property Code	Property Name	Well Number
37315	LUSK "31" FEDERAL	3

OGRID No.	Operator Name	Elevation
013645	LYNX PETROLEUM CONSULTANTS, INC.	3676'

Surface Location

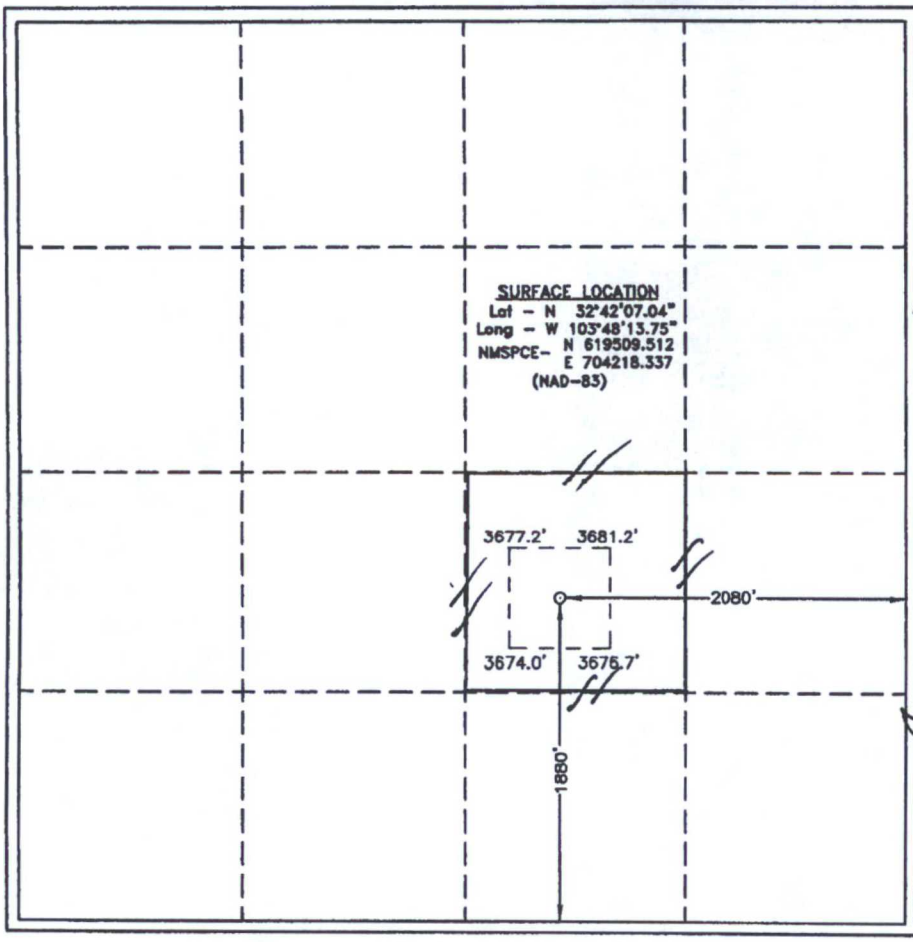
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	31	18 S	32 E		1880	SOUTH	2080	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40 / 40			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Larry R. Scott 10-01-09
Signature Date

Larry R. Scott
Printed Name

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my belief.

SEPTEMBER 10, 2009
Date Surveyed

NEW MEXICO
Signature & Seal of Professional Surveyor
7977

Certificate No. Gary L. Jones 7977

BASIN SURVEYS

Form 3160-5
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD-HOBBS
RECEIVED
DEC 09 2009
HOBBSOCD

FORM APPROVED
Budget Bureau No 1004-0137
Expires: March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE – Other instructions on reverse side.

5. Lease Serial No
NM 23006

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement, Name and/or No

1. Type of Well
[X] Oil Well [ ] Gas Well [ ] Other

8. Well Name and No
Lusk '31' Federal No. 3

2 Name of Operator
Lynx Petroleum Consultants, Inc.

9. API Well No

3a. Address
P.O. Box 1708, Hobbs, NM 88241

3b. Phone No (include area code)
575-392-6950

10. Field and Pool, or Exploratory Area
Lusk North Bone Spring/Wolfcamp

4 Location of Well (Footage, Sec., T ,R.,M., or Survey Description)
1880' FSL & 2080' FEL, Section 31, T-18S, R-32E

11. County or Parish, State
Lea, New Mexico

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
[X] Notice of Intent	[ ] Acidize	[ ] Deepen	[ ] Production (Start/Resume)	[ ] Water Shut-Off
[ ] Subsequent Report	[ ] Alter Casing	[ ] Fracture Treat	[ ] Reclamation	[ ] Well Integrity
[ ] Final Abandonment Notice	[ ] Casing Repair	[ ] New Construction	[ ] Recomplete	[X] Other Refurbish Roadbeds
	[ ] Change Plans	[ ] Plug and Abandon	[ ] Temporarily Abandon	
	[ ] Convert to Injection	[ ] Plug Back	[ ] Water Disposal	

13 Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones Attach the Bond under which the work will be performed or provide the Bond No on file with BLM/BIA Required subsequent reports shall be filed within 30 days following completion of the involved operations If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed Final Abandonment Notices shall be Filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection)

Propose to refurbish roadbeds into the plugged and abandoned Federal CST Nos. 1 and 2 to the south side of the well pad. Total length will be 1295'. See attached map.

14 I hereby certify that the foregoing is true and correct
Name (*Printed/Typed*)
Larry R. Scott

Title
PRESIDENT

Signature Larry R. Scott

Date 10-01-09

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by /s/ Don Peterson

Title

Date DEC 04 2009

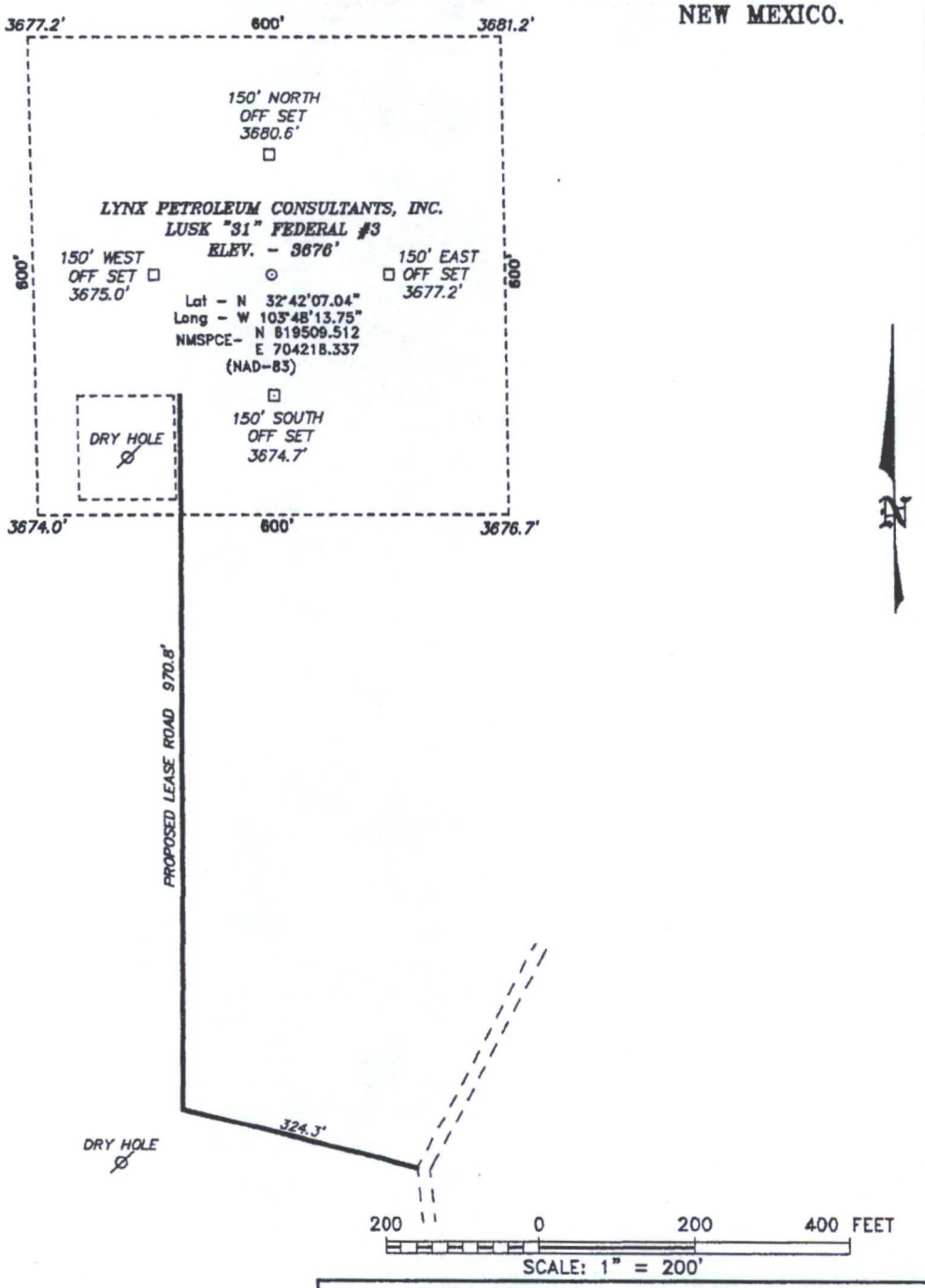
Conditions of approval, if any, are attached Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon

Office CARLSBAD FIELD OFFICE

Title 18 U S C Section 1001 and Title 43 U S C Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States and false, Fictitious or fraudulent statements or representations as to any matter within its jurisdiction

SECTION 31, TOWNSHIP 18 SOUTH, RANGE 32 EAST, N.M.P.M.,

LEA COUNTY, NEW MEXICO.



Directions to Location:

FROM THE JUNCTION OF LUSK PLANT ROAD AND MALJAMAR ROAD, GO NORTH 3.4 MILES ON MALJAMAR TO LEASE ROAD, ON LEASE ROAD GO WEST 0.1 MILES THENCE WINDING SOUTHWEST 0.2 MILES TO LEASE ROAD, ON LEASE ROAD GO NORTHWEST 0.1 MILES TO PROPOSED LEASE ROAD.

LYNX PETROLEUM CONSULTANTS, INC.

REF: LUSK "31" FEDERAL #3 / WELL PAD TOPO

THE LUSK "31" FEDERAL #3 LOCATED 1880'

FROM THE SOUTH LINE AND 2080' FROM THE EAST LINE OF

SECTION 31, TOWNSHIP 18 SOUTH, RANGE 32 EAST,

N.M.P.M., LEA COUNTY, NEW MEXICO.

BASIN SURVEYS P.O. BOX 1786 – HOBBS, NEW MEXICO

W.O. Number: 21748	Drawn By: J. SMALL		
Date: 09-18-2009	Disk: JMS 21748	Survey Date: 09-17-2009	Sheet 1 of 1 Sheets

STATEMENT ACCEPTING RESPONSIBILITY FOR OPERATIONS

Application for Permit to Drill
Lusk '31' Federal No. 3
1880' FSL & 2080'FEL
Section 31, T-18S, R-32E
Lea County, New Mexico

The undersigned accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof, as described below:

Lease No. : NM 23006

Location Legal Description: NW/4 SE/4 Section 31, T-18S, R-32E
Lea County, New Mexico

Proration Unit: NW/4 SE/4 Section 31, T-18S, R-32E
Lea County, New Mexico

Formation : Surface to base of Wolfcamp

Bond Coverage : $25,000 Statewide

BLM Bond File No. : NM-1694 (BO2099)

Operator : LYNX PETROLEUM CONSULTANTS, INC.

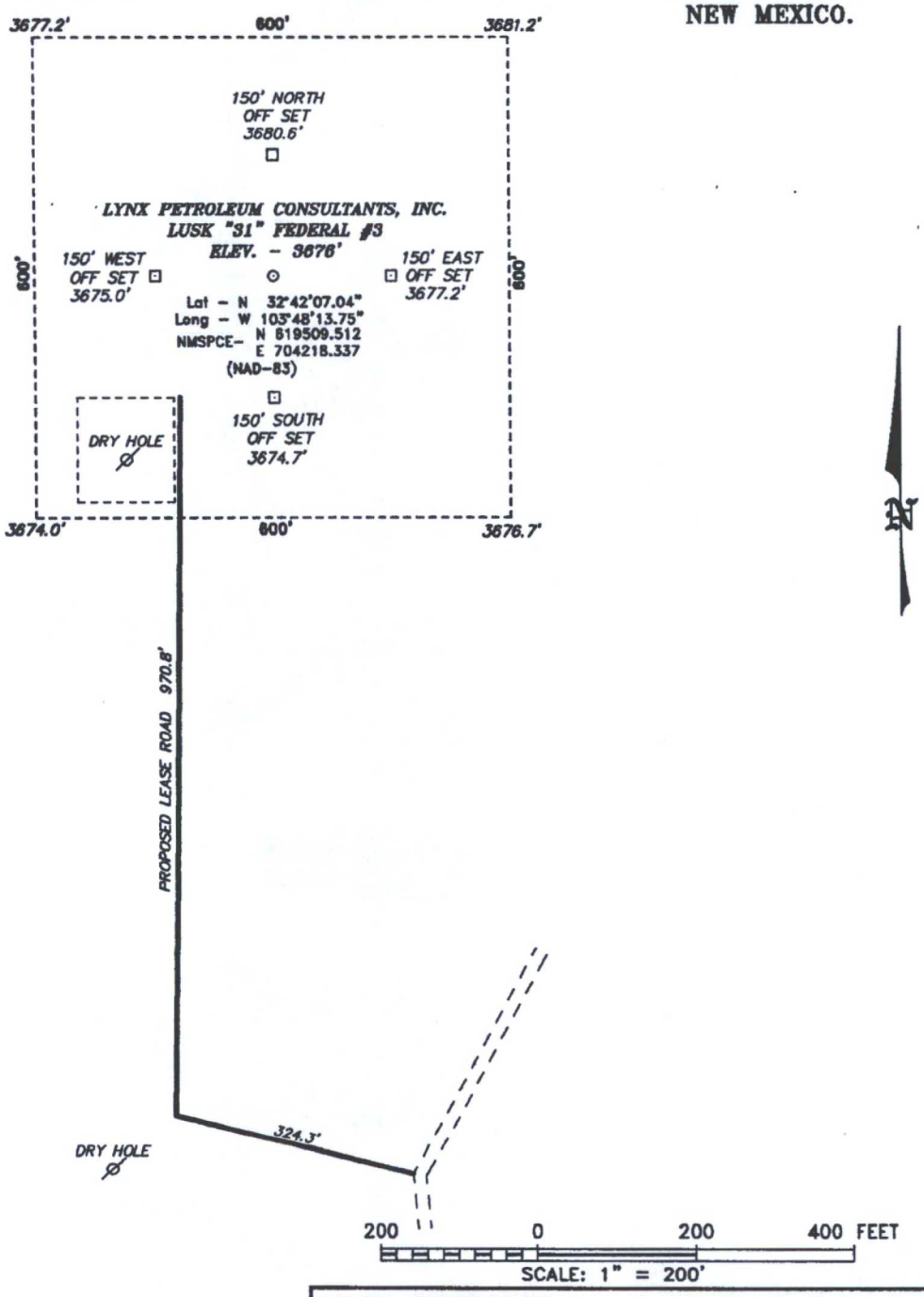
Authorized Signature : Harry L Scott

Title : President

Date : 10/1/2009

SECTION 31, TOWNSHIP 18 SOUTH, RANGE 32 EAST, N.M.P.M.,

LEA COUNTY, NEW MEXICO.



Directions to Location:

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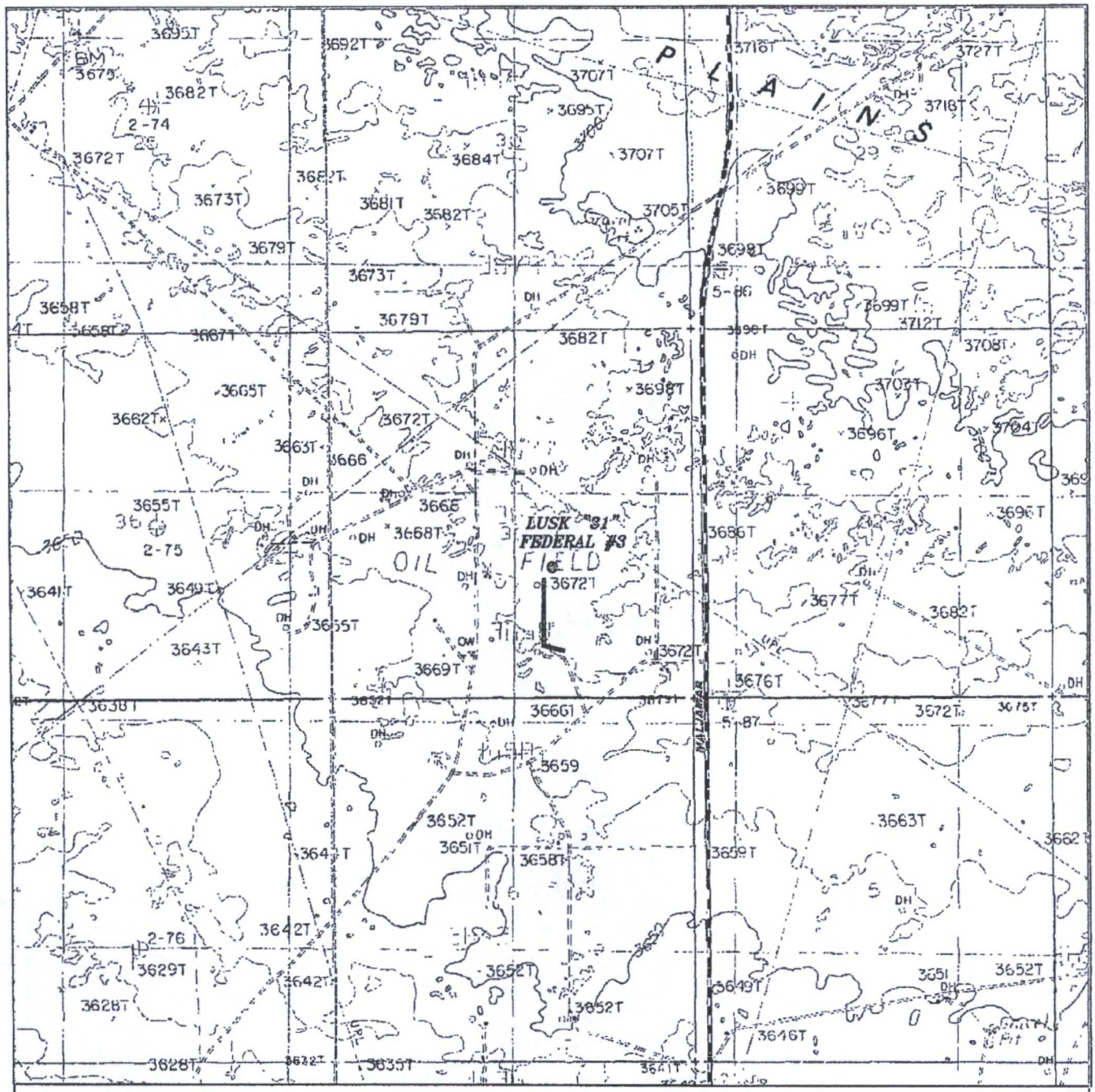
LYNX PETROLEUM CONSULTANTS, INC.

REF: LUSK "31" FEDERAL #3 / WELL PAD TOPO

THE LUSK "31" FEDERAL #3 LOCATED 1880' FROM THE SOUTH LINE AND 2080' FROM THE EAST LINE OF SECTION 31, TOWNSHIP 18 SOUTH, RANGE 32 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.

BASIN SURVEYS P.O. BOX 1786 – HOBBS, NEW MEXICO

W.O. Number: 21748	Drawn By: J. SMALL		
Date: 09-18-2009	Disk: JMS 21748	Survey Date: 09-17-2009	Sheet 1 of 1 Sheets



LUSK "31" FEDERAL #3
Located 1880' FSL and 2080' FEL
Section 31, Township 18 South, Range 32 East,
N.M.P.M., Lea County, New Mexico.

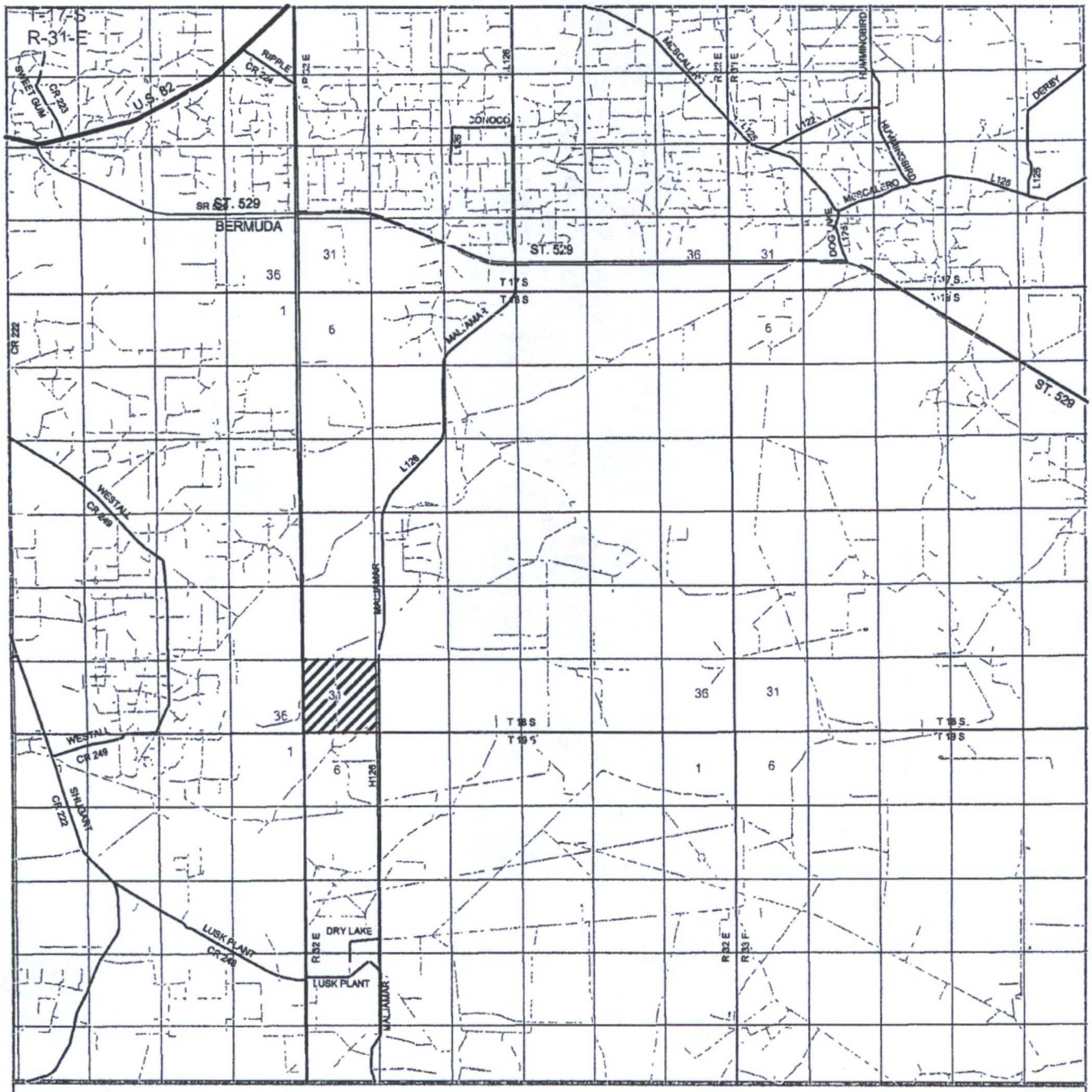
Basin Surveys
focused on excellence in the oilfield

P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

W.O. Number: JMS 21748
Survey Date: 09-17-2009
Scale: 1" = 2000'
Date: 09-18-2009

N

LYNX PETROLEUM CONSULTANTS, INC.



LUSK "31" FEDERAL #3
Located 1880' FSL and 2080' FEL
Section 31, Township 18 South, Range 32 East,
N.M.P.M., Lea County, New Mexico.

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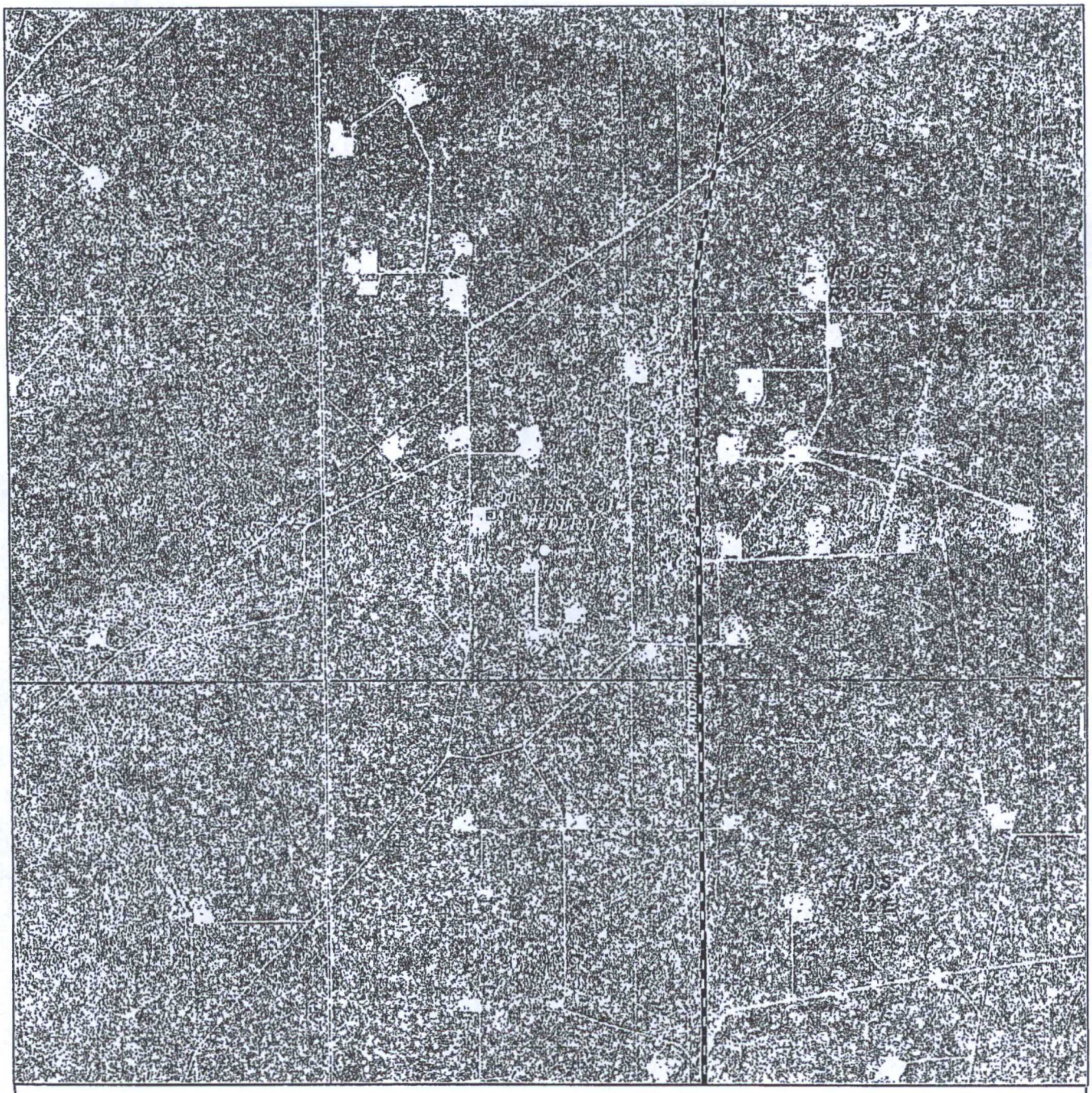
(575) 392-2206 - Fax
basinsurveys.com

W.O. Number.	JMS 21748
Survey Date:	09-17-2009
Scale:	1" = 2 Miles
Date:	09-18-2009

N

LYNX PETROLEUM CONSULTANTS, INC.



LUSK "31" FEDERAL #3
Located 1880' FSL and 2080' FEL
Section 31, Township 18 South, Range 32 East,
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basinsurveys.com

W.O. Number: JMS 21748

Scale: 1" = 2000'

YELLOW TINT - USA LAND
BLUE TINT - STATE LAND
NATURAL COLOR - FEE LAND

N

LYNX PETROLEUM CONSULTANTS, INC.

DRILLING PROGRAM

Lynx Petroleum Consultants, Inc.
Lusk '31' Federal No. 3
1880' FSL & 2080' FWL
Section 31, T-18S, R-32E
Lea County, NM

The following items supplement Form 3160-3 in accordance with instructions contained in Onshore Oil and Gas Orders #1 and #2, and all other applicable federal and state regulations.

1. SURFACE FORMATION : Sandy Soil of Quaternary Age

2. ESTIMATED TOPS OF GEOLOGICAL MARKERS :

Top of Salt 1190'
Base " " 2470'

Rustler	-	1050'
Yates	-	2780'
Queen	-	3650'
Delaware	-	5025'
Bone Spring	-	6800'
Bone Spring 1st Sd	-	8100'
Bone Spring 3rd Sd	-	9750'
Wolfcamp	-	10,110'

3. ESTIMATED DEPTHS TO WATER, OIL OR GAS FORMATIONS :

Fresh Water	-	None in measurable quantity
Oil, Gas, & Water	-	Yates, Grayburg, Delaware, Bone Spring, Wolfcamp

* Productive horizons to be protected by 5 ½" casing and cement.

per operator

4. PROPOSED CASING PROGRAM :

Hole Size
17 1/2"
12 1/4" or 11"
7 7/8"

13 3/8"	0'	-	~~500'~~ 1100'	48.0#	H-40	ST&C
8 5/8"	0'	-	2750'	32.0#	J-55	ST&C
5 1/2"	0'	-	11,200'	17.0#	N-80	LT&C

See COA

Casing Safety Factors

	B.S.F.	C.S.F	J.S.F.	Y.S.F
13-3/8"	1.4	3.3	14.9	22.7
8-5/8"	2.2	2.0	4.7	6.4
5-1/2"	1.5	1.2	2.0	2.0

DRILLING PROGRAM
Lusk '31' Federal No. 3

5. PROPOSED CEMENT PROGRAM : ← See COA

20" Conductor	- Cemented with ready mix to surface.
See COA — 13 3/8" Surface	- 300 sxs Class "C" + 4% Gel + 2% $CaCl_2$ (507 ft^3) followed by 250 sxs Class "C" + 2% $CaCl_2$ (330 ft^3). T.O.C. @ surface. 1.69 ft^3/sx 1.32 ft^3/sx
8 5/8" Intermediate	- 800 sxs Class "C" Poz followed by 200 sxs Class "C" (1884 ft^3 total). T.O.C. @ surface.
5 1/2" Production	- First state 700 sxs Class "C". Second stage 500 sx. Class "H" Poz followed by 100 sxs Class "HC". TOC @ ~~2600'~~ 2550' See COA

1ST stage 1.6 cf/sx
2nd stage 2.12 cf/sx
per operator
DV Tool 6800'
RGH
11/12/09

See COA — 6. PRESSURE CONTROL EQUIPMENT : A blowout preventer stack for the intermediate hole will consist of at least an annular preventer rated to 2000 psi working pressure. The blowout preventer stack for the production hole will consist of at least a double-ram blowout preventer and an annular preventer rated to 5000 psi working pressure. A sketch of the B.O.P.'s and Choke Manifold are attached.

7. CIRCULATING MEDIUMS : Fresh water spud mud 0' – ~~500'~~ See COA. Brine water 500' – 2650'. Cut brine mud system 8.8 – 9.3 ppg with 29 viscosity will be used 2650' – 9800'.

8. AUXILIARY EQUIPMENT : Full opening Kelly cock valve to fit the drill string in use, will be kept on the rig floor at all times.

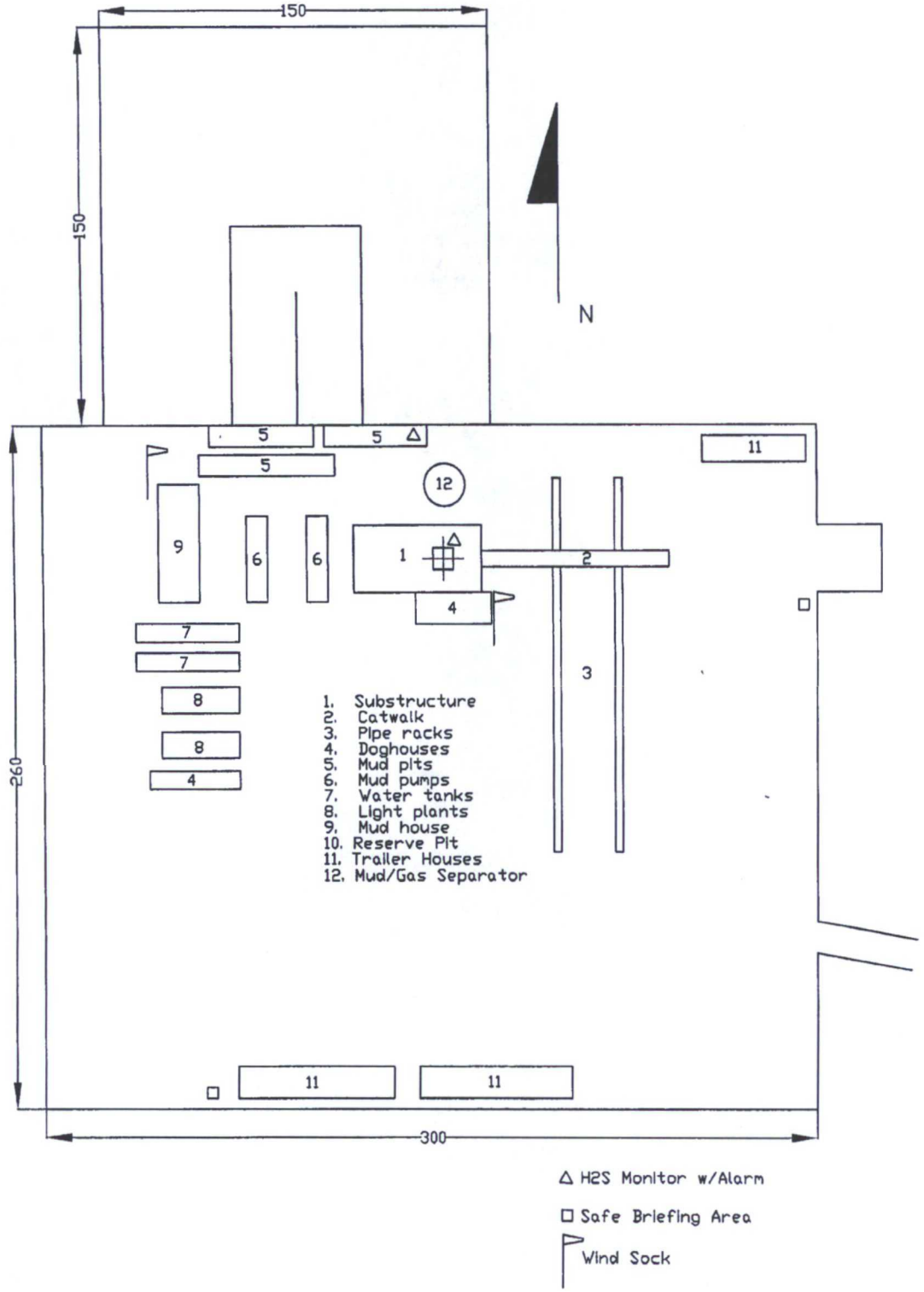
9. TESTING, LOGGING, AND CORING PROGRAM :

	Samples	- 2750' – TD
	D.S.T.'s	- No D.S.T.'s are planned
See COA —	Logging	- Gamma Ray – CNL – FDC – DLL
	Coring	- No coring is planned

10. ABNORMAL PRESSURES AND TEMPERATURES : None anticipated.

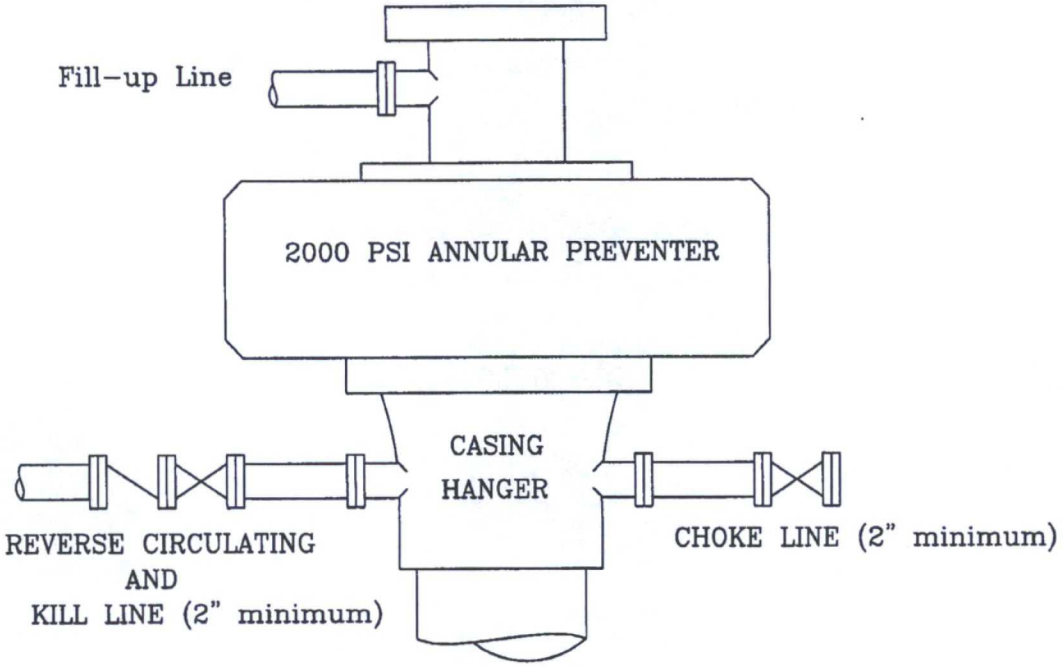
BHT - 143°F
BHP - 4851 psi
per operator

11. ANTICIPATED STARTING DATE : Drilling will commence about January 1, 2010. Drilling should be complete within 27 days. Completion operations (perforations and stimulation) will follow drilling operations.

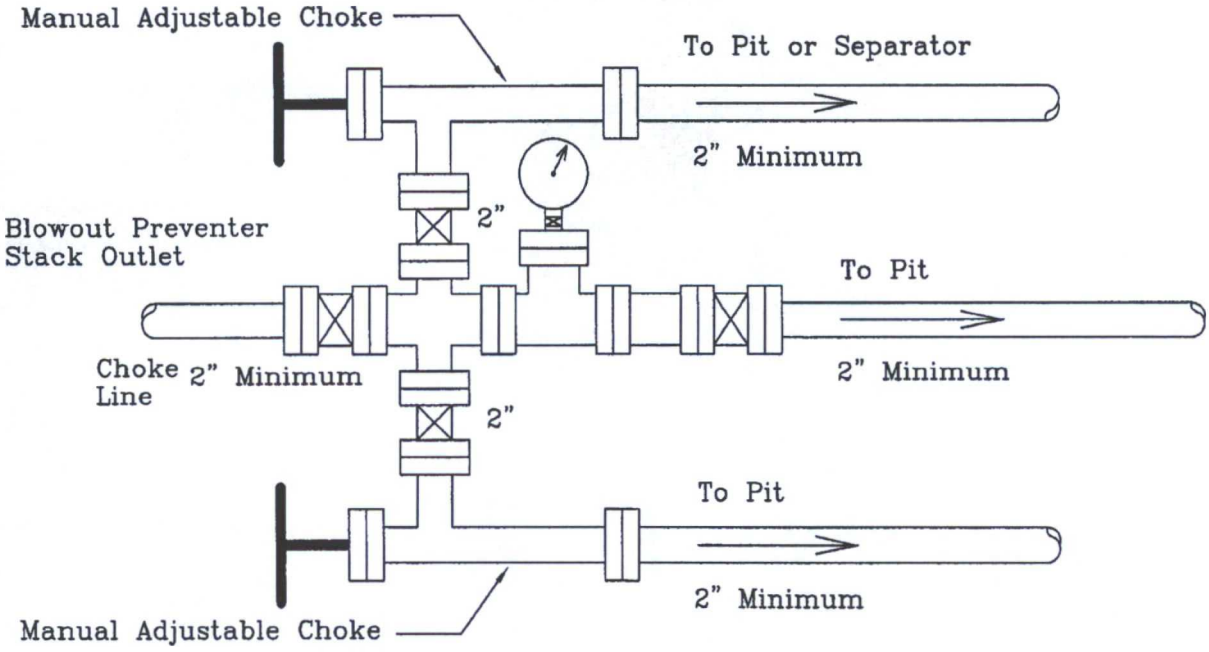


Scale: None	Lusk '31' Federal No. 3	Loc: 1880'FSL & 2080'FEL
Date: 9/29/09	Rig Layout	Sec.31, T-18S, R-32E
		Lea County, NM

INTERMEDIATE HOLE SECTION



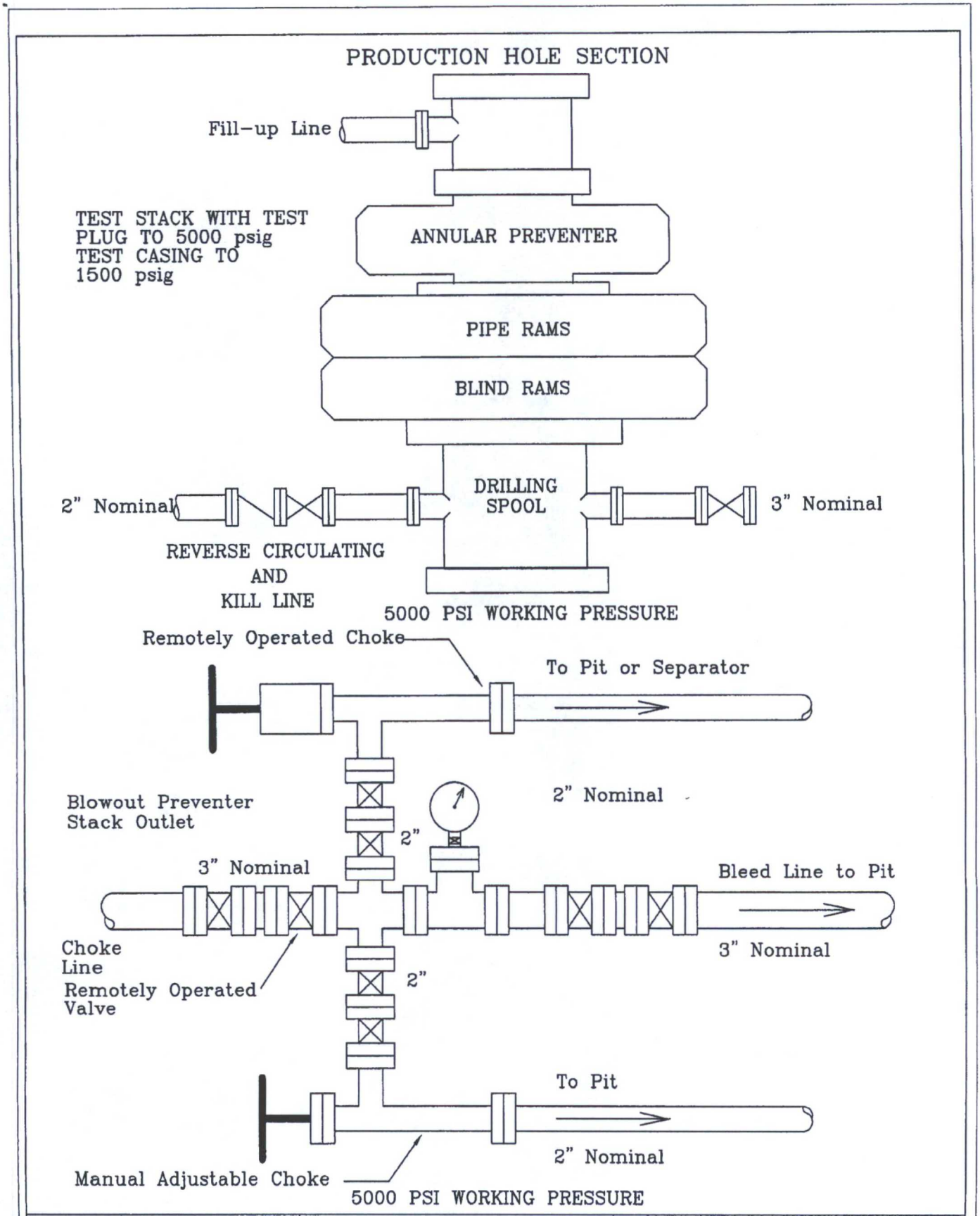
2000 PSI WORKING PRESSURE



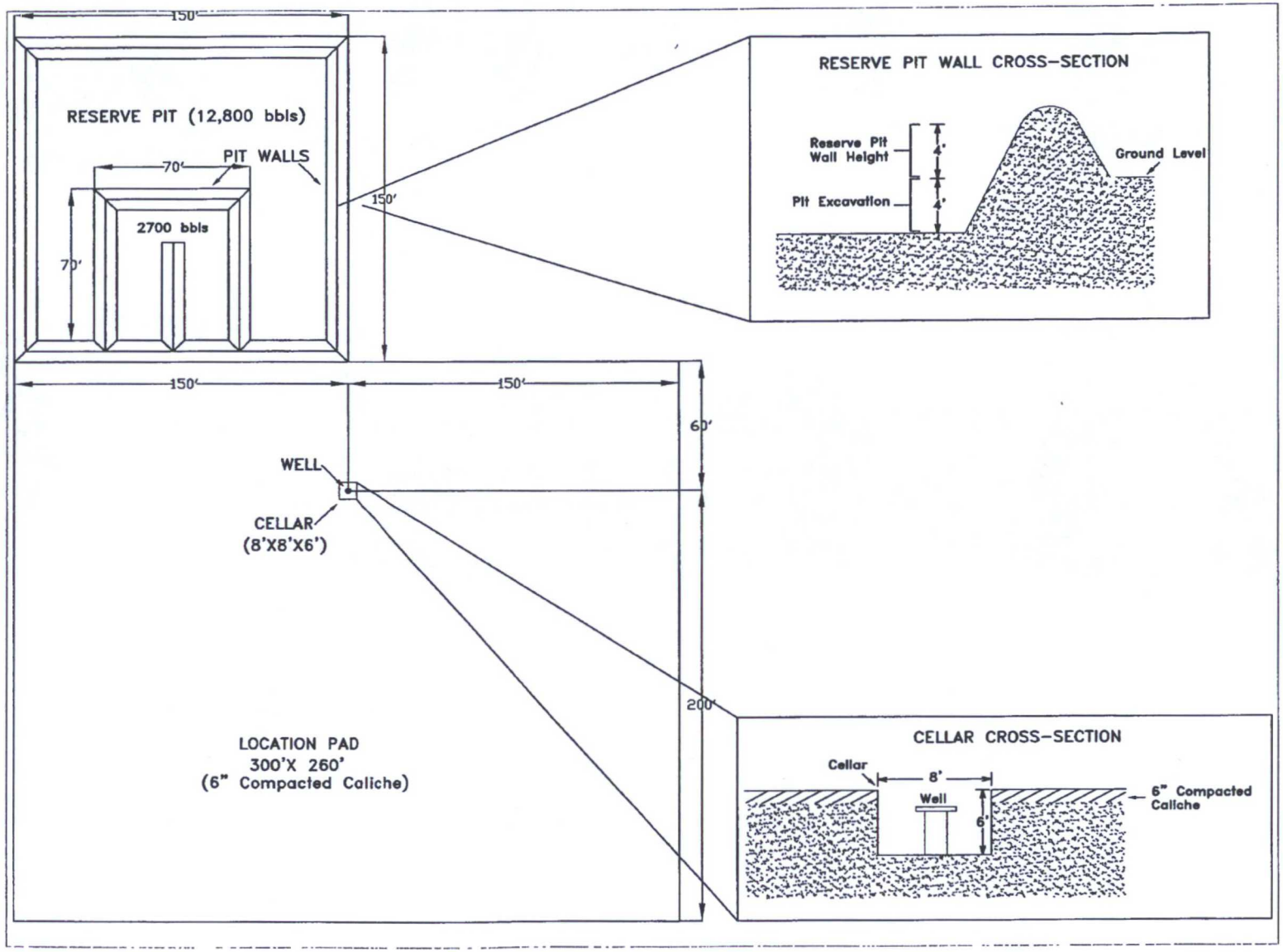
2000 PSI WORKING PRESSURE

TEST CASING AND ANNULAR PREVENTOR TO 600 psig (see COA)

Location: NW/4 SE/4 Sec. 31, T-18S, R-32E Lea County, NM	Lusk '31' Federal No. 3 BLOWOUT PREVENTER AND CHOKE MANIFOLD		9/28/09
		Scale: None	



Location: NW/4 SE/4 Sec. 31, T-18S, R-32E Lea County, NM	Lusk '31' Federal No. 3 BLOWOUT PREVENTER AND CHOKE MANIFOLD		9/28/09
		Scale: None	


150'
RESERVE PIT (12,800 bbls)
PIT WALLS
70'
2700 bbls
70'
150'
RESERVE PIT WALL CROSS-SECTION
Reserve Pit Wall Height
4'
Pit Excavation
4'
Ground Level
150'
150'
60'
WELL
CELLAR
(8'X8'X6')
200'
LOCATION PAD
300'X 260'
(6" Compacted Caliche)
CELLAR CROSS-SECTION
Cellar
8'
Well
6'
6" Compacted Caliche

LYNX PETROLEUM CONSULTANTS, INC.
HYDROGEN SULFIDE DRILLING OPERATIONS
LUSK '31' FEDERAL NO. 3

I. HYDROGEN SULFIDE TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H_2S).
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H_2S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H_2S on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H_2S Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H_2S zone (within 3 days or 500 feet) and weekly H_2S Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site.

II. H_2S SAFETY EQUIPMENT AND SYSTEMS

Note : All H_2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H_2S.

DRILLING OPERATIONS
Lusk '31' Federal No. 3

1. Well Control Equipment :

   A. Choke manifold with a minimum of one remote choke.

   B. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.

   C. Auxiliary equipment to include : annular preventer

2. Protective equipment for essential personnel :

   A. 30-minute air units located in the dog house and at briefing areas, as indicated on well site diagram.

3. H_2S detection and monitoring equipment :

   A. 2 – portable H_2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H_2S levels of 20 ppm are reached.

   B. 1 – portable SO_2 monitor positioned near flare line.

4. Visual warning systems :

   A. Wind direction indicators as shown on well site diagram.

   B. Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs well be used when appropriate. See example on page 3.

5. Mud program :

   A. The mud program has been designed to minimize the volume of H_2S circulated to the surface. Proper mud weight, safe drilling practices, and the use of H_2S scavengers will minimize hazards when penetrating H_2S bearing zones.

   B. A mud-gas separator will be utilized if needed.

6. Metallurgy :

A. All drill strings, casings, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H_2S service.

B. All elastomers used for packing and seals shall be H_2S trim.

7. Communication :

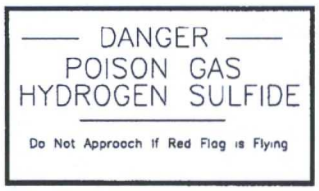
A. Communications in company vehicles are provided by cellular telephones.
Cell1: 575-390-9063 Cell2: 575-390-9065

B. Land line (telephone) communications at Hobbs office.
Phone: 575-392-6950

C: Emergency Numbers
911
Carlsbad Sheriff's Dept.: 575-887-1888
Carlsbad Hospital: 575-887-4100
Carlsbad Fire Dept.: 575-885-3125
Maljamar Fire Dept.: 575-676-4100
Hobbs Hospital: 575-492-5000
New Mexico State Police: 575-392-5588

8. Well testing :

A. Drill stem testing will be preformed with a minimum number of personnel in the immediate vicinity which are necessary to safely and adequately conduct the test. All drill stem testing operations conducted in an H_2S environment will use the closed chamber method of testing.



13. CERTIFICATION :

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route ; that I am familiar with the conditions which presently exist ; that the statements made in this plan are, to the best of my knowledge, true and correct ; that the work associated with the operations proposed herein will be performed by LYNX PETROLEUM CONSULTANTS, INC. and its sub-contractors in conformity with this plan and the terms and conditions under which it is approved.

10-1-2007
DATE

Larry R. Scott
LARRY R. SCOTT – PRESIDENT

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Lynx Petroleum Consultants
LEASE NO.:	NM23006
WELL NAME & NO.:	3 Lusk 31 Federal
SURFACE HOLE FOOTAGE:	1880' FS & 2080' FEL
BOTTOM HOLE FOOTAGE	Same
LOCATION:	Section 31, T. 18 S., R 32 E., NMPM
COUNTY:	Lea County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Hobbs Field Station at (575) 393-3612 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall stockpile the topsoil of the well pad. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

C. RESERVE PITS

The reserve pit shall be constructed and closed in accordance with the NMOCD rules.

The reserve pit shall be constructed 150' X 150' on the North side of the well pad.

The reserve pit shall be constructed, so that upon completion of drilling operations, the dried pit contents shall be buried a minimum depth of three feet below ground level. Should the pit content level not meet the three foot minimum depth requirement, the excess contents shall be removed until the required minimum depth of three feet below ground level has been met. The operator shall properly dispose of the excess contents at an authorized disposal site.

The reserve pit shall be constructed and maintained so that runoff water from outside the location is not allowed to enter the pit. The berms surrounding the entire perimeter of the pit shall extend a minimum of two (2) feet above ground level. At no time will standing fluids in the pit be allowed to rise above ground level.

The reserve pit shall be fenced on three (3) sides during drilling operations. The fourth side shall be fenced immediately upon rig release.

D. FEDERAL MINERAL MATERIALS PIT

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. ON LEASE ACCESS ROADS

Road Width

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

Surfacing

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

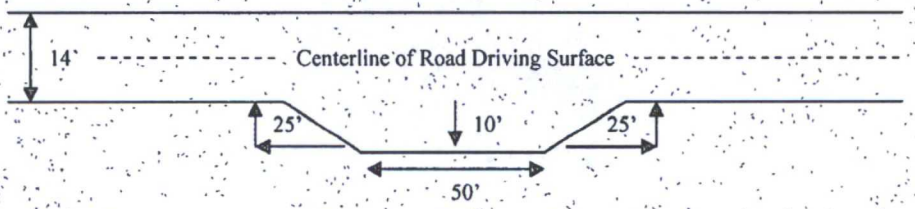
The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching
Ditching shall be required on both sides of the road.

Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:

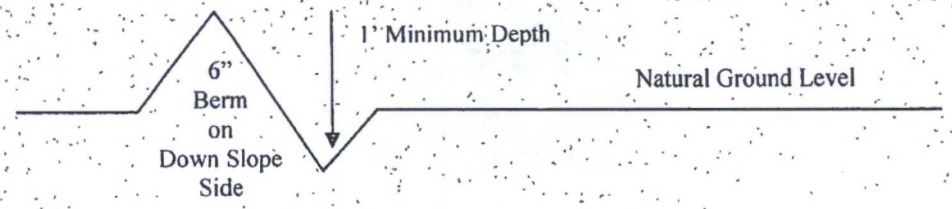
Standard Turnout – Plan View



Drainage
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ lead-off ditch interval

Culvert Installations
Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Cattleguards
An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

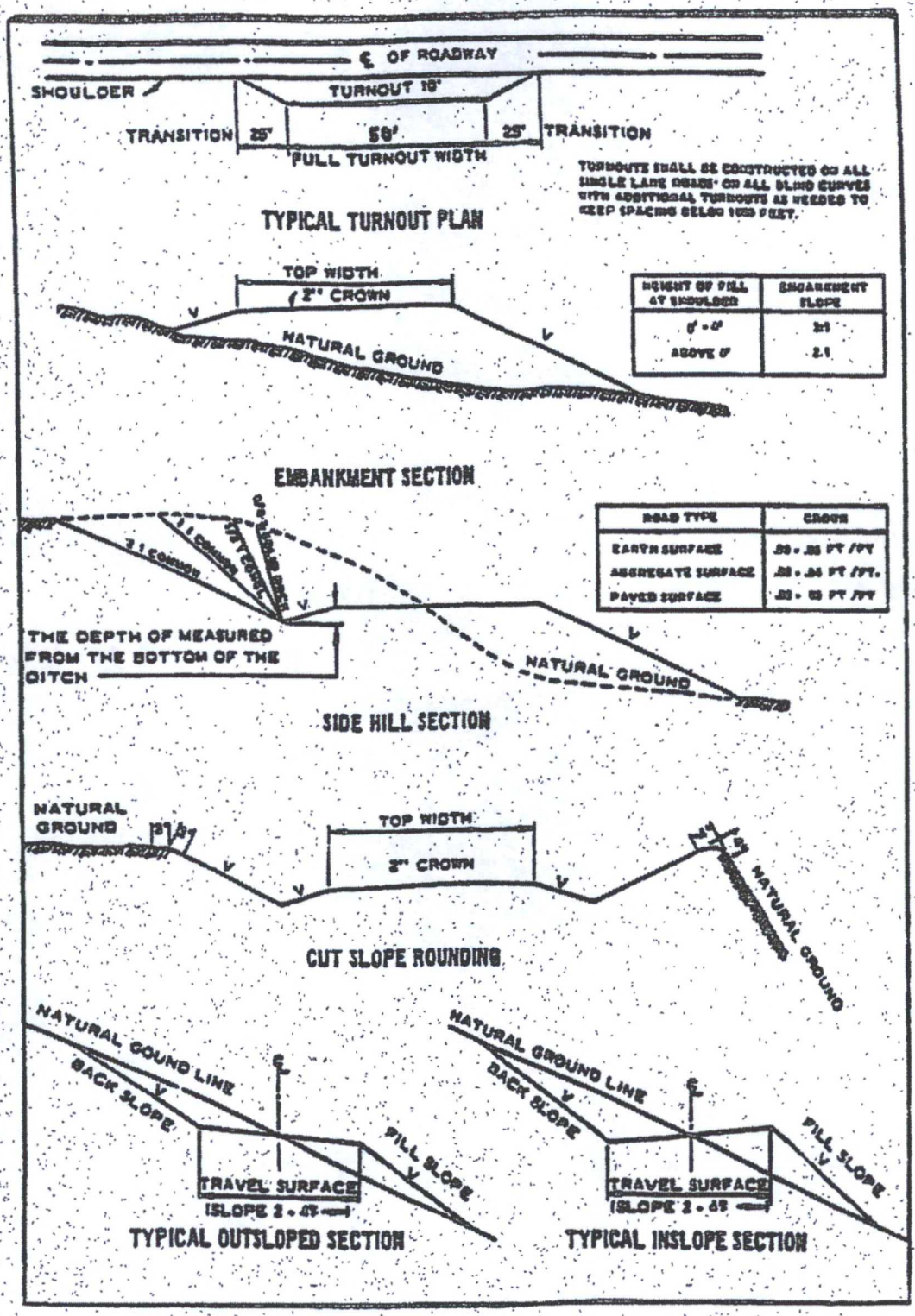
A gate shall be constructed and fastened securely to H-braces.

Fence Requirement
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Public Access
Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 – Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

a. Spudding well
b. Setting and/or Cementing of all casing strings
c. BOPE tests

☒ **Lea County**
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 393-3612

1. A Hydrogen Sulfide (H2S) Drilling Plan should be activated 500 feet prior to drilling into the **Yates** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

4. **The record of the drilling rate along with the CAL/GR/N well log run from TD to surface will be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Possible water and brine flows in the Salado and Artesia Groups.
Possible high pressures in the Wolfcamp and Pennsylvanian Group.

1. The **13-3/8** inch surface casing shall be set **at approximately 1100 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **Fresh water mud to be used to setting depth. Due to the additional casing length, the proposed cement calculates an excess of 3%, therefore more cement may be required to circulate to surface.**

   a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement.

   b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

   c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

   d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **8-5/8** inch intermediate casing is:

   ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.
   Casing is to set in the Tansill formation.

Formation below the 8-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

   a. First stage to DV tool, cement shall:

   ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job.

   b. Second stage above DV tool, cement shall:

   ☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **8-5/8 inch** intermediate casing shoe shall be **5000 (5M)** psi. **5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**

4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

   a. The tests shall be done by an independent service company.

   b. The results of the test shall be reported to the appropriate BLM office.

   c. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

e. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

f. **Effective November 1, 2008, no variances will be granted on reduced pressure tests on the surface casing and BOP/BOPE. Onshore Order 2 requirements will be in effect.**

D. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** formation, and shall be used until production casing is run and cemented.

Proposed mud weight may not be adequate for drilling through Wolfcamp.

E. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

RGH 111009

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Containment Structures
The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color
Shale Green, Munsell Soil Color Chart # 5Y 4/2

IX. INTERIM RECLAMATION & RESERVE PIT CLOSURE

A. INTERIM RECLAMATION

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting interim reclamation.

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

At the time reserve pits are to be reclaimed, operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

B. RESERVE PIT CLOSURE

The reserve pit, when dried and closed, shall be recontoured, all trash removed, and reseeded as follows:

Seed Mixture for LPC Sand/Shinnery Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either

certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A
**Four-winged Saltbush	5lbs/A

* This can be used around well pads and other areas where caliche cannot be removed.

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

Requested Exception to NMOCD Rule 19.15.17.13.F.3.c

Description of Exception

The NMOCD Rule 19.15.17.13.F.3.c specifies concentration limits for the residual mud and cuttings for trench burial. However, the Rule states that residual mud and cuttings may be mixed with three parts clean earth prior to sampling. This submission formally requests an exception to NMOCD Rules to allow "mathematically mixing" the laboratory results from the NMOCD-approved waste sampling protocol rather than physically mixing clean earth material with waste to meet the concentration (mass) limits specified in NMOCD Rules. The example below illustrates our proposed mathematical mixing protocol.

When we physically mix 3 parts natural earth material with a chloride concentration of 10 mg/L (SPLP preparation method) with drilling solids that contain 11,000 mg/L (SPLP preparation method) the resultant concentration is:

$$\text{Cl mg/L in mixture} = \frac{(\text{Cl mg/L in solids} * 1 \text{ part}) + (\text{Cl mg/L in earth} * 3 \text{ parts})}{4 \text{ parts}}$$

Or for this example:

$$\text{Cl mg/L in mixture} = \frac{(11{,}000 \text{ mg/L} * 1 \text{ part}) + (10 \text{mg/L} * 3 \text{ parts})}{4 \text{ parts}} = 2{,}758 \text{ mg/L}$$

In other words, we propose to use this equation to show that the *mass* of the constituent of concern (e.g. chloride) in the burial trench at this site is equal to or less than the mass of buried chloride allowed by NMOCD Rules.

Scientific Rationale

We believe that the following qualitative explanation is useful and sufficiently illustrates that a 3-foot thick layer of drilling mud and cuttings with 60,000 mg/L (SPLP method) chloride represents a smaller or equal threat to ground water quality as a 12-foot thick layer of 3 parts sand plus caliche mixed with 1 part drilling mud and cuttings with a chloride concentration of 15,000 mg/L (SPLP method).

In Exhibit 8 of Case 14292 (the Pit Rule Hearing) NMOCD presented a simulation of a standard burial trench consisting of a 12.5-foot layer of drilling waste with a chloride concentration of 60,000 mg/L (SPLP method) placed beneath 4-feet of soil cover. The distance between the bottom of the trench and ground water in this simulation was 100 feet. Although not listed on page 11 of the Exhibit, the thickness of the waste layer (12.5 feet) is an important input parameter.

The NMOCD simulation uses the HELP model to calculate a downward moisture flux through the liner beneath the waste. Transport of moisture and chloride through the lower vadose zone is simulated by using this moisture flux and an averaged chloride concentration from the buried waste as inputs to the model Multimed.

In the NMOCD exhibit, the mass of chloride in the burial trench can be calculated using the following input data:

- Area of waste disposal unit (167 square meters)
- Thickness of waste (12.5 feet)
- Concentration of chloride in soil moisture (60,000 mg/L)
- Initial moisture content of the waste layer as used in HELP (0.2830)

The resulting chloride mass in the 12.5 foot thick layer of waste is 228.6 kg/meter^2. Multiplying by the area of the burial site gives the total mass of chloride for the site as 38,176 kg. Although the mass of chloride is not specifically stated, it is an important part of the input parameters used in the NMOCD simulation.

Within the vadose zone, hydraulic conductivity is a function of moisture content and the texture of the media. Within Multimed, hydraulic conductivity in each layer is calculated for each time step as it is within models we employ (e.g. Hydrus-1D). Hence, transient changes of hydraulic conductivity are also implicitly considered in the NMOCD simulation.

Dispersion and dilution also occur within the vadose zone. As is common in simulations of the vadose zone, the NMOCD models simulate chloride-rich moisture in the buried waste moving through the lower liner layer and mixing with ambient soil moisture. This produces dilution and a resultant reduction in constituent concentration. Because some pore channels of the vadose zone transmit moisture faster than adjacent pore channels, the center of mass once represented by the 12.5-foot thick buried waste is dispersed over a greater vertical distance and the concentration of the constituent is decreased.

Now consider how the protocols outlined in this proposal would be simulated in the NMOCD model. The model would use the same characteristics with the following changes:

1. The thickness of the cuttings/mud layer is 3 feet
2. Because the mass of chloride in the 3-foot layer is the same as the NMOCD model, the concentration of chloride in this layer is significantly higher.
3. The distance from the base of the waste to the water table is now 109 feet

4. Because of the higher percentage of very-fine grained materials in the cuttings/mud, the saturated hydraulic conductivity is significantly less than a mixture of 1 part cuttings/mud and three parts sand/caliche
5. Drainage and drying of the cuttings/mud results in a similar moisture content about the same as the 1:3 mixture used in the NMOCD model

We believe that an NMOCD expert in the field of unsaturated flow, such as Mr. Hansen, would verify that there is no material difference in the output of the NMOCD exhibit and a simulation that employs the changes identified above. We believe Mr. Hansen would confirm that provided the *mass* of chloride in the two burial trenches described above are equal, the resultant threat to ground water posed by both trenches is also essentially equal.

If requested by NMOCD, we would be pleased to provide a HYDRUS-1D simulation of the proposed protocol and the NMOCD example in Exhibit 8 for NMOCD review and comparison.

Revised Solids Sampling Plan

The contents of the pit will be sampled after drainage and drying and prior to any addition of clean fill according to the protocol outlined in NMOCD Rules for trench burial. As outlined in the NMOCD-approved C-144, we will obtain a five-point composite sample of the residual solids for laboratory analysis of:

- GRO and DRO using EPA Method 8015B rather than TPH concentration, as determined by EPA method 418.1
- Chloride, using EPA SW-846 method 1312 (SPLP) and determined by EPA method 300.1
- The concentrations of the inorganic water contaminants specified in 20.6.2.3103(A) NMAC EPA SW-846 method 1312 (SPLP) as determined by appropriate EPA methods, and
- The concentrations of the organic water contaminants specified in 20.6.2.3103(A) NMAC EPA SW-846 method 1312 (SPLP) as determined by appropriate EPA methods.

Upon receipt of the results, we will provide NMOCD with the calculation showing that the mass of constituents of concern that will be trench buried at the site meets the criteria established by NMOCD Rules (concentration x mass of mixed waste = mass of constituents of concern). The calculation of constituent mass is described above. Excavation and removal of the solids in the brine pit (inner horse shoe) may be required to meet the criteria established in NMOCD Rules. The submission of testing results may recommend removal of some waste from the inner horse shoe pit to meet the requirements of the Pit Rule and insure protection of fresh water, public health, and the environment.

Demonstration that the Proposed Exception Provides Equal or Better Protection of Fresh Water, Public Health and the Environment.

For in-place burial where liners do not separate waste from the soil horizon, concentration limits are critical to the protection of the root zone. However, for trench burial, the Laws of Fluid Mechanics demonstrate that it is not the concentration that creates any threat to ground water– it is the mass of the buried constituent (and to a lesser extent moisture content, hydraulic conductivity, porosity, and other factors). If consultation with Mr. Hansen regarding this point is an insufficient demonstration, we will conduct an independent simulation.

In addition to the benefit of waste minimization (as compared to the practice allowed by NMOCD Rules of mixing 3 parts clean soil with 1 part waste), stabilization of the residual cuttings and mud by fluid removal and drying (as described in the approved C-144) eliminates the need for additional construction efforts associated with mixing the waste. This leads to fewer exhaust emissions – an environmental benefit. Additionally, the elimination of a separate burial trench reduces the size of the footprint of disturbance on the land. Removal of pit fluids by drainage pumping also reduced the mass of buried salt.

We conclude that this protocol is mathematically equal to compliance with the Rule.

Requested Exception to NMOCD Rule 19.15.17.13.F.3.e

Description of the Exception

We request an exception to the requirement to excavate and transfer all contents and pit liners to a lined trench. As described below, we propose to re-use the drilling pit as the burial trench, which would obviate the need for excavation and transfer of materials.

Scientific Rationale

The design of the drilling pit is consistent with the design of a trench for burial (see Appendix D). Provided that leak detection monitoring demonstrates that the drilling pit liner has maintained integrity and the design features mandated by NMOCD Rules for trench burial (e.g. four feet separation between the top of the waste and ground surface as described in the approved C-144) are implemented during closure of the pit, we conclude that burial of waste in a drilling pit is as effective as what is specified in the Pit Rule, specifically, burial of waste in a separate trench at this location.

This submittal does not propose any exceptions to the prescriptive mandates for trench burial. This proposal requests that NMOCD approve re-use of drilling pit that has maintained its integrity (no leakage) as a burial trench.

Revised Construction/Design of Burial Trench

Lynx proposes to close the pit by re-using the drilling pit as an on-site trench. The operator has designed and constructed the drilling pit to comply with all design and construction mandates for an on-site trench for closure as specified in19.15.17.13.B(2) NMAC – with the exception of the mandate to construct a separate trench. The construction and design of the drilling pit/burial trench will include the following elements:

1. The operator has constructed the pit with a geomembrane bottom liner required pursuant to 19.15.17.13.H NMAC.
2. The drilling pit (on-site trench) has a properly constructed foundation and side walls consisting of a firm, unyielding base, smooth and free of rocks, debris, sharp edges or irregularities to prevent the liner's rupture or tear.
3. Geotextile was placed under the liner where needed to reduce localized stress-strain or protuberances that may otherwise compromise the liner's integrity.
4. The drilling pit (on-site trench) was constructed with a geomembrane liner that consists of a 20-mil string reinforced LLDPE liner.
5. The geomembrane liner is composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. The liner material will be resistant to ultraviolet light. Liner compatibility will comply with EPA SW-846 method 9090A.
6. The operator minimized liner seams and oriented them up and down, not across a slope and the operator used factory welded seams where possible. Prior to field seaming, the operator overlapped liners four to six inches and oriented liner seams parallel to the line of maximum slope, *i.e.*, oriented along, not across, the slope. The operator minimized the number of field seams in corners and irregularly shaped areas.
7. Qualified personnel performed field seaming. The operator welded field liner seams.
8. The operator installed sufficient liner material to reduce stress-strain on the liner.
9. The operator ensured that the outer edges of all liners are secured for the placement of waste material into the drilling pit (on-site trench).
10. The operator will fold the outer edges of the drilling pit (trench) liner and add liner if necessary to overlap the waste material in the trench prior to the installation of the geomembrane cover.
11. The operator will install a geomembrane cover over the waste material in the lined trench (former drilling pit). The operator will install the geomembrane cover in a manner that prevents the collection of infiltration water in the lined trench and on the geomembrane cover after the soil cover is in place.

12. The geomembrane cover will consist of a 20-mil string reinforced LLDPE liner. The geomembrane cover will be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. Cover compatibility will comply with EPA SW-846 method 9090A.

Demonstration that the Proposed Exception Provides Equal or Better Protection of Fresh Water, Public Health and the Environment.

We believe that Appendix D clearly shows that a drilling pit constructed in accordance with the mandates of NMOCD Rules (as described in the approved C-144) provides equal protection of fresh water, public health and the environment than constructing a separate lined trench and transferring the contents of the pit into the trench.

Re-use of the drilling pit as a burial trench is consistent with the re-use requirement in NMOCD Rules for consideration of exceptions to the Rule. Additionally, not constructing a separate trench for burial of waste results in fewer emissions during construction and a smaller disturbed footprint on the land.

Exception Request to NMOCD Rule 19.15.17.F.3 (f)(ii)

Description of the Exception

We request an exception to the requirement to test the soils beneath the temporary pit after excavation to determine whether a release has occurred. As described below, we propose to employ a leak detection system in lieu of soil sampling to determine whether a release has occurred.

Scientific Rational

NMOCD Rules state "The operator shall test the soils beneath the temporary pit to determine whether a release has occurred." The Rule then provides a protocol for this testing. However, several methods exist to "determine whether a release has occurred". The method described below is nearly identical to a leak detection system approved by NMED (2008) for a brackish water pond in Sandoval County. This method detects liner leakage by monitoring moisture content in a permeable layer above a secondary liner. Should a release occur, fluid will collect in the permeable layer between these two liners. If moisture content between the liners suggests saturated conditions, the conclusion is leakage from the primary liner.

Revised Confirmation Sampling Plan

As described below, we will inspect the earth below the primary liner that is not adequately monitored by the leak detection system (slopes of the pit above the

level of the solids in the pit) for moisture and discoloration and sample soil according to specified protocols as necessary.

For the Lusk Pit, a total of 10 leak detection grids were installed (see Appendix C and the approved C-144). Each leak detection grid contains one gypsum block moisture sensor (Soil Moisture Corporation Model 5201F, www.soilmoisture.com/prod_details.asp?prod_id=1087&cat_id=20) installed in accordance with manufacturer's specifications in:

- A 3- to 6-inch layer of permeable earth (e.g. sand), which overlies
- A sheet of 20-mil string reinforced liner with dimensions of approximately 25 feet by 30 feet

Two leak detection grids underlie the inner horse shoe brine pit, which will be completely removed to the outer horse shoe, which will double as the burial trench. Upon pit closure, the earthen material beneath the inner horse shoe pit will be visually inspected for wet or discolored earth.

Eight leak detection grids are distributed beneath the outer horse shoe of the pit as shown in the approved C-144. As described in the closure plan, the drilling pit will become the burial trench provided that the liner maintains integrity. Therefore, we will inspect the side slopes of pit for wet earth or discoloration during the closure process.

Demonstration that the Proposed Exception Provides Equal or Better Protection of Fresh Water, Public Health and the Environment.

The State of New Mexico has approved this same type of release detection system for a brackish water storage pit operated by Sandoval County.

We conclude that this method of leak detection is as effective as what is specified in the Pit Rule, and in some cases, could provides better protection of the environment because monitoring the integrity of the pit occurs during and after operation of the pit. Real-time leak detection will allow the operator to take action to mitigate impact to the environment whereas inspection during closure does not.

Summary

1. This submission does not propose to replace or change any protocols or commitments presented in the approved C-144 except the three requests described above.
2. We believe the information presented herein demonstrates that the proposed alternative methods are as effective as what is specified in the Pit Rule and could provide better protection of fresh water, public health and the environment in some scenarios.
3. The protocols described in the approved C-144 require removal of liquids prior to implementing the burial trench closure method and disposal of the

liquids in a division-approved facility. If possible, we will recycle or reuse the liquids for drilling future wells.

4. The proposed protocols outlined herein implement one or more of the following practices:
    a. Waste minimization – the protocols do not call for mixing clean earth with waste
    b. Reclamation – using the existing drilling pit for the burial trench reduces the size of disturbance of habitat
    c. Reuse; recycling – the protocols call for re-using the pit and pit liners for the burial trench;
    d. Reduction in available contaminant concentration – removal of cut brine and entrained constituents of concern from the residual solids via drainage system pumping will reduce the mass/concentration in the buried waste (see approved C-144).

Appendix D –Design and Specifications of Drilling Pit v. Burial Trench

F. Temporary pits. The operator shall design and construct a temporary pit in accordance with the following requirements.	**J.** On-site trenches for closure. The operator shall design and construct an on-site trench for closure, specified in Paragraph (2) of Subsection B of 19.15.17.13 NMAC or Paragraph (2) of Subsection D of 19.15.17.13 NMAC, in accordance with the following requirements.
(1) The operator shall design and construct a temporary pit to ensure the confinement of liquids to prevent unauthorized releases.	**(1)** The operator shall locate the trench to satisfy the siting criteria specified in Subsection C of 19.15.17.10 NMAC and Subparagraph (d) of Paragraph (3) of Subsection F of 19.15.17.13 NMAC and excavate to an appropriate depth that allows for the installation of the geomembrane bottom liner, geomembrane liner cover and the division-prescribed soil cover required pursuant to Subsection H of 19.15.17.13 NMAC.
(2) A temporary pit shall have a properly constructed foundation and interior slopes consisting of a firm, unyielding base, smooth and free of rocks, debris, sharp edges or irregularities to prevent the liner's rupture or tear. The operator shall construct a temporary pit so that the slopes are no steeper than two horizontal feet to one vertical foot (2H:1V). The appropriate division district office may approve an alternative to the slope requirement if the operator demonstrates that it can construct and operate the temporary pit in a safe manner to prevent contamination of fresh water and protect public health and the environment.	**(2)** An on-site trench shall have a properly constructed foundation and side walls consisting of a firm, unyielding base, smooth and free of rocks, debris, sharp edges or irregularities to prevent the liner's rupture or tear.
(3) The operator shall design and construct a temporary pit with a geomembrane liner. The geomembrane liner shall consist of 20-mil string reinforced LLDPE or equivalent liner material that the appropriate division district office approves. The geomembrane liner shall be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. The liner material shall be resistant to ultraviolet light. Liner compatibility shall comply with EPA SW-846 method 9090A.	*(3) See below in italics* **(4)** An on-site trench shall be constructed with a geomembrane liner. The geomembrane shall consist of a 20-mil string reinforced LLDPE liner or equivalent liner that the appropriate division district office approves. The geomembrane liner shall be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. The liner material shall be resistant to ultraviolet light. Liner compatibility shall comply with EPA SW-846 method 9090A.
(4) The operator shall minimize liner seams and orient them up and down, not across a slope. The operator shall use factory welded seams where possible. Prior to field seaming, the operator shall overlap liners four to six inches and orient seams parallel to the line of maximum slope, *i.e.*, oriented along, not across, the slope. The operator shall minimize the number of field seams in corners and irregularly shaped areas. Qualified personnel shall perform field seaming. The operator shall weld field liner seams.	**(5)** The operator shall minimize liner seams and orient them up and down, not across a slope. The operator shall use factory welded seams where possible. Prior to field seaming, the operator shall overlap liners four to six inches and orient liner seams parallel to the line of maximum slope, *i.e.*, oriented along, not across, the slope. The operator shall minimize the number of field seams in corners and irregularly shaped areas. Qualified personnel shall perform field seaming. The operator shall weld field liner seams.
(5) Construction shall avoid excessive stress-strain on the liner.	**(6)** The operator shall install sufficient liner material to reduce stress-strain on the liner.
(6) *Geotextile is required under the liner where needed to reduce localized stress-strain or protuberances that may otherwise compromise the liner's integrity.*	***(3)*** *Geotextile is required under the liner where needed to reduce localized stress-strain or protuberances that may otherwise compromise the liner's integrity.*
(7) The operator shall anchor the edges of all liners in the bottom of a compacted earth-filled trench. The anchor trench shall be at least 18 inches deep.	**(7)** The operator shall ensure that the outer edges of all liners are secured for the placement of the excavated waste material into the trench.

DRAFT NOTICE OF PUBLICATION

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division

Notice is hereby given that pursuant to Oil Conservation Division Regulations, the following Proposed Exceptions to NMOCD Rules have been submitted to the Director of the Oil Conservation Division, 1220 S. St. Francis Dr., Santa Fe, New Mexico 87505, Telephone (505) 476-3440:

Larry Scott, President of Lynx Petroleum Consultants, Inc., which is a New Mexico corporation, Telephone (575) 392-6950, PO Box 1708, Hobbs, New Mexico 88241, has submitted an application for exceptions to NMOCD Rules for the Lusk 31 Federal #3 Drilling Pit site, located in Section 31, Township 18 South, Range 32 East, Lea County, New Mexico, approximately 12 miles south of Maljamar, New Mexico. Lynx Petroleum Consultants, Inc. is the operator of an oil and gas well at the site.

With the exception of the proposals described below, the operator will follow all mandates of NMOCD Rules. Proposal #1: In lieu of collecting soil samples beneath the liner to determine if a release occurred, the operator proposes to monitor a leak detection system. Proposal #2: In lieu of physically mixing one part drilling waste with three parts "clean soil" prior to sampling, the operator proposes to remove entrained brine from the waste to stabilize the material, obtain a sample of the undiluted waste and "mathematically mix" the sample results to demonstrate that the mass of constituents of concern in the waste meets the criteria of NMOCD Rules. Proposal #3: Because an intact drilling pit meets the construction specifications for a burial trench, the operator proposes to use the drilling pit for trench burial of the waste.

The division has determined that the application satisfies the requirements of OCD Rules and is therefore, administratively complete. The division will accept written comments on the proposed exceptions if the director receives them within 30 days after the date of publication of the public notice. Persons who are interested in obtaining further information, submitting comments, or wish to be placed on a facility-specific mailing list for future notices may contact the Environmental Bureau Chief of the Oil Conservation Division at the address given above. The application and administrative completeness determination may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday, or may also be viewed at the OCD web site (http://www.emnrd.state.nm.us/ocd). Persons who are interested in obtaining a copy of the application and administrative completeness determination may contact XXXXX at the address given above, or by telephone at 505-476-3484, or by email at XXXXXX..

The Director shall allow a period of at least thirty (30) days after the date of publication of this notice, during which interested persons may submit comments or request that NMOCD hold a public hearing. Requests for a public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines that there is significant public interest.

If the Director determines that a hearing is required, the operator has agreed to hold a public meeting at 6 pm on June (this date will be after the public notice period) at the Hobbs Country Club in Hobbs, New Mexico to address questions or concerns.