Mustang Federal Com #2

Located in SECTION 21, T18S, R29E of Eddy Co., NM

GPS Reading of 32°-43'-55.5"-N & 104°-04'-23.9"-W

API # 30-015-36025

Reserve Drilling Pit Closure Report

Presented to:

Murchison Oil & Gas

406 N Guadalupe, Suite B
Carlsbad, New Mexico 88221-0627

Prepared by:

Phoenix Environmental, LLC.

P.O. Box 1856
Hobbs, New Mexico 88240

TABLE OF CONTENTS

SECTION I

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

SEP 17 2008
OCD-ARTESIA

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: Murchison Oil and Gas, Inc. OGRID #: 015363
Address: 1100 Mira Vista Blvd., Plano, Texas 75093-4698
Facility or well name: Mustang Federal Com. #2
API Number: 30-015-36025 OCD Permit Number:
U/L or Qtr/Qtr I Section 21 Township 18S Range 29E County: Eddy
Center of Proposed Design: Latitude N 32 43'55.0" Longitude W 104 04' 24.7" NAD: ☐ 1927 ☐ 1983
Surface Owner: ☐ Federal ☐ State X Private ☐ Tribal Trust or Indian Allotment

JAN 06 2009
OCD-ARTESIA

2.
☐ **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 ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other
X String - Reinforced
Liner Seams: ☐ Welded X Factory ☐ Other Volume: 6000 bbl Dimensions: L 150 x W 150 x D 7

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

RECEIVED

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.

Final Closure
No Registration submitted

Accepted for record
NMOCD

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)*

X 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

X 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 X 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 X 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 X 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 X 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 X 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 X No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes X No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes X No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes X No
Within a 100-year floodplain. - FEMA map	☐ Yes X 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
X 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: 30-015-36025 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: X Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ P&A ☐ Permanent Pit ☐ Below-grade Tank ☐ Closed-loop System ☐ Alternative
Proposed Closure Method: X 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.***

X Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
X Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
X Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
X Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
X Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
X 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: CRI Disposal Facility Permit Number: R9166

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:

X Soil Backfill and Cover Design Specifications - - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

X Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC

X 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): Tommy W. Folsom Title: Operations Manager

Signature: T W Folsom Date: 09-17-08

e-mail address: tommyfolsom@valornet.com Telephone: (575) 628-3932

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

OCD Representative Signature: Signed By Mike Bratcher **Approval Date:** SEP 24 2008

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:** 12-4-08

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): Tommy W. Folsom Title: Operation Manager

Signature: T W Folsom Date: 1-2-09

e-mail address: Tommyfolsom@valornet.com Telephone: 575-628-3932

Accepted for record
NMOCD

JAN 06 2009
OCD-ARTESIA

New Mexico Energy, Minerals and Natural Resources Department

Bill Richardson
Governor

Joanna Prukop
Cabinet Secretary
Reese Fullerton
Deputy Cabinet Secretary

Mark Fesmire
Division Director
Oil Conservation Division

Conditions of approval for closure of a drilling pit

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

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

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

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

Oil Conservation Division
1301 West Grand • Artesia, New Mexico 88210
Phone (575) 748-1283 • Fax (575) 748-9720 • www.emnrd.state.nm.us/OCD

Summary/Overview

The Mustang Fed Com #2 drilling pit should be completed and remediated in accordance with the standards of the NMOCD. It is our understanding that any potential contamination from the site was a result of activities associated with the drilling and production of oil and gas.

The potential contaminates of concern are mid to high-level concentrations of drilling mud and cuttings that were left in the pit once drilling operations were completed.

The lands primary use is domestic pasture for ranching and the production of oil and gas.

The ground water depth data available for this area showed the depth to ground water to be in the 175' range BGS.

Pursuant to the standards of the NMOCD, the clean up level for this site will be at <2,500ppm of TPH, <50ppm for BTEX and Chlorides less than <1,000ppm.

The following scope of work was based on data from our site visit and the requirements of the NMOCD for site clean up following the new pit rule 19.15.17 NMAC that started on 6-16-08.

NOTE: The GRO & DRO combined fraction, as determined as determined by EPA SW-846 Method 8015M not to exceed 500 mg/kg

Scope of Work for Off-Site Disposal

NOTE: Phoenix, for the purpose of this work plan, will estimate that there is approximately 2,500cyds of impacted soils at the site that needs to be addressed for site closure.

1. Phoenix will mobilize to the site located southwest of Loco Hills, NM equipment and personnel necessary to start and complete the site remediation as required, getting the site back into compliance with the requirements of subsection G of 19.15.17.13 NMAC.

2. At the site a staging area will be set up for site control and safety.

3. The impacted soils will be excavated, stabilized and loaded into trucks for off-site disposal.

4. Impacted soils at the site will then be transported to a NMOCD approved disposal facility for disposal (CRI Permit #9166).

5. Phoenix will field screen the site during the excavation, and, once the TPH BTEX and CL has dropped below clean-up requirements, final samples will be taken and sent to a third party lab for analysis and tested for BTEX 8021 B, TPH 418.1, TPH 8015 GRO/DRO and CL (chlorides) to meet the requirements of subsection D of 19.15.17.13 NMAC.

6. Once all of the remediation criteria have been met for site closure and compliance, the site will be backfilled with clean material from the site and contoured with a crown to prevent the ponding of water to meet the requirements of subsection H of 19.15.17.13 NMAC.

7. The site will be reseeded once backfilling operations have been completed to meet the requirements of subsection I of 19.15.17.13 NMAC

8. Once all of the closure criteria have been met, a final closure report will be prepared by Phoenix. This report will include a summary of remediation operations, findings on-site and lab analysis, site maps and project photos to meet the requirements of subsection K of 19.15.17.13 NMAC.

If you have any questions and/or need more data in regards to this project please call 505-631-8314 at any time.

Sincerely,

Allen Hodge, REM
VP Operations
Phoenix Environmental LLC

SECTION II

Project Overview

Phoenix Environmental, LLC. (Phoenix) was contracted for the closure of a reserve-drilling pit on the Mustang Federal Com #2, belonging to Murchison Oil & Gas. The Mustang Federal Com #2 is located in Section 21 T18S R29E. The GPS Reading is 32°43'55.5"N & 104°04'23.9"W, with an elevation of 3470 feet above sea level. The land, in and around the site, is primarily used as domestic pasture for ranching and the production of oil and gas. The pit site is located on the east side of the location.

The potential contaminates of concern were mid- to high-level concentrations of drilling mud, cuttings, and drilling fluids that were left after drilling operations were completed.

The ground water depth data available from the State of New Mexico Engineers' office showed the vertical depth to the top of water to be about 170 feet below surface.

Pursuant to the NMOCD guidelines for clean up of unlined surface impoundments, the clean up level for this site will be at <2,500 ppm for TPH (Total Petroleum Hydrocarbons) and <50 ppm for BTEX (Benzene, Toluene, Ethylbenzene, and Xylene). The NMOCD has also asked for CL (Chlorides) be returned back as close to background levels as possible or <1,000 ppm.

Findings and Conclusion

It appeared that in excess of 1,780 cubic yards (cyds) of cuttings, drilling mud, and soil were impacted in the pit area with the dimensions of 120'x120'x8'.

The bottom of the excavation (approximately 8 feet) was tested for Chlorides to make certain that the target limits had been met prior to backfilling and compaction for closure. The site cleaned up well with vertical depth of impact, listed above at 8 feet and not impacting groundwater. All of the final lab analyses were below the NMOCD guidelines for unlined surface impoundments (refer to attached laboratory reports for actual levels).

The site was backfilled and compacted with clean backfill and contoured with a crown back to grade to prevent ponding on the area. The site was reseeded and should vegetate very well with upcoming rains.

Chronology of Operations

1. *October 29, 2008 – Phoenix mobilized on-site. The first order on the agenda was a tailgate safety meeting to review any potential safety concerns of the site and to cover the clean- up operations. (Please note that a daily safety meeting is the first order of the day before any work begins on site). New Mexico One Call was notified of the intent to finish the pit closure. A track hoe cleared the area of vegetation and debris around the pit and the staging area.*

2. *October 30, 2008 – Crew dug out impacted soil from the reserve drilling pit and loaded impacted soils into trucks. Trucks hauled 40 cubic yards of drilling cuttings to CRI (a NMOCD permitted commercial waste disposal facility).*

3. *October 31, 2008 – Crew continued to dig out impacted soils from the reserve drilling pit and load impacted soils into trucks. Trucks hauled 100 cubic yards to off site disposal.*

4. *November 5, 2008 - Crew continued to dig out impacted soils and load the impacted soils into trucks. Trucks hauled 280 cubic yards to off site disposal.*

5. *November 6, 2008 - Crew continued to dig out contents of the reserve drilling pit and loaded the impacted soils into trucks. Trucks hauled 40 cubic yards to disposal. Dozier was utilized to clean up inside horseshoe bottoms.*

6. *November 7, 2008 – Crew continued to dig out impacted soils from the reserve drilling pit and load the impacted soils into trucks. Trucks hauled 160 cubic yards to off-site disposal.*

7. *November 10, 2008 – Crew continued to dig out impacted soils from the reserve drilling pit and load the impacted soils into trucks. Trucks hauled 160 cubic yards to off-site disposal.*

8. *November 11, 2008 – Crew continued to dig out impacted soils from the reserve drilling pit and load the impacted soils into trucks. Trucks hauled 200 cubic yards to off-site disposal.*

9. *November 17, 2008 – Crew continued to dig out impacted soils from the reserve drilling pit and load the impacted soils into trucks. Trucks hauled 100 cubic yards to off-site disposal.*

10. *November 18, 2008 – Crew continued to dig out impacted soils from the reserve drilling pit and load the impacted soils into trucks. Trucks hauled 200 cubic yards to off-site disposal.*

11. *November 19, 2008 – Crew continued to dig out impacted soils from the reserve drilling pit and load the impacted soils into trucks. Trucks hauled 240 cubic yards to off-site disposal. 3 Field samples were pulled to test chlorides.*

12. *November 21, 2008 – Crew continued to dig out impacted soils from the reserve drilling pit and load the impacted soils into trucks. Trucks hauled 60 cubic yards to off-site disposal.*

13. *November 24, 2008 - Crew continued to dig out impacted soils from the reserve drilling pit and load the impacted soils into trucks. Trucks hauled 160 cubic yards to off-site disposal.*

14. *November 24, 2008 - The bottom of the reserve drilling pit was cleaned and final samples were taken and sent to a third party laboratory for analysis of Chlorides for final verification of the limits met. (Please refer to attached reports, pages 17 through 20 of this report). Trucks hauled off 40 cubic yards. Mike Bratcher with NMOCD was contacted for approval to begin backfill. Mike stated that the field test looked good and Phoenix Environmental LLC could begin backfilling.*

15. *December 1 & December 2, 2008 – Crew worked on backfilling reserve drilling pit.*

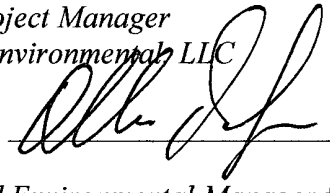
16. *December 3, 2008- Crew finished backfilling reserve drilling pit. Location was dressed. Final contouring and compaction was implemented to return the site back to grade. Contouring was completed with a crown to prevent rainwater ponding. Phoenix Environmental LLC contacted Terry Gregston with BLM was notified that Phoenix Environmental LLC were going to reseed.*

17. *December 4, 2008 – The site was reseeded with native grasses BLM #2 and with the available moisture should vegetate very quickly.*

Certification

The following Phoenix Environmental personnel have reviewed this report and verified that to the best of their knowledge the contents are true and correct.

Allen Hodge, REM
Senior Project Manager
Phoenix Environmental, LLC

Signature: 

Registered Environmental Manager #7096
National Registry of Environmental Professionals

SECTION III

SUMMARY SOIL ANALYSIS REPORT

Client: Murchison Oil & Gas
Supervisor: Allen Hodge
Sample Matrix: Soil

Facility: Mustang Federal Com #2
Order No.: Tommy Folsom
Samples Received: Intact on site

Initial Project Screening

Sample	Date	Depth	Chlorides	TPH	BTEX	Location	Test Method
#1							EPA 325.3
#2							EPA 325.3
#3							EPA 325.3
#4							EPA 325.3
#5							EPA 325.3
#6							EPA 325.3

Samples reported in parts per million (ppm) and depth is in feet (') and inches (")

Interim Project Screening

Sample	Date	Depth	Chlorides	TPH	BTEX	Location	Test Method
#1	12/1/08	8'	100			Outside North	EPA 325.3
#2	12/1/08	8'	140			Outside East	EPA 325.3
#3	12/1/08	8'	80			Outside South	EPA 325.3
#4	12/1/08	8'	150			Inside North	EPA 325.3
#5	12/1/08	8'	60			Inside South	EPA 325.3
#6	12/1/08	0-6"	<50			Background	EPA 325.3
#7							
#8							
#9							
#10							
#11							
#12							
#13							
#14							
#15							
#16							

Samples reported in parts per million (ppm) and depth is in feet (') and inches (")

Final (Third Party Laboratory) Project Screening Verification

Sample	Date	Depth	Chlorides	TPH	BTEX	Location	Test Method
#1	12/8/08	8'	144	<100		Outside North	See Report
#2	12/8/08	8'	96	<100		Outside East	See Report
#3	12/8/08	8'	112	<100		Outside South	See Report
#4	12/8/08	8'	64	<100		Inside North	See Report
#5	12/8/08	8'	48	<100		Inside South	See Report
#6	12/8/08	0-6"	<16	<100		Background	See Report
#7							

Samples reported in parts per million (ppm) and depth is in feet (') and inches (")

Phoenix Environmental, LLC.
P.O. Box 1856 – 2113 French Drive
Hobbs, New Mexico 88241
505.391.9685 – FAX: 505.391.9687

SOIL ANALYSIS REPORT

Date: 12/1/08
Client: Murchison Oil & Gas.
Supervisor: *Allen Hodge*
Sample Matrix: *Soil*

Facility: Mustang Federal Com #2
Test Method: *EPA 325.3*
Order No.: Tommy Folsom
Sample Received: *Intact on site*

Sample	CL (ppm)	Depth (feet)	Location
#1	*100*	*8'*	*Outside North*
#2	*140*	*8'*	*Outside East*
#3	*80*	*8'*	*Outside South*
#4	*150*	*8'*	*Inside North*
#5	*60*	*8'*	*Inside South*
#6	*<50*	*0-6"*	*Background*

COMMENTS: *These samples are field screen samples taken to confirm regulator limits prior to final lab analysis.*

CARDINAL LABORATORIES

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

ANALYTICAL RESULTS FOR
PHOENIX ENVIRONMENTAL, LLC
ATTN: ALLEN HODGE
P.O. BOX 1856
HOBBS, NM 88241
FAX TO: (575) 391-9687

Receiving Date: 12/05/08
Reporting Date: 12/09/08
Project Number: API #30-015-36025
Project Name: MUSTANG FED COM #2
Project Location: UL-I-SEC21-T18S-R29E

Sampling Date: 12/04/08
Sample Type: SOIL
Sample Condition: INTACT
Sample Received By: ML
Analyzed By: AB/TR

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		12/08/08	12/08/08	12/08/08	12/08/08
H16475-1	1-NORTH OUTSIDE @ 8'	<10.0	<10.0	<100	144
H16475-2	2-EAST OUTSIDE @ 8'	<10.0	<10.0	<100	96
H16475-3	3-SOUTH OUTSIDE @ 8'	<10.0	<10.0	<100	112
H16475-4	4-NORTH INSIDE @ 8'	<10.0	<10.0	<100	64
H16475-5	5-SOUTH INSIDE @ 8'	<10.0	<10.0	<100	48
H16475-6	6-BACKGROUND @ 0-6"	<10.0	<10.0	<100	<16
Quality Control		504	531	272	500
True Value QC		500	500	300	500
% Recovery		101	106	90.7	100
Relative Percent Difference		6.7	7.2	0.8	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

12/10/08
Date

H16475 TPH2CL PE

CARDINAL LABORATORIES

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

ANALYTICAL RESULTS FOR
PHOENIX ENVIRONMENTAL,LLC
ATTN: ALLEN HODGE
P.O. BOX 1856
HOBBS, NM 88241
FAX TO: (575) 391-9687

Receiving Date: 12/05/08
Reporting Date: 12/09/08
Project Number: API #30-015-36025
Project Name: MUSTANG FED COM #2
Project Location: UL-I-SEC21-T18S-R29E

Sampling Date: 12/04/08
Sample Type: SOIL
Sample Condition: INTACT
Sample Received By: ML
Analyzed By: ZL

LAB NUMBI	SAMPLE ID	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL BENZENE (mg/kg)	TOTAL XYLENES (mg/kg)
ANALYSIS DATE		12/08/08	12/08/08	12/08/08	12/08/08
H16475-1	1-NORTH OUTSIDE @ 8'	<0.050	<0.050	<0.050	<0.300
H16475-2	2-EAST OUTSIDE @ 8'	<0.050	<0.050	<0.050	<0.300
H16475-3	3-SOUTH OUTSIDE @ 8'	<0.050	<0.050	<0.050	<0.300
H16475-4	4-NORTH INSIDE @ 8'	<0.050	<0.050	<0.050	<0.300
H16475-5	5-SOUTH INSIDE @ 8'	<0.050	<0.050	<0.050	<0.300
H16475-6	6-BACKGROUND @ 0-6"	<0.050	<0.050	<0.050	<0.300
Quality Control		0.056	0.054	0.054	0.164
True Value QC		0.050	0.050	0.050	0.150
% Recovery		112	108	108	109
Relative Percent Difference		5.9	7.9	12.6	5.4

METHOD: EPA SW-846 8021B

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

Chemist

12/10/08
Date

CARDINAL LABORATORIES

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

Page____ of____

Company Name:	PHOENIX ENVIRONMENTAL LLC	**BILL TO**	
Project Manager:	ALLEN HODGE	P.O. #:	
Address:	PO BOX 1856	Company:	
City:	HOBBS	State: NM Zip: 88241	Attn:
Phone #:	575-391-9685	Fax #: 575-391-9687	Address:
Project #:	API # 30-015-36025	Project Owner: MURCHISON OIL	City:
Project Name:	MUSTANG FED COM # 2		State: Zip:
Project Location:	UL-I-SEC 21-T18S-R29E		Phone #:
Sampler Name:			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 DRO GRO	TPH 418.1	BTEX	CL (Chlorides)
H16475-1	1-NORTH OUTSIDE @ 8'	G	1			X					X		12-4-08	9:00	X	X	X	X
-2	2-EAST OUTSIDE @ 8'	G	1			X					X			9:15	X	X	X	X
-3	3-SOUTH OUTSIDE @ 8'	G	1			X					X			9:30	X	X	X	X
-4	4-NORTH INSIDE @ 8'	G	1			X					X			9:45	X	X	X	X
-5	5-SOUTH INSIDE @ 8'	G	1			X					X			10:00	X	X	X	X
-6	6-BACKGROUND @ 0-6"	G	1			X					X			10:30	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.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished:	Date: 12-5-08	Received By:	Phone Result: ☐ No Add'l Phone #:
	Time: 3:53 PM		Fax Result: ☐ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS:
	Time:		

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Temp.

Sample Condition: Cool ☐ Yes ☐ No; Intact ☑ Yes ☐ No

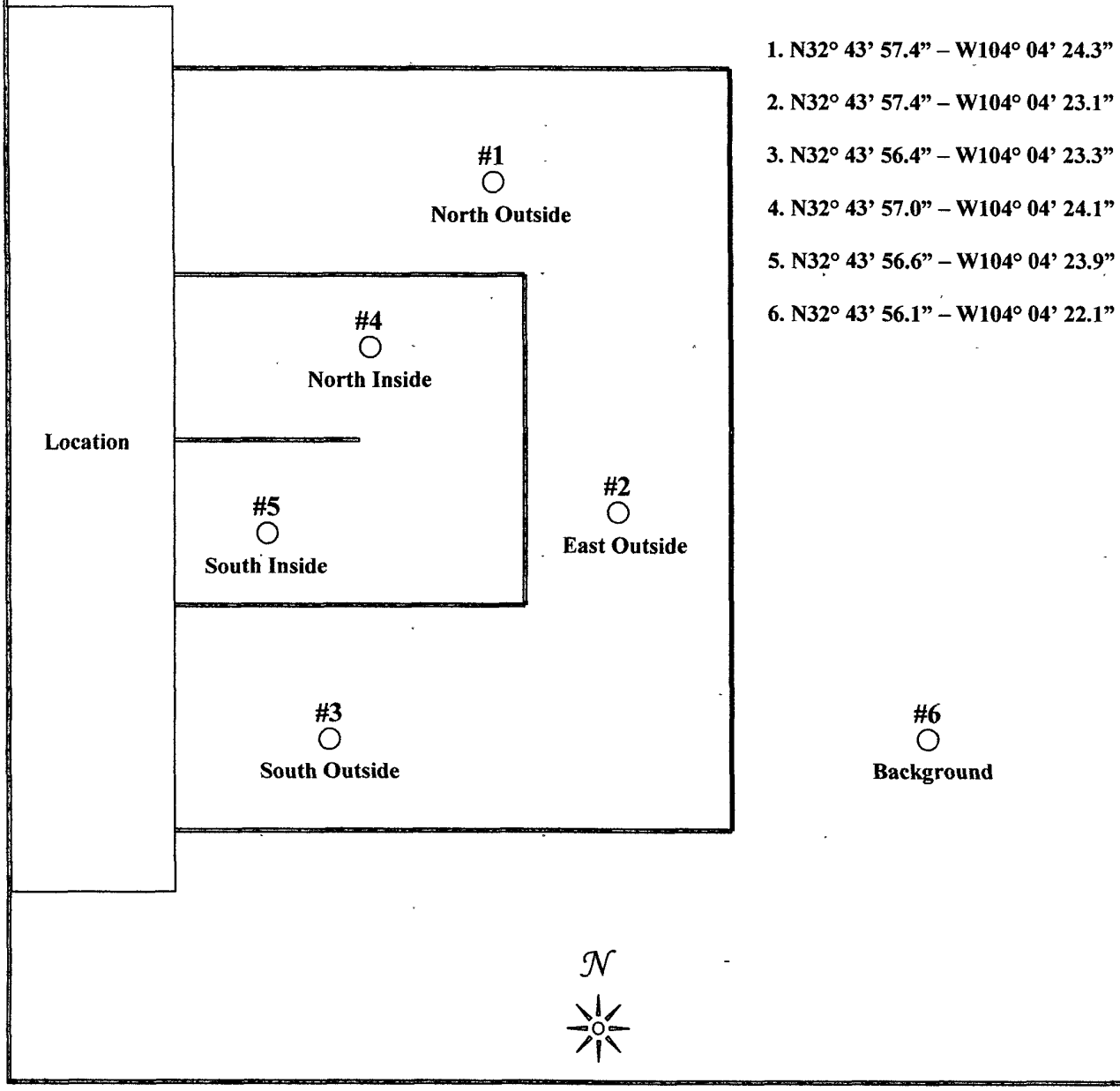
CHECKED BY: (Initials)

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

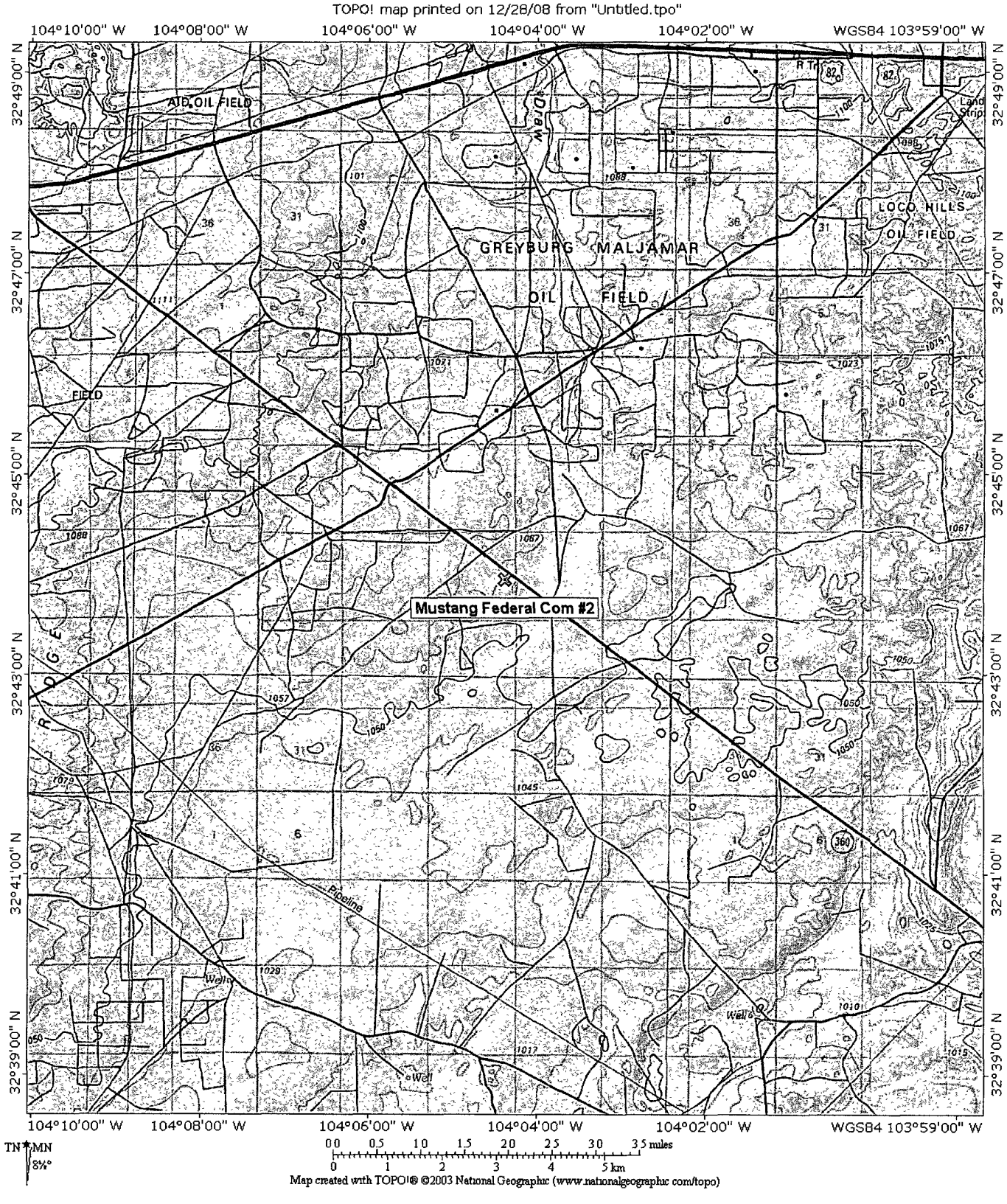
SECTION IV

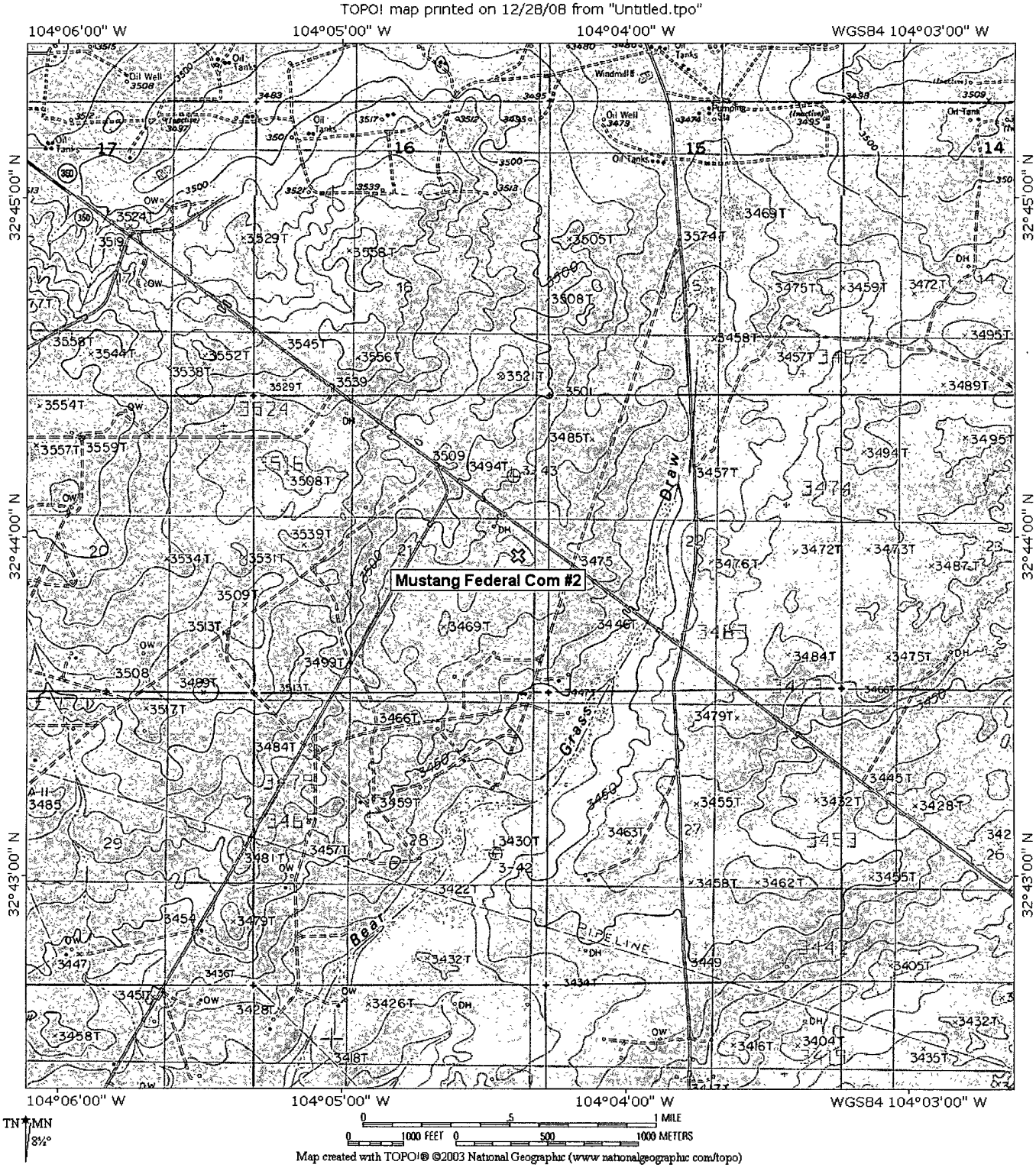
MURCHISON OIL&GAS

Mustang Fed Com. #2
UL – I Sec. 21 – T18S – R29E
API# 30 – 015 – 36025
N32° 43' 55.5" – W104° 04' 23.9" – ELV. 3470'



1. N32° 43' 57.4" – W104° 04' 24.3"
2. N32° 43' 57.4" – W104° 04' 23.1"
3. N32° 43' 56.4" – W104° 04' 23.3"
4. N32° 43' 57.0" – W104° 04' 24.1"
5. N32° 43' 56.6" – W104° 04' 23.9"
6. N32° 43' 56.1" – W104° 04' 22.1"


TOPO! map printed on 12/28/08 from "Untitled.tpo"
104°10'00" W
104°08'00" W
104°06'00" W
104°04'00" W
104°02'00" W
WGS84 103°59'00" W
32°49'00" N
32°47'00" N
32°45'00" N
32°43'00" N
32°41'00" N
32°39'00" N
ATD OIL FIELD
GREYBURG MALJAMAR
OIL FIELD
LOCO HILLS
OIL FIELD
Mustang Federal Com #2
RIDGE
Pipeline
Well
Land Strip
TN 8½° MN
0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 miles
0 1 2 3 4 5 km
Map created with TOPO!® ©2003 National Geographic (www.nationalgeographic.com/topo)


TOPO! map printed on 12/28/08 from "Untitled.tpo"
104°06'00" W
104°05'00" W
104°04'00" W
WGS84 104°03'00" W
32°45'00" N
32°44'00" N
32°43'00" N
Mustang Federal Com #2
Draw
Grass
Bear
PIPE LINE
TN MN
8½°
0 .5 1 MILE
0 1000 FEET 0 500 1000 METERS
Map created with TOPO!® ©2003 National Geographic (www.nationalgeographic.com/topo)

SECTION V

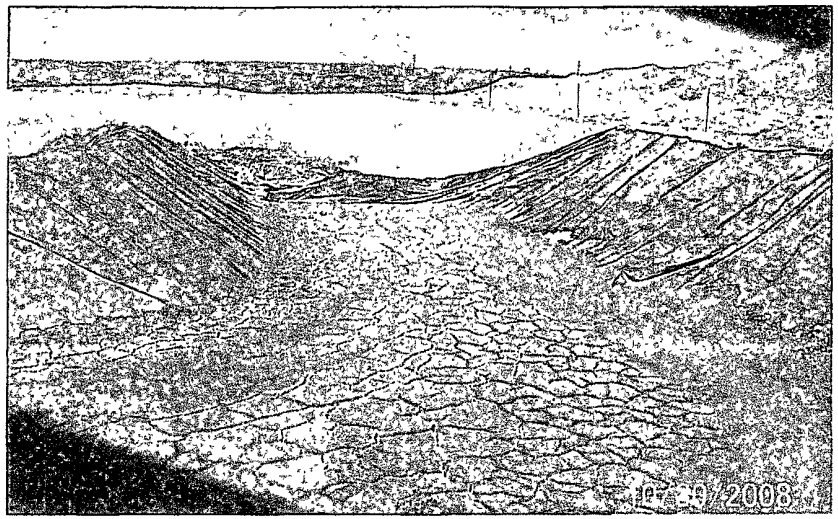


Photo #1 Beginning View of Reserve Drilling Pit

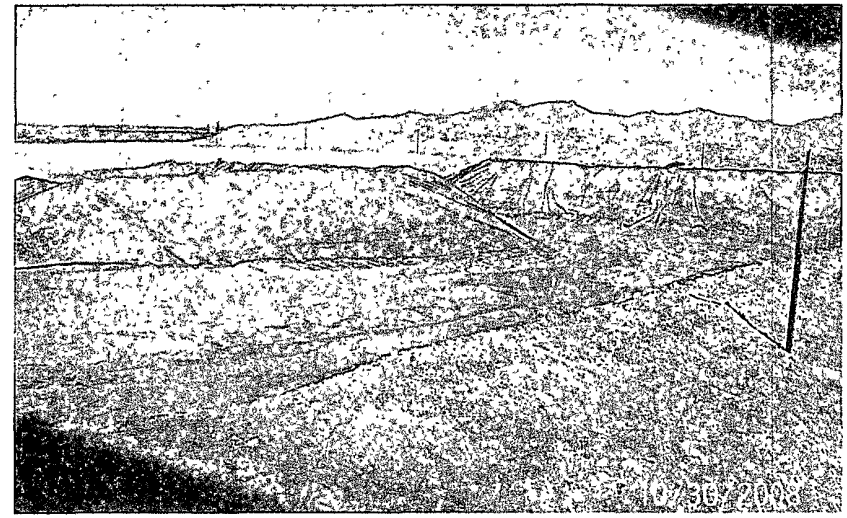


Photo #2 Beginning View of Reserve Drilling Pit

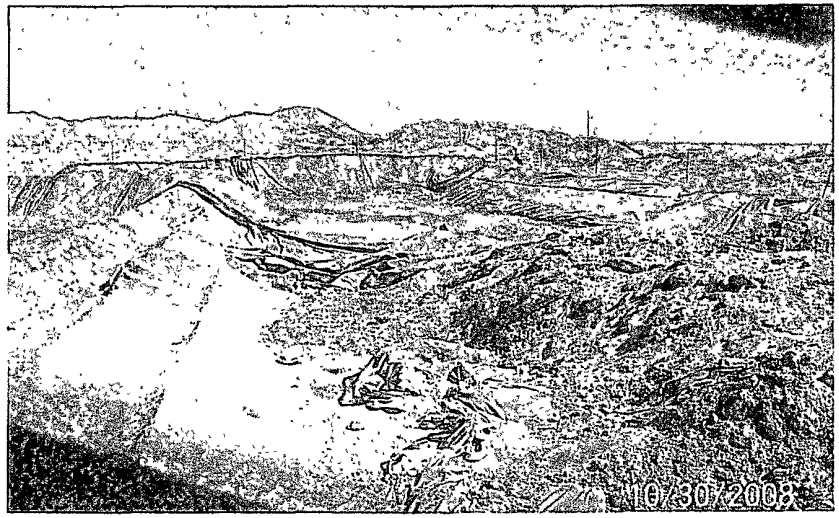


Photo #3 Beginning Clean up of Reserve Drilling Pit

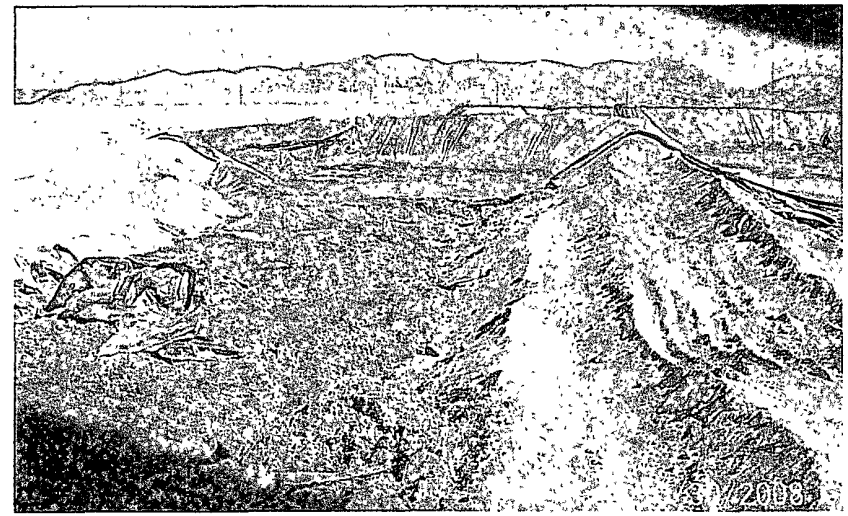


Photo #4 Beginning Clean up of Reserve Drilling Pit

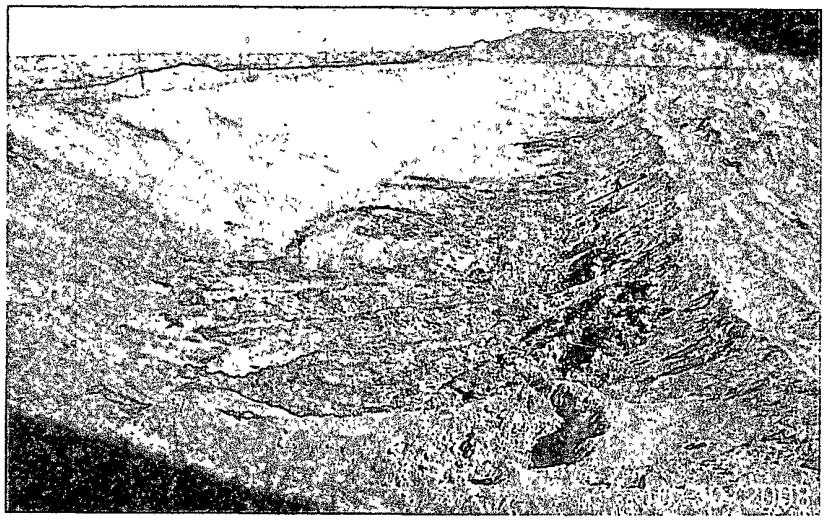


Photo #5 Cleaning Out Reserve Drilling Pit

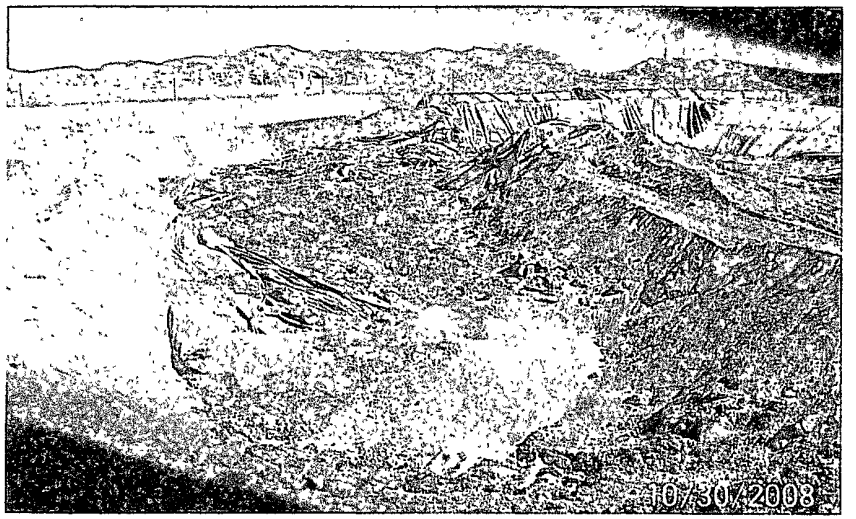


Photo #6 Cleaning Out Reserve Drilling Pit

Photo #7 Cleaning Out Reserve Drilling Pit

Photo #8 Cleaning Out Reserve Drilling Pit

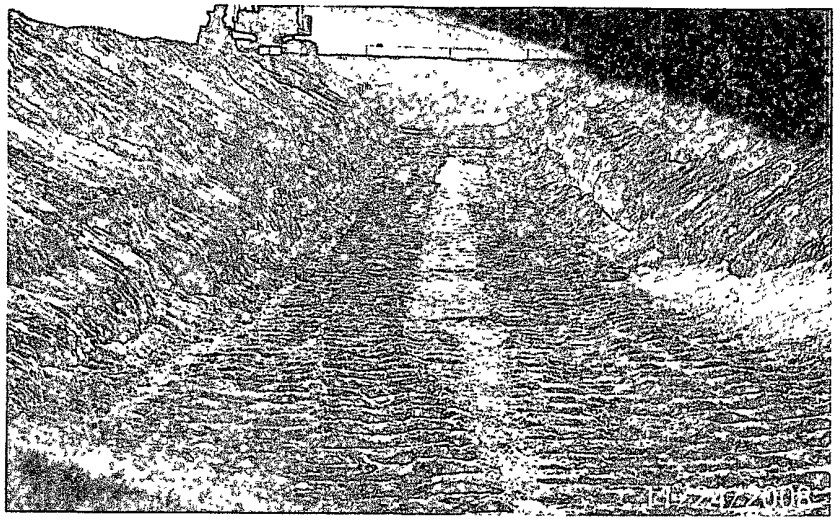


Photo #9 Cleaning Bottoms of Reserve Drilling Pit

Photo #10 Cleaned Bottoms of Reserve Drilling Pit

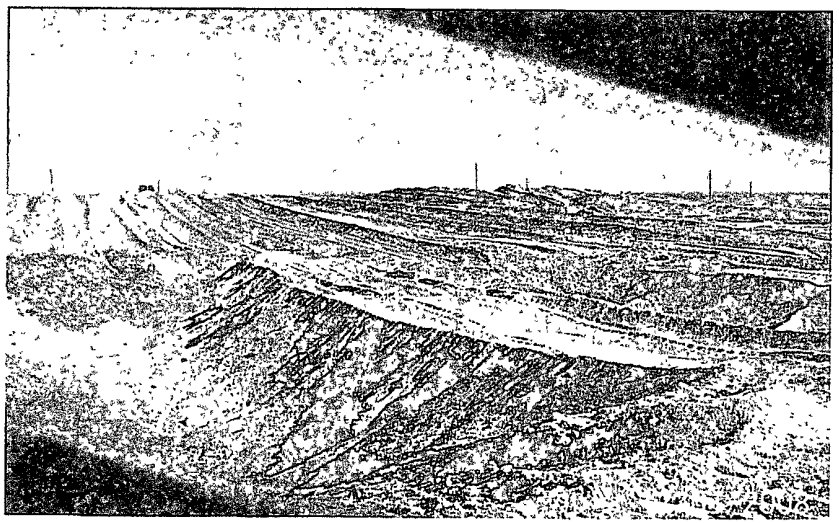


Photo #11 Backfilling Reserve Drilling Pit

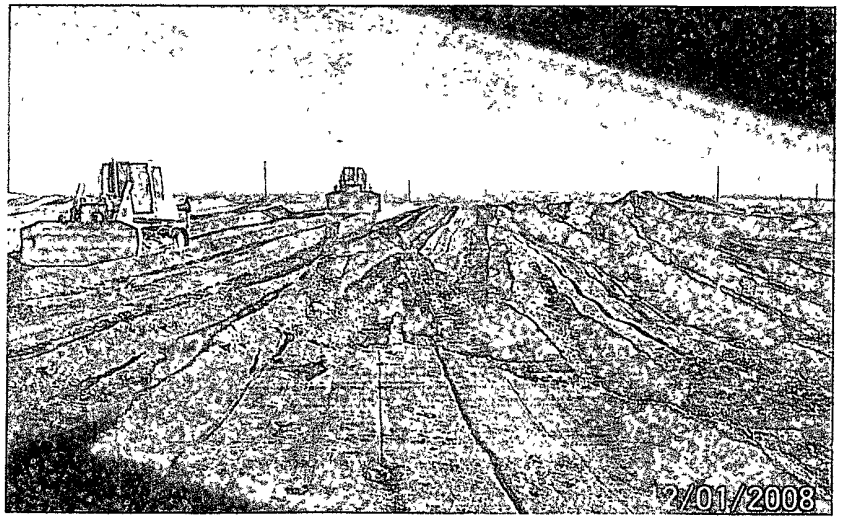


Photo #12 Backfilling Reserve Drilling Pit0

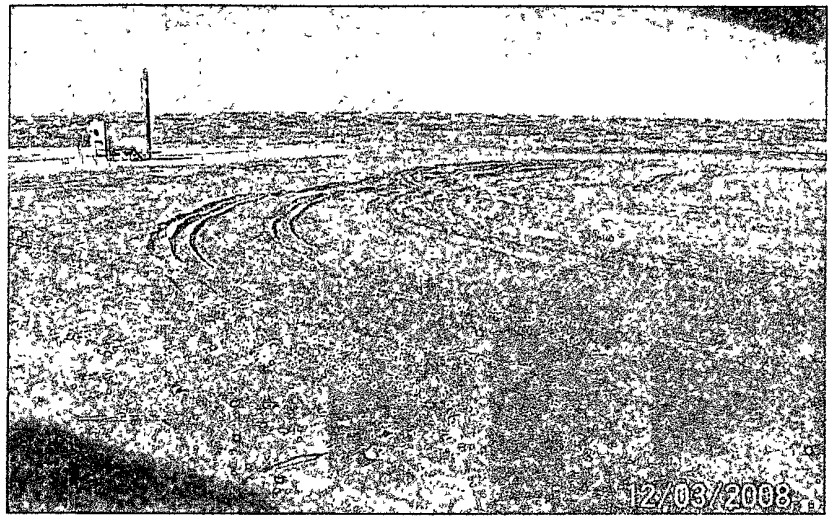


Photo #13 Dressing Location

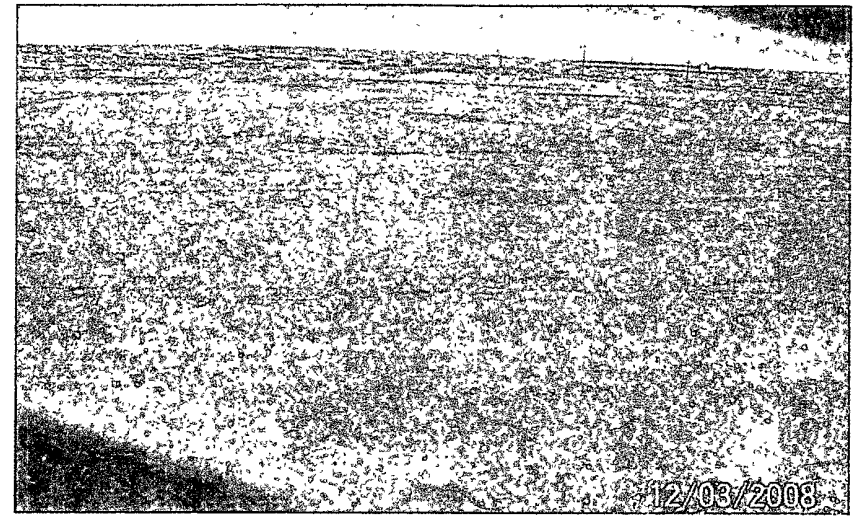


Photo #14 View of Dressed Location

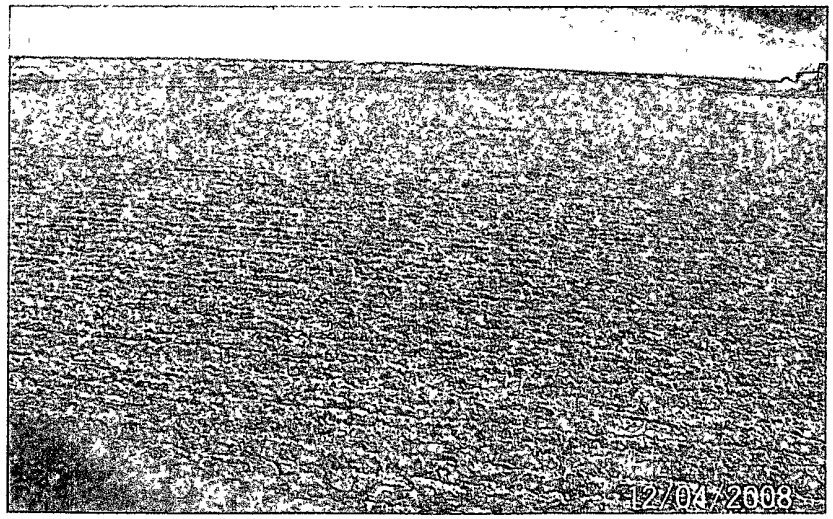


Photo #15 Reseeding with BLM #2 Seed

Photo #16 Final View of Location