



KOCH EXPLORATION COMPANY LLC

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May 3, 2013

RCVD MAY 3 '13  
OIL CONS. DIV.  
DIST. 3

Jonathan Kelly  
New Mexico Oil Conservation Division  
1000 Rio Brazos Road  
Aztec, New Mexico 87410

Dear Mr. Kelly:

Koch Exploration Company, LLC has determined that it will be more beneficial to drill our proposed Bisti 36 1 well (API #30-045-35385) with a Closed Loop System thus eliminating the need for our previously approved Pit Permit. We would like to cancel the Pit Permit 10378.

Thank you for your consideration of this request.

Sincerely,

A handwritten signature in black ink, appearing to read 'Donald Johnson'.

Donald Johnson  
Senior Field Operation Manager

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S First St., 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  
Revised August 1, 2011

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: Koch Exploration Company, LLC OGRID #: 12807  
Address: PO Box 489, Aztec, NM 87410  
Facility or well name: Bisti 36 1  
API Number: 30-045-35385 OCD Permit Number: \_\_\_\_\_  
U/L or Qtr/Qtr NW/NW Section 36 Township 25N Range 13W County: San Juan  
Center of Proposed Design: Latitude 36.3631251 Longitude 108.1772921 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: 9,974 bbl Dimensions: L 140 x W 40 x D 10

RCVD SEP 10 '12  
OIL CONS. DIV.  
DIST. 3

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 48" steel mesh field-fence (hogwire) on the bottom with a single strand of barbed wire on top. T-posts shall be installed every 12 feet and corners shall be anchored utilizing a secondary T-post. Temporary pits will be fenced at all times excluding drilling or workover operations, when the front side of the fence will be temporarily removed for operational purposes.

7

**Netting:** Subsection E of 19 15 17 11 NMAC (*Applies to permanent pits and permanent open top tanks*) *NA*

☐ 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 16 8 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application ( <i>Applies to temporary, emergency, or cavitation pits and below-grade tanks</i> ) - Visual inspection (certification) of the proposed site, Aerial photo, Satellite image	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application ( <i>Applies to permanent pits</i> ) - Visual inspection (certification) of the proposed site, Aerial photo, Satellite image	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map, Topographic map, Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within the area overlying a subsurface mine - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within an unstable area. - Engineering measures incorporated into the design, NM Bureau of Geology & Mineral Resources, USGS, NM Geological Society; Topographic map	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within a 100-year floodplain. - FEMA map	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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<sub>2</sub>S, 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

**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 identify 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

**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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 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	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within a 100-year floodplain. - FEMA map	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

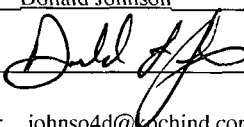
**On-Site Closure Plan Checklist:** (19.15.17.13 NMAC) **Instructions:** Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.

- ☒ 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): Donald JohnsonTitle: Operations ManagerSignature: Date: 9/8/12e-mail address: johnso4d@kochind.comTelephone: 505-334-9111

20.

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

OCD Representative Signature: Approval Date: 9/13/2012Title: Compliance Officer

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 identify 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: \_\_\_\_\_

**Attachment to Form C-144  
Temporary Pit Permit Application**

**INTRODUCTION**

Koch Exploration Company, LLC (KEC) is submitting this permit application to construct a temporary pit under the authority of 19.15.17 NMAC. This document serves as supporting documentation referenced in the attached Form C-144. This application is being submitted for the following well site:

Site Name: Bisti 36 1

Location (S/T/R): S36 / T25N / R13W

The supporting documentation contained in this C-144 attachment is organized as follows:

Section 1 – Hydrogeologic Report  
Section 2 – Siting Requirements  
Section 3 – Design and Construction Specifications  
Section 4 – Operational Requirements  
Section 5 – Closure Requirement  
References

Appendices

A – USGS 7.5 Minute Topography Map and US Fish and Wildlife Wetland Identification Map  
B – Groundwater Data (water well searches and/or depth to groundwater per cathodic bed data)  
C – Aerial Photo  
D – FEMA 100-year Floodplain Map  
E – Municipal Boundary Map  
F – Mine Map  
G – NMOCD Form C-102 and Site Layout  
H – Surface Owner Notification of On-site Closure

Regulatory citations are listed throughout this report. Regulatory citations are presented using *italic* font.

## **SECTION 1 – HYDROGEOLOGIC REPORT**

### Geology

The geology of the project area is Ojo Alamo Sandstone. The Ojo Alamo Sandstone of Paleocene age is the basal Tertiary unit of the eastern San Juan Basin. This unit is composed of sheet-like sandstone bodies interspersed with shale beds.

### Topography & Watershed

Terrain within the proposed project area is relatively flat with low-lying sandy hills. Views are generally open to wide expanses of terrain except where a sandy hill may block views. There is no discernible slope aspect within the project area; the Alamo Mesa West quadrangle map depicts a general slope to the southwest. Elevation is approximately 6300 feet.

The project area is within the Chaco Watershed. There are no washes within the project area. There are several ephemeral washes several miles away from the project area to the south and west. These washes include Hunter Wash, Teec-ni-di-tso Wash, De-na-zin Wash, and Alamo Wash, all of which drain into the Chaco River. The Chaco River is located approximately 12 miles to the south and approximately 22 miles to the west of the proposed project area. The Chaco River drains into the San Juan River approximately 29 miles to the north-northwest. Based on this data and the nearest water well (2.2 miles from location, water depth 760 feet below surface, see Appendix B) ground water is assumed to be greater than 100 feet below the bottom of the proposed temporary pit.

### Soils

The Natural Resources Conservation Service (NRCS) has mapped the soils in the proposed project area. Complete soil information is available in the NRCS's Soil Survey of San Juan County, New Mexico: Eastern Part (2009). Within the proposed project area, two soil map units are present: Shiprock fine sandy loam (2- to 5-percent slopes) and Sheppard-Mayqueen-Shiprock complex (0- to 8-percent slopes) (NRCS 2009).



## SECTION 2 – SITING REQUIREMENTS (19.15.17.10)

The project area is within the Chaco Watershed. There are no washes within the project area. There are several ephemeral washes several miles away from the project area to the south and west. These washes include Hunter Wash, Teec-ni-di-tso Wash, De-na-zin Wash, and Alamo Wash, all of which drain into the Chaco River. The Chaco River is located approximately 12 miles to the south and approximately 22 miles to the west of the proposed project area. The Chaco River drains into the San Juan River approximately 29 miles to the north-northwest.

The nearest continuously flowing water course is greater than 300 ft from the temporary pit. The nearest significant watercourse, lakebed, sinkhole, or playa lake is greater than 200 ft from temporary pit (visual inspection and Appendix A).

The nearest residence, school, or hospital is greater than 300 ft from temporary pit (visual inspection and Appendix C). There are no public or private structures, other than oil and gas wells, within 1,000 ft of the location.

There weren't any private, domestic fresh water wells identified within 500 ft of the proposed pit location and there weren't any fresh water wells or springs identified within 1,000 ft of the proposed location (visual inspection and Appendix B)

The proposed temporary pit location is not within incorporated municipal boundary or defined municipal fresh water field (Appendix E)

*(f) within 500 feet of a wetland;*

There are no wetlands within 500 ft (Visual inspection and Appendix A) of the proposed temporary pit location.

*(g) within the area overlying a subsurface mine, unless the appropriate division district office specifically approves the proposed location based upon the operator's demonstration that the temporary pit's or below-grade tank's construction and use will not compromise the subsurface integrity;*

The proposed temporary pit location is not overlying a subsurface mine (Appendix F)

*(h) within an unstable area, unless the operator demonstrates that it has incorporated engineering measures into the design to ensure that the temporary pit's or below-grade tank's integrity is not compromised; or*

The proposed temporary pit location is not within an unstable area. Engineering measures are incorporated into well pad design.

*(i) within a 100-year floodplain.*

The proposed temporary pit location is not within a 100-year floodplain (Appendix D).

- (3)** *An operator shall not locate material excavated from the pit's construction:*  
*(a) 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), unless the division approves an alternative distance based upon the operator's demonstration that surface and ground water will be protected;*

- (b) within 500 feet of a wetland; or*
- (c) within a 100-year floodplain.*

Excavated material from the pit's construction will not be located within 300 feet of a continuously flowing watercourse or within 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark) without division approval. Excavated material will not be located within 500 feet of a wetland or within 100 feet of a floodplain.

*C. An operator shall not implement an on-site closure method:*

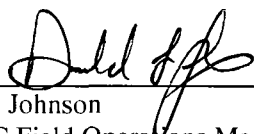
- (1) where ground water is less than 50 feet below the bottom of the buried waste;*
- (2) where ground water is between 50 and 100 feet below the bottom of the buried waste, unless the operator buries the waste in-place and the treated or stabilized waste, which shall not be combined with soil or other material at a mixing ratio of more than 3:1 soil or other material to waste, does not exceed the criteria in Subparagraph (c) of Paragraph (2) of Subsection F of 19.15.17.13 NMAC;*
- (3) where ground water is more than 100 feet below the bottom of the buried waste, unless the operator buries the waste in-place and the treated or stabilized waste, which shall not be combined with soil or other material at a mixing ratio of more than 3:1 soil or other material to waste, does not exceed the criteria in Subparagraph (d) of Paragraph (2) of Subsection F of 19.15.17.13 NMAC;*
- (4) where ground water is more than 100 feet below the bottom of the buried waste, unless the operator buries the waste in a trench and the treated or stabilized waste, which shall not be combined with soil or other material at a mixing ratio of more than 3:1 soil or other material to waste, does not exceed the criteria listed in Subparagraph (c) of Paragraph (3) of Subsection F of 19.15.17.13 NMAC;*
- (5) 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), unless the division approves an alternative distance based upon the operator's demonstration that surface and ground water will be protected;*
- (6) within 300 feet from a permanent residence, school, hospital, institution or church in existence at the time of initial application;*
- (7) within 500 feet of a private, domestic fresh water well or spring used by less than five households for domestic or stock watering purposes or within 1000 feet of any other fresh water well or spring, existing at the time the operator files the application for exception;*
- (8) 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, unless the municipality specifically approves;*
- (9) within 500 feet of a wetland;*
- (10) within the area overlying a subsurface mine, unless the division specifically approves the proposed location based upon the operator's demonstration that subsurface integrity will not be compromised;*
- (11) within an unstable area, unless the operator demonstrates that it has incorporated engineering measures into the design to ensure that the on-site closure method will prevent contamination of fresh water and protect public health and the environment; or*
- (12) within a 100-year floodplain.*

It is KECs intention to propose on-site closure for temporary pits. If any of the siting criteria in 19.15.17.10(C) preclude on-site closure, KEC will either implement off-site disposal of the pit contents (as described in this application) or submit an alternative closure method.

### Visual Inspection for Siting Criteria Certification Statement

I hereby certify that the visual observations referenced in Section 2 and restated below are true based on visual observation.

- The nearest continuously flowing water course is greater than 300 ft from tank. The nearest significant watercourse, lakebed, sinkhole, or playa lake is greater than 200 ft from tank.
- The nearest residence, school, or hospital is greater than 300 ft from tank (visual inspection and Appendix C). There are no public or private structures, other than other gas wells, within 1,000 ft of the location.
- Nearest private, domestic fresh water well is greater than 500 ft from tank and any other fresh water well or spring > 1,000 ft from tank
- There are no wetlands within 500 ft

  
Don Johnson  
KEC Field Operations Manager

9/18/12  
Date

### SECTION 3 DESIGN AND CONSTRUCTION SPECIFICATIONS (19.15.17.11)

*A. General specifications. An operator shall design and construct a pit, closed-loop system, below-grade tank or sump to contain liquids and solids and prevent contamination of fresh water and protect public health and the environment.*

KEC will design and construct a properly sized and approved temporary pit which will contain liquids and solids and should prevent contamination of fresh water and protect public health and environment.

*B. Stockpiling of topsoil. Prior to constructing a pit or closed-looped system, except a pit constructed in an emergency, the operator shall strip and stockpile the topsoil for use as the final cover or fill at the time of closure.*

Prior to constructing the pit, topsoil will be stockpiled in the construction zone for later use in restoration.

*C. Signs. The operator shall 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, closed-loop system or below-grade tank, unless the pit, closed-loop system or below-grade tank is located on a site where there is an existing well, signed in compliance with 19.15.3.103 NMAC, that is operated by the same operator. The operator shall post the sign in a manner and location such that a person can easily read the legend. The sign shall 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.*

KEC will sign the well location in compliance with 19.15.3.103 NMAC.

**D. Fencing.**

(1) *The operator shall fence or enclose a pit or below-grade tank in a manner that prevents unauthorized access and shall maintain the fences in good repair. Fences are not required if there is an adequate surrounding perimeter fence that prevents unauthorized access to the well site or facility, including the pit or below-grade tank. During drilling or workover operations, the operator is not required to fence the edge of the pit adjacent to the drilling or workover rig.*

(2) *The operator shall fence or enclose a pit or below-grade tank located within 1000 feet of a permanent residence, school, hospital, institution or church with a chain link security fence, at least six feet in height with at least two strands of barbed wire at the top. The operator shall ensure that all gates associated with the fence are closed and locked when responsible personnel are not on-site. During drilling or workover operations, the operator is not required to fence the edge of the temporary pit adjacent to the drilling or workover rig.*

(3) *The operator shall fence any other pit or below-grade tank 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. The appropriate division district office may approve an alternative to this requirement if the operator demonstrates that an alternative provides equivalent or better protection. The appropriate division district office may impose additional fencing requirements for protection of wildlife in particular areas.*

*Per the Memorandum of Understanding (MOU) Between the NMOCD and the Bureau of Land Management's Farmington Field Office (FFO) (signed by NMOCD on May 4, 2009): Where SMA pit fencing requirements meet or exceed those required by Part 17, the SMA fencing requirements shall be approved upon a showing that the SMA requirements will provide equal or greater fencing performance to those required by Part 17. Operators will be required to request administrative approval from the Aztec NMOCD District Office for an alternative fencing design on a case-by-case basis using NMOCD Form C-144.*

The temporary pit is not within 1,000 feet of a permanent residence, school, hospital, institution, or church.

KEC shall construct all new fences around the temporary pit utilizing 48" steel mesh field-fence (hogwire) on the bottom with a single strand of barbed wire on top. T-posts shall be installed approximately every 12 feet and corners shall be anchored utilizing a secondary T-post. Temporary pits will be fenced at all times excluding drilling or workover operations, when the front side of the fence will be temporarily removed for operational purposes.

**E. Netting.** *The operator shall ensure that a permanent pit or a permanent open top tank is screened, netted or otherwise rendered non-hazardous to wildlife, including migratory birds. Where netting or screening is not feasible, the operator shall on a monthly basis inspect for, and within 30 days of discovery, report discovery of dead migratory birds or other wildlife to the appropriate wildlife agency and to the appropriate division district office in order to facilitate assessment and implementation of measures to prevent incidents from reoccurring.*

Not applicable

*F. Temporary pits. The operator shall design and construct a temporary pit 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.*

KEC will design and construct a properly sized and approved temporary pit which will contain liquids and solids and should prevent contamination of fresh water and protect public health and environment.

*(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.*

The Temporary pit will be installed with 2:1 slopes with an unyielding base and be free of rocks, debris, sharp edges or irregularities to prevent rupture of the liner. Where any of these soil characteristics exists, then a geotextile pad will be installed under the liner to help prevent rupture when warranted.

*(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.*

Temporary pits will be lined with a 20-mil, string reinforced, LLDPE liner, complying with EPA SW-846 method 9090A requirements.

*(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.*

KEC will minimize liner seams and orient them up and down, not across a slope. Factory seams will be used whenever possible. KEC will ensure all field seams are welded by qualified personnel. Field seams will be overlapped four to six inches and will be oriented parallel to the line of maximum slope. KEC will minimize the number of field seams in corners and irregularly shaped areas.

*(5) Construction shall avoid excessive stress-strain on the liner.*

The liner will be installed to avoid excessive stress-strain

*(6) Geotextile is required under the liner where needed to reduce localized stress-strain or protuberances that may otherwise compromise the liner's integrity.*

Geotextile will be installed beneath the liner when rocks, debris, sharp edges or irregularities cannot be avoided.

*(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.*

All liners will be anchored in the bottom of a compacted earth-filled trench at least 18 inches deep.

*(8) The operator shall 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.*

The liner shall be protected from any fluid force or mechanical damage through the use of mud pit slides, a manifold system, or additional materials to protect liner from fluid forces or mechanical damage.

*(9) The operator shall design and construct a temporary pit to prevent run-on of surface water. A berm, ditch, proper sloping or other diversion shall surround a temporary pit to prevent run-on of surface water. During drilling operations, the edge of the temporary pit adjacent to the drilling or workover rig is not required to have run-on protection if the operator is using the temporary pit to collect liquids escaping from the drilling or workover rig and run-on will not result in a breach of the temporary pit.*

A berm, ditch, proper sloping or other diversion shall be installed around the temporary pit to prevent run-on of surface water.

*(10) The volume of a temporary pit shall not exceed 10 acre-feet, including freeboard.*

The temporary pit volume shall not exceed 10 acre-feet, including freeboard.

*(11) The part of a temporary pit used to vent or flare gas during a drilling or workover operation that is designed to allow liquids to drain to a separate temporary pit does not require a liner, unless the appropriate division district office requires an alternative design in order to protect surface water, ground water and the environment. The operator shall not allow freestanding liquids to remain on the unlined portion of a temporary pit used to vent or flare gas.*

KEC shall not allow freestanding liquids to remain on the unlined portion of a temporary pit used to vent or flare gas.

**G.**      *Permanent pits*

Not applicable.

**H.**      *Closed-loop systems.*

Not applicable

**I. Below-grade tanks.**

Not applicable

**J. On-site trenches for closure.**

Not applicable

**SECTION 4 OPERATIONAL REQUIREMENTS (19.15.17.12)**

**A. General specifications.** *An operator shall maintain and operate a pit, closed-loop system, below-grade tank or sump in accordance with the following requirements.*

**(1)** *The operator shall operate and maintain a pit, closed-loop system, below-grade tank or sump 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.*

KEC will operate and maintain a temporary pit to contain liquids and solids and maintain the integrity of the liner and liner system to prevent contamination of fresh water and protect public health and environment.

**(2)** *The operator shall recycle, reuse or reclaim or 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.*

KEC will conserve drilling fluids by transferring liquids to pits ahead of the rigs whenever possible. All other drilling fluids will be disposed at Basin Disposal Inc., OCD Permit NM-01-005, or other OCD approved facility.

**(3)** *The operator shall not discharge into or store any hazardous waste in a pit, closed-loop system, below-grade tank or sump.*

KEC will not discharge or store hazardous waste in the temporary pit.

**(4)** *If any pit liner's integrity is compromised, or if any penetration of the liner occurs above the liquid's surface, then the operator shall notify the appropriate division district office within 48 hours of the discovery and repair the damage or replace the liner.*

If any pit liner's integrity is compromised, or if any penetration of the liner occurs above the liquid's surface, then KEC shall notify the Aztec Division office by phone or email within 48 hours of the discovery and repair the damage or replace the liner.

**(5)** *If a pit, below-grade tank, closed-loop system or sump develops a leak, or if any penetration of the pit liner, below-grade tank, closed-loop system or sump occurs below the liquid's surface, then the operator shall 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, below-grade tank, closed-loop system or sump.*

If a leak develops below the liquid's level, KEC shall remove all liquids above the damaged liner within

48 hours and repair the damage or replace the liner. KEC shall notify the Aztec Division office by phone or email within 48 hours of discovery for leaks that are less than 25 barrels. KEC shall notify the Aztec Division office as required pursuant to Subsection B of 19.15.3.116 NMAC shall be reported within twenty-four (24) hours of discovery of leaks greater than 25 barrels. In addition, immediate verbal notification pursuant to Subsection B, Paragraph (1), and Subparagraph (d) of 19.15.3.116 NMAC shall be reported to the division's Environmental Bureau Chief.

*(6) The injection or withdrawal of liquids from a pit shall 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.*

The liner shall be protected from any fluid force or mechanical damage through the use of mud pit slides, a manifold system, or additional materials to protect liner from fluid forces or mechanical damage.

*(7) The operator shall operate and install a pit, below-grade tank or sump to prevent the collection of surface water run-on.*

The pit shall be protected from run-off by constructing and maintaining diversion ditches around the location or around the perimeter of the pit.

*(8) The operator shall install, or maintain on site, an oil absorbent boom or other device to contain and remove oil from a pit's surface.*

KEC shall immediately remove any visible layer of oil from the surface of the temporary pit after cessation of a drilling or workover operation. Oil absorbent booms will be utilized to contain and remove oil from the pit's surface. An oil absorbent boom will be stored on-site until closure of pit.

**B.** *Temporary pits. An operator shall maintain and operate a temporary pit in accordance with the following additional requirements.*

*(1) Only fluids used or generated during the drilling or workover process may be discharged into a temporary pit. The operator shall maintain a temporary pit free of miscellaneous solid waste or debris. 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. Immediately after cessation of a drilling or workover operation, the operator shall remove any visible or measurable layer of oil from the surface of a drilling or workover pit.*

Only fluids generated during the drilling or workover process may be discharged into the temporary pit.

*(2) The operator shall maintain at least two feet of freeboard for a temporary pit.*

Two feet of freeboard will be maintained in the temporary pit.

*(3) The operator shall inspect a temporary pit containing drilling fluids at least daily while the drilling or workover rig is on-site. Thereafter, the operator shall inspect the temporary pit weekly so long as liquids remain in the temporary pit. The operator shall maintain a log of such inspections and make the log available for the appropriate division district office's review upon request. The operator shall file a copy of the log with the appropriate division district office when the operator closes the temporary pit.*

During drilling operations, KEC will inspect the temporary pit at least once daily to ensure compliance



with this plan. Inspections will be logged in the IADC reports or on supervisor's report (morning report, planner, etc). KEC will file this log with the Aztec Division office upon closure of the pit.

After drilling operations, KEC will inspect the temporary pit weekly so long as liquids remain in the temporary pit. A log of the inspections will be stored at KEC's Aztec office and will be filed with the Aztec Division office upon closure of the pit.

*(4) The operator shall remove all free liquids from a temporary pit within 30 days from the date that the operator releases the drilling or workover rig. The operator shall note the date of the drilling or workover rig's release on form C-105 or C-103 upon well or workover completion. The appropriate division district office may grant an extension of up to three months.*

KEC shall remove all free liquids from a temporary pit within 30 days from the date the operator releases the drilling rig.

*(5) The operator shall remove any liquids from the temporary pit used for cavitation within 48 hours after completing cavitation. The operator may request and receive additional time to remove the liquids from the temporary pit used for cavitation if the operator demonstrates to the appropriate division district office's satisfaction that it is not feasible to access the location with 48 hours.*

KEC shall remove all free liquids from a cavitation pit within 48 hours after completing cavitation. KEC may request additional time to remove liquids from the Aztec Division office if it is not feasible to remove liquids within 48 hours.

**C. Permanent pits.**

Not applicable

**D. Below-grade tanks.**

Not applicable

**E. Sumps.**

Not applicable

**SECTION 5 CLOSURE REQUIREMENTS (19.15.17.13)**

**A.** *Time requirements for closure. An operator shall close a pit, closed-loop system or below-grade tank within the time periods provided in 19.15.17.13 NMAC, or by an earlier date that the division requires because of imminent danger to fresh water, public health or the environment.*

KEC will close the temporary pit within the time periods stated below, or by an earlier date if stipulated by the NMOCD.

*(1) - (5) Not applicable*

*(6) An operator shall close any other permitted temporary pit within six months from the*

*date that the operator releases the drilling or workover rig. The appropriate division district office may grant an extension not to exceed three months.*

KEC will close the temporary pit within six months of rig release date, unless granted an extension by the district office.

(7) - (8) Not applicable

**B.** *Closure methods for temporary pits. The operator of a temporary pit shall 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 one of the following methods.*

Liquids will be removed from temporary pit prior to implementing a closure method and disposed in a division-approved facility (Basin Disposal, OCD Permit NM-01-0005 or other OCD approved facility).

(1) *Waste excavation and removal.*

KEC intends to use the on-site burial method (19.15.17.13(B)(2) when the site is in compliance with the requirements of Subsection C of 19.15.17.10 NMAC (siting criteria) and pit contents don't exceed the analytical parameters contained in 19.15.17.13(F)(2)(c) or (d). If compliance with either of these regulations can't be achieved, KEC will remove the waste material in accordance with 19.15.17.13(B)(1)(a)-(d).

(a) *The operator shall close the temporary pit by excavating all contents and, if applicable, synthetic pit liners and transferring those materials to a division-approved facility.*

If the on-site burial method can't be used, the liner will be removed and disposed in the San Juan Regional Landfill in accordance with 19.15.35.8(C)(1)(m) (or other division approved facility). Liquids and sludge will be removed from the temporary pit and disposed in a division-approved facility (Liquids: Basin Disposal, OCD Permit NM-01-0005 or other OCD approved facility; Sludge: JFJ Landfarm, LLC OCD Permit No. 10, or other OCD approved facility).

(b) *The operator shall test the soils beneath the temporary pit to determine whether a release has occurred.*

If the on-site burial method can't be used, KEC will conduct soil testing to determine if a release has occurred.

(i) *For temporary pits where ground water is between 50 and 100 feet below the bottom of the temporary pit or for cavitation pits allowed pursuant to Subparagraph (a) of Paragraph (1) of Subsection A of 19.15.17.10 NMAC, 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 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 EPA method that the division approves, does not exceed 50 mg/kg; TPH, as determined by EPA SW-846 method 418.1 or other EPA method that the division approves, does not exceed 2500 mg/kg; the GRO and DRO combined fraction, as determined by EPA SW-846 method 8015M, does not exceed 500 mg/kg; and chlorides, as determined by EPA method 300.1, do*

not exceed 500 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.

Not applicable.

(ii) For temporary pits 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 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 shall notify the division of its results on form C-141. The division may require additional delineation upon review of the results.

Where groundwater is more than 100 feet below the bottom of the temporary pit, a five-point composity grab sample will be collected. In addition, grab samples will be collected from any area that is wet, discolored, or showing other evidence of a release and analyzed to ensure the paramters below aren't exceeded:

Benzene	EPA SW-846 8021 B or 8260B	0.2 mg/kg
BTEX	EPA SW-846 8021 B or 8260B	50 mg/kg
TPH	EPA SW-846, 418.1	2500 mg/kg
GRO/DRO	EPA SW-846 8015M	500 mg/kg
Chlorides	EPA 300.1	Greater of 1,000 mg/kg or background

(c) If the operator or the division determines that a release has occurred, then the operator shall comply with 19.15.3.116 NMAC and 19.15.1.19 NMAC, as appropriate.

If any of the parameter thresholds for any single sample collected are exceeded, KEC will comply with 19.15.3.116 and 19.15.1.19.

(d) If the sampling program demonstrates that a release has not occurred or that any release does not exceed the concentrations specified in Subparagraph (b) of Paragraph (1) of Subsection B of 19.15.17.13 NMAC, then the operator shall 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 shall comply with Subsections G, H and I of 19.15.17.13 NMAC.

If sampling demonstrates that a release hasn't occurred, the pit area will be backfilled with compacted, non-waste containing, earthen material. A minimum of four feet of cover shall be achieved and the cover shall include one foot of suitable material to establish vegetation at the site, or the background thickness of topsoil, whichever is greater.

(2) On-site burial. The operator shall demonstrate and comply with the siting

*requirements in Subsection C of 19.15.17.10 NMAC and the closure requirements and standards of Subsection F of 19.15.17.13 NMAC if the proposed closure method of a temporary pit involves on-site burial.*

KEC will employ on-site burial where the siting criteria requirements of Subsection C of 19.15.17.10 NMAC are met. KEC will comply with the closure requirements and standards of Subsection F of 19.15.17.13 NMAC (On-site closure methods).

**(3) Alternative closure methods.**

Not applicable. KEC intends to use the on-site burial method when the site is in compliance with the requirements of Subsection C of 19.15.17.10 NMAC (siting criteria) and

**C. – E.**

Not applicable

**F. On-site closure methods.** *The following closure requirements and standards apply if the operator proposes a closure method for a drying pad associated with a closed-loop system or a temporary pit pursuant to Paragraph (2) of Subsection D of 19.15.17.13 NMAC or Paragraph (2) of Subsection B of 19.15.17.13 NMAC that involves on-site burial, or an alternative closure method pursuant to Paragraph (3) of Subsection D of 19.15.17.13 NMAC or Paragraph (3) of Subsection B of 19.15.17.13 NMAC and Subsection B of 19.15.17.15 NMAC.*

**(1) General requirements.**

**(a)** *Any proposed on-site closure method shall comply with the siting criteria specified in Subsection C of 19.15.17.10 NMAC.*

The temporary pit will comply with the siting criteria specified in Subsection C of 19.15.17.10 NMAC.

**(b)** *The operator shall provide the surface owner notice of the operator's proposal of an on-site closure method. The operator shall attach the proof of notice to the permit application.*

KEC shall provide the surface owner notice of proposal of an on-site closure method. KEC shall attach the proof of notice to the permit application.

Alternatively, surface owner notification on federal surface lands are deemed satisfied upon a showing by KEC that the BLM has received and approved the Application for Permit to Drill (APD) or the Sundry Notice of Intent describing the actions requiring surface owner notification (Memorandum of Understanding Between the NMOCD and BLM Farmington Field Office).

**(c)** *The operator shall comply with the closure requirements and standards of Paragraphs (2) and (3), as applicable, of Subsection F of 19.15.17.13 NMAC if the proposed closure method for a drying pad associated with a closed-loop system or for a temporary pit involves on-site burial pursuant to Paragraph (2) of Subsection D of 19.15.17.13 NMAC or Paragraph (2) of Subsection B of 19.15.17.13 NMAC, or involves an alternative closure method pursuant to Paragraph (3) of Subsection D of 19.15.17.13 NMAC or Paragraph (3) of Subsection B of 19.15.17.13 NMAC and Subsection B of 19.15.17.15 NMAC.*

KEC will comply with the closure requirements and standards of Paragraphs (2) and (3), as applicable, of Subsection F of 19.15.17.13 NMAC.

*(d) The operator shall place a steel marker at the center of an on-site burial. The steel marker shall be not less than four inches in diameter and shall be cemented in a three-foot deep hole at a minimum. The steel marker shall 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 shall be welded, stamped or otherwise permanently engraved into the metal of the steel marker. A person shall not build permanent structures over an on-site burial without the appropriate division district office's written approval. A person shall not remove an on-site burial marker without the division's written permission.*

KEC will place a steel marker at the center of the on-site burial location. The marker will be not less than four inches in diameter, shall be cemented in a three-foot deep hole at a minimum, shall extend at least four feet above mean ground level, shall extend at least three feet below ground level, or a steel marker plate not less than 12" x 12" and placed on the center of the on-site burial location, and the following information will be permanently engraved into the metal of the steel marker: 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. KEC shall not build over the marker or remove the marker without division written permission.

Alternatively, if pad size constraints make marker placement impractical, KEC will document the pit location using GPS measurements and provide these coordinates to the NMOCD at the time of pit closure. A marker will be installed upon abandonment of the associated well bore (Memorandum of Understanding Between the NMOCD and BLM Farmington Field Office).

*(e) The operator shall report the exact location of the on-site burial on form C-105 filed with the division*

KEC will report the location of the on-site burial to the division field office on form C-105.

*(f) The operator shall file a deed notice identifying the exact location of the on-site burial with the county clerk in the county where the on-site burial occurs.*

KEC will file a deed notice identifying the exact location of the on-site burial with the county clerk in the county where the on-site burial occurs.

**(2) In-place burial.**

*(a) Where the operator meets the siting criteria specified in Paragraphs (2) or (3) of Subsection C of 19.15.17.10 NMAC and the applicable waste criteria specified in Subparagraphs (c) or (d) of Paragraph (2) of Subsection F of 19.15.17.13 NMAC, an operator may use in-place burial (burial in the existing temporary pit) for closure of a temporary pit or bury the contents of a drying pad associated with a closed-loop system in a temporary pit that the operator constructs in accordance with Paragraphs (1) through (6) and (10) of Subsection F of 19.15.17.11 NMAC for closure of a drying pad associated with a closed loop system.*

KEC will use in-place burial where the siting criteria specified in Paragraphs (2) or (3) of Subsection C of 19.15.17.10 NMAC and the applicable waste criteria specified in Subparagraphs (c) or (d) of Paragraph (2) of Subsection F of 19.15.17.13 NMAC are met.

*(b) Prior to closing an existing temporary pit or to placing the contents from a drying pad associated with a closed-loop system into a temporary pit that the operator constructs for disposal, the operator shall stabilize or solidify the contents to a bearing capacity sufficient to support the temporary pit's final cover. The operator shall not mix the contents with soil or other material at a mixing ratio of greater than 3:1, soil or other material to contents.*

Pit contents shall be mixed with non-waste containing, earthen material in order to achieve the solidification process. The solidification process will be accomplished using a combination of natural drying and mechanically mixing. Pit contents will be mixed with non-waste, earthen material to a consistency that is deemed safe and stable. The mixing ratio shall not exceed 3 parts clean soil to 1 part pit contents.

*(c) Where ground water will be between 50 and 100 feet below the bottom of the buried waste, 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 the contents of a temporary pit after treatment or stabilization, if treatment or stabilization is required, to demonstrate that benzene, as determined by EPA SW-846 method 8021 B or 8260B, does not exceed 0.2 mg/kg; total BTEX, as determined by EPA SW-846 method 8021 B or 8260B, does not exceed 50 mg/kg; TPH, as determined by EPA SW-846 method 418.1 or other EPA method approved that the division approves, does not exceed 2500 mg/kg; the GRO and DRO combined fraction, as determined by EPA SW-846 method 8015M, does not exceed 500 mg/kg; and chlorides, as determined by EPA method 300.1, do not exceed 500 mg/kg or the background concentration, whichever is greater. 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.*

Not applicable

*(d) Where the ground water will be more than 100 feet below the bottom of the buried waste, 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 the contents of a temporary pit after treatment or stabilization, if treatment or stabilization is required, 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 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.*

Where groundwater is more than 100 feet below the bottom of the buried waste, a five point composite sample of the temporary pit contents after treatment or stabilization (if required) will be collected to demonstrate that the following parameters aren't exceeded:

Benzene	EPA SW-846 8021 B or 8260B	0.2 mg/kg
---------	----------------------------	-----------

BTEX	EPA SW-846 8021 B or 8260B	50 mg/kg
TPH	EPA SW-846, 418.1	2500 mg/kg
GRO/DRO	EPA SW-846 8015M	500 mg/kg
Chlorides	EPA 300.1	Greater of 1,000 mg/kg or background

*(e) Upon closure of a temporary pit, or closure of a temporary pit that the operator constructs for burial of the contents of a drying pad associated with a closed-loop system, the operator shall cover the geomembrane lined, filled, 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 Subsections G, H and I of 19.15.17.13 NMAC.*

Upon completion of solidification and testing standards being passed, the pit area will be backfilled with compacted, non-waste containing, earthen material. A minimum of four feet of cover shall be achieved and the cover shall include one foot of suitable material to establish vegetation at the site, or the background thickness of topsoil, whichever is greater. If standard testing fails KEC will dig and haul all contents pursuant to 19.15.17.13(B)(1). After doing such, confirmation sampling will be conducted to ensure a release has not occurred.

*(f) For burial of the contents from a drying pad associated with a closed-loop system, the operator shall construct a temporary pit, in accordance with Paragraphs (1) through (6) and (10) of Subsection F of 19.15.17.10 NMAC, within 100 feet of the drying pad associated with a closed-loop system, unless the appropriate division district office approves an alternative distance and location. The operator shall use a separate temporary pit for closure of each drying pad associated with a closed-loop system.*

Not applicable

*(3) On-site trench burial.*

Not applicable

**G. Reclamation of pit locations, on-site burial locations and drying pad locations.**

*(I) Once the operator has closed a pit or trench or is no longer using a drying pad, below-grade tank or an area associated with a closed-loop system, pit, trench or below-grade tank, the operator shall reclaim the pit location, drying pad location, below-grade tank location or trench location and all areas associated with the closed-loop system, pit, trench or below-grade tank including associated access roads to a safe and stable condition that blends with the surrounding undisturbed area. The operator shall 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, 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.*

The pit area will be reclaimed to a safe and stable condition that blends with the surrounding undisturbed area. Recontouring of the temporary pit will match fit, shape, line, form and texture of the surrounding. Reshaping will include drainage control, prevent ponding, and prevent erosion. Natural drainages will be unimpeded and water bars and/or silt traps will be placed in areas where needed to prevent erosion on a large scale. Final recontour shall have a uniform appearance with smooth surface, fitting the natural landscape. A soilcover will be installed per Subsection H of 19.15.17.13 and revegetation will be done in

accordance with Subsection I of 19.15.17.13.

*(2) The operator may propose an alternative to the re-vegetation requirement if the operator demonstrates that the proposed alternative effectively prevents erosion, and protects fresh water, human health and the environment. The proposed alternative shall be agreed upon by the surface owner. The operator shall submit the proposed alternative, with written documentation that the surface owner agrees to the alternative, to the division for approval.*

Alternatives to the re-vegetation requirements will be submitted to the Aztec NMOCD District Office for approval using Form C-144. KEC will obtain written agreement from the surface owner prior to NMOCD administrative approval.

**H. Soil cover designs.**

*(1) The soil cover for closures where the operator has removed the pit contents or remediated the contaminated soil to the division's satisfaction shall consist of the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater.*

It is KEC's intention to bury pit materials in place, however if the pit contents are removed, the soil cover will consist of the background thickness of topsoil or one foot of suitable material to establish vegetation, whichever is greater.

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

Where KEC employs the bury-in-place method, the soil cover shall consist of a minimum of four feet of compacted, non-waste containing, earthen material. The soil cover shall include either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater.

*(3) The operator shall construct the soil cover to the site's existing grade and prevent ponding of water and erosion of the cover material.*

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

**I. Re-vegetation.**

*(1) The first growing season after the operator closes a pit or trench or is no longer using a drying pad, below-grade tank or an area associated with a closed-loop system, pit or below-grade tank including access roads, the operator shall seed or plant the disturbed areas.*

*(2) The operator shall accomplish seeding by drilling on the contour whenever practical or by other division-approved methods. The operator shall 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 shall be no artificial irrigation of the vegetation.*

*(3) The operator shall repeat seeding or planting until it successfully achieves the required vegetative cover.*

*(4) When conditions are not favorable for the establishment of vegetation, such as periods of drought, the division may allow the operator to delay seeding or planting until soil moisture conditions*



*become favorable or may require the operator to use additional cultural techniques such as mulching, fertilizing, irrigating, fencing or other practices.*

*(5) The operator shall notify the division when it has seeded or planted and when it successfully achieves re-vegetation.*

KEC will seed the disturbed areas the first growing season after closing the temporary pit. Seeding will be accomplished via drilling on the contour whenever practical or by other division-approved methods. BLM, Forest Service, Bureau of Indian Affairs, or Navajo tribe stipulated seed mixes will be used. Vegetative cover will equal 70% of the native perennial vegetative cover (un-impacted) 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. Repeat seeding or planting will be continued until successful vegetative growth occurs. During the two growing seasons that prove viability, there shall be no artificial irrigation of the vegetation. KEC will notify the division when seeding and planting is done and when re-vegetation is complete.

*J. Closure notice.*

*(1) The operator shall notify the surface owner by certified mail, return receipt requested, that the operator plans to close a temporary pit, a permanent pit, a below-grade tank or where the operator has approval for on-site closure. Evidence of mailing of the notice to the address of the surface owner shown in the county tax records is sufficient to demonstrate compliance with this requirement.*

KEC shall notify the surface owner by certified mail, return receipt requested, that the operator plans to close the temporary pit or where the operator has approval for on-site closure. Evidence of mailing of the notice to the address of the surface owner shown in the county tax records is sufficient to demonstrate compliance with this requirement.

*(2) The operator of a temporary pit or below-grade tank or an operator who is approved for on-site closure shall 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 shall include the operator's name and the location to be closed by unit letter, section, township and range. If the closure is associated with a particular well, then the notice shall also include the well's name, number and API number.*

KEC 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

*(3) An operator of a permanent pit...*

Not applicable, not a permanent pit.

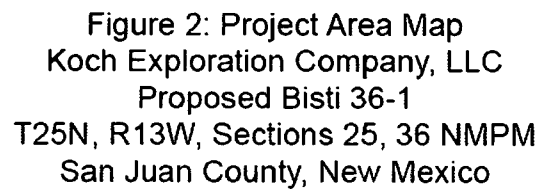
*K. Closure report. Within 60 days of closure completion, the operator shall submit a closure report on form C-144, with necessary attachments to document all closure activities including sampling results; information required by 19.15.17 NMAC; a plot plan; and details on back-filling, capping and covering,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

Within 60 days of closure completion, KEC shall submit a closure report on form C-144 and other

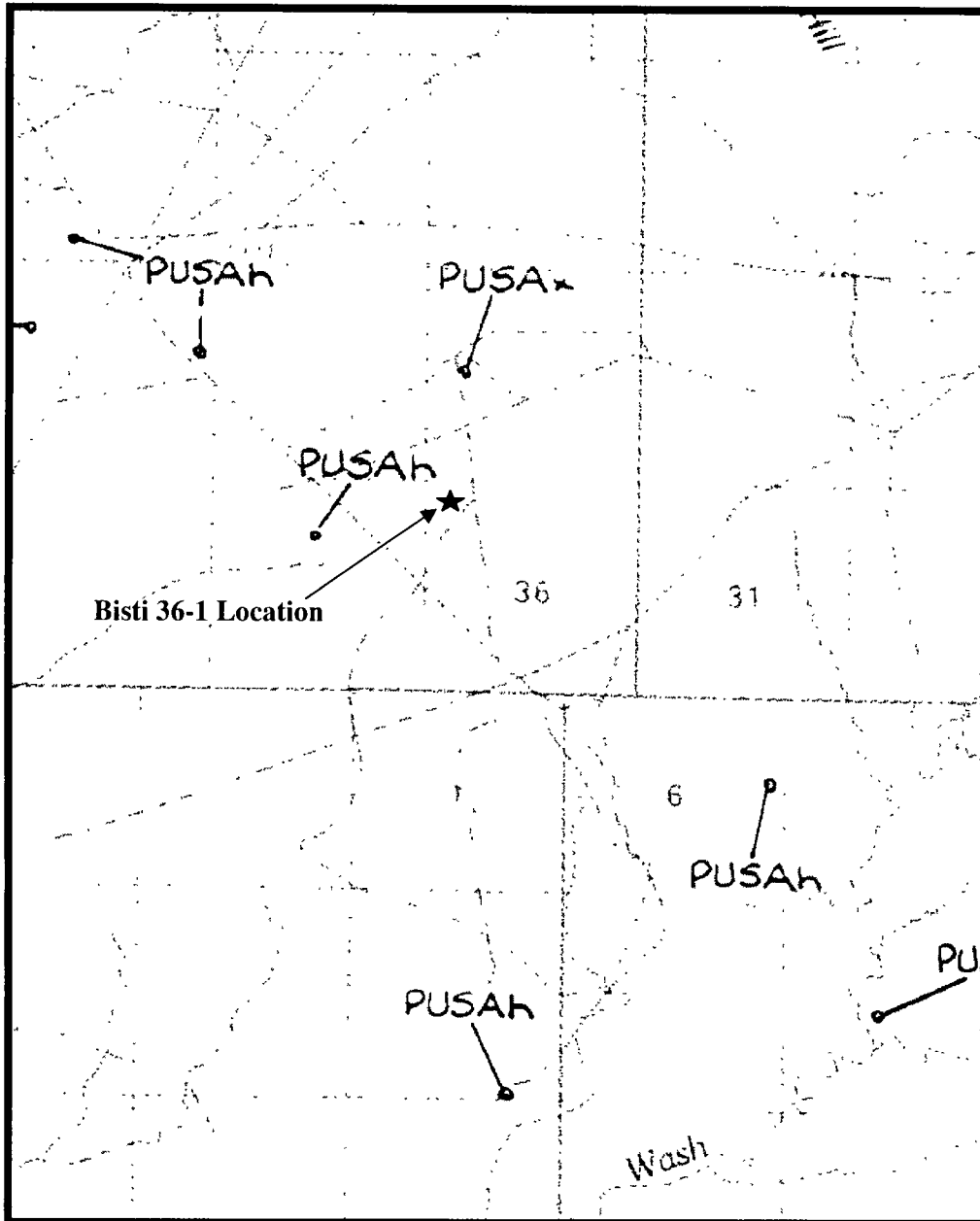
supporting documentation as required by Paragraph K. KEC will certify that all information in the report and attachments is correct and that the operator has complied with all applicable closure requirements and conditions specified in the approved closure plan. The following attachments will be included with the report:

- Proof of Closure Notice (surface owner and division)
- Confirmation Sampling Analytical Results
- Disposal Facility Name and Permit Number
- Soil Backfilling and Cover Installation
- Re-vegetation Application Rates and Seeding Technique
- Site Reclamation (Photo Documentation)
- Plat of the Pit Location on Form C-105 (**within 60 days of closing the temporary pit**)

**APPENDIX A**  
**USGS 7.5 Minute Topography Map and US Fish & Wildlife Wetland  
Identification Map**



Fish and Wildlife Service: National Wetlands Inventory  
1:100,000 Scale Map  
1984



## APPENDIX B

Groundwater Data (water well searches and/or depth to groundwater  
per cathodic bed data)



## New Mexico Office of the State Engineer Wells with Well Log Information

No wells found

**Basin/County Search:**

County: San Juan

**PLSS Search:**

Section(s): 22, 23, 24, 27, Township: 25N Range: 13W  
26, 25, 34, 35,  
36

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data

6/28/12 9 02 AM

WELLS WITH WELL LOG INFORMATION



## New Mexico Office of the State Engineer Wells with Well Log Information

No wells found.

**Basin/County Search:**

County: San Juan

**PLSS Search:**

Section(s): 19, 20, 30, 29 Township: 25N Range: 12W  
31, 32

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data

6/28/12 9 03 AM

WELLS WITH WELL LOG INFORMATION



## New Mexico Office of the State Engineer Wells with Well Log Information

(A CLW\*\*\*\*\* in the  
POD suffix indicates  
the POD has been  
replaced & no longer  
serves a water right

(R=POD has  
been replaced,  
O=orphaned,  
C=the file is  
closed)

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

(NAD83 UTM in meters)

POD Number	Code	Subbasin	County	Source	6416 4	Sec	Tws	Rng	X	Y	Start Date	Finish Date	Log File	Depth	Depth	Well	Water	Driller	License
SJ 03815	POD1		SJ		4	2	12	24N	13W	215373	4025536	09/20/2008	10/01/2008	10/01/2008	730			HOOD, TERRY	717

Record Count: 1

**Basin/County Search:**

County: San Juan

**PLSS Search:**

Section(s): 3, 2, 1, 10, 11, Township: 24N Range: 13W  
12

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data

6/28/12 9.04 AM

WELLS WITH WELL LOG INFORMATION



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## New Mexico Office of the State Engineer Wells with Well Log Information

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No wells found

Basin/County Search:

County: San Juan

PLSS Search:

Section(s): 3, 2, 1, 10, 11, Township: 24N Range: 12W  
12

---

The data is furnished by the NMGSE/ISC and is accepted by the recipient with the expressed understanding that the GSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data

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6/28/12 9:05 AM

WELLS WITH WELL LOG INFORMATION

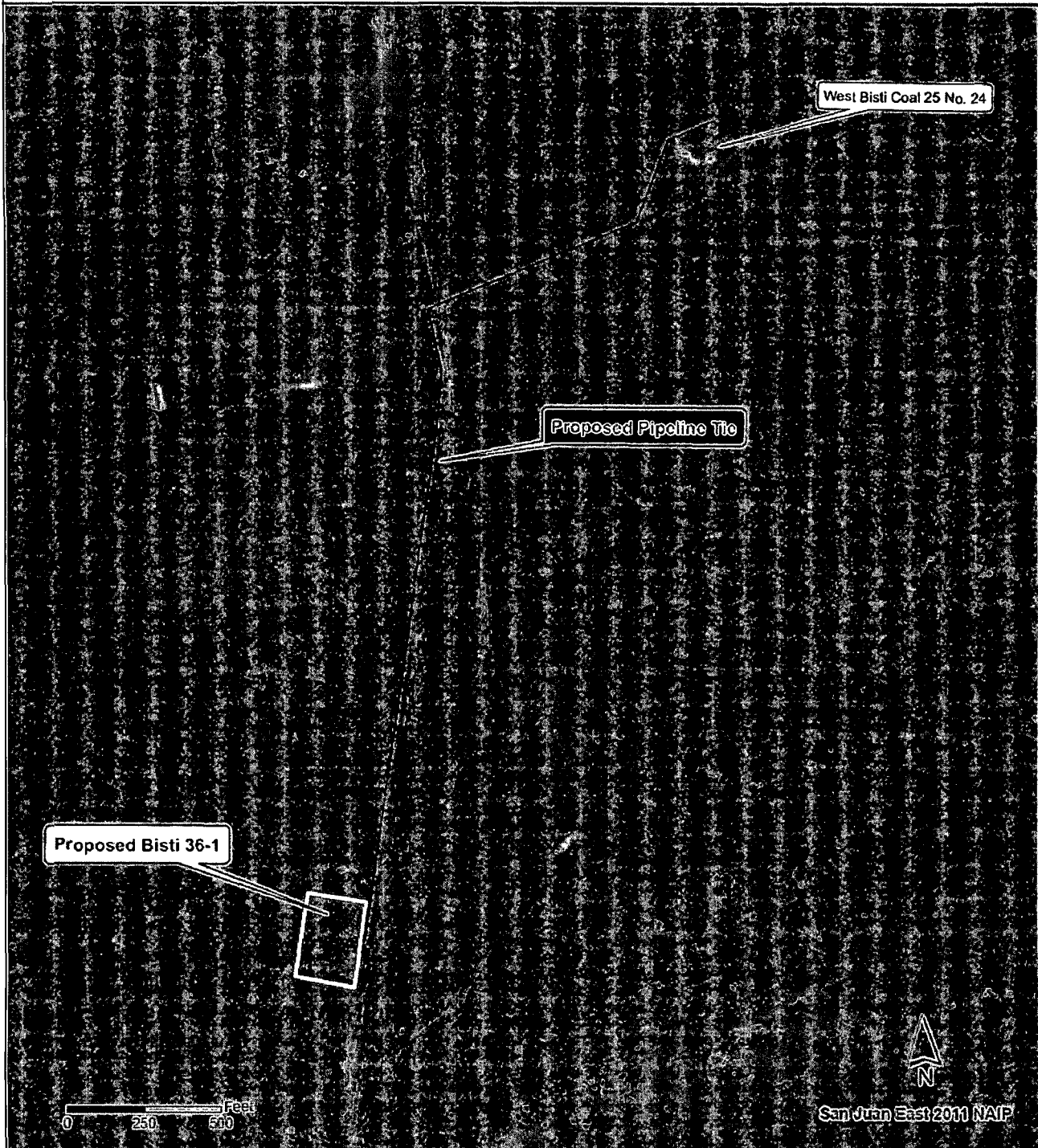
Search criteria: Minimum of two mile search radius from approximate center of location



**APPENDIX C**  
*Aerial Photo*



Figure 3: Aerial Map  
Koch Exploration Company, LLC  
Proposed Bisti 36-1  
T25N, R13W, Sections 25, 36  
San Juan County, New Mexico

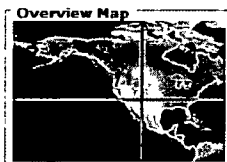


# APPENDIX D

## FEMA 100-year Floodplain Map

View areas at risk of floods in the United States and territories. Search by address, state or zip code or use advanced search options such as coordinates and map scales. [View data from 2002 and earlier](#) regarding earthquakes, hurricanes and other hazards.

## Geocoder



### Select Zoom Filter

Zoom to:

▼

### Coordinates

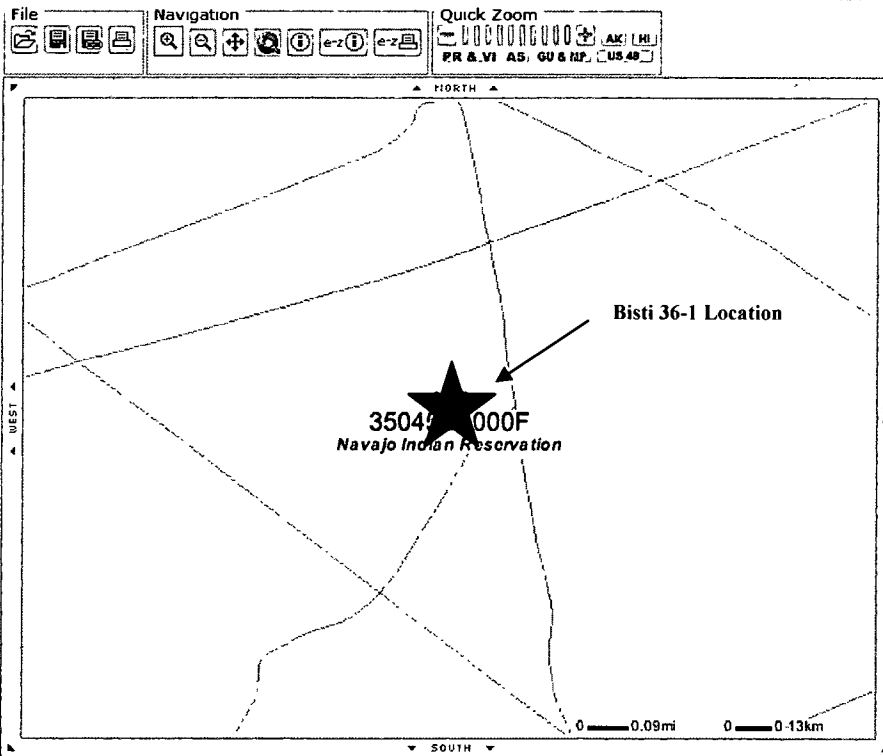
Latitude:

Longitude:

*Coordinates in  
Decimal Degrees*

[Zoom Map](#)

## Flood Map Viewer



Road data from 1984-2008 TeleAtlas, Rel. 05/2007

The current map contains layers that do not comply with DFIRM specifications

To show only DFIRM compliant layers, click here

[DFIRM View](#)

## Map Legend

Click "+" button to see a list of map layers that can be displayed  
Click on a check box to add or remove a layer  
Click "Refresh Map" button to update the map

[Refresh Map](#)

### Legend

### Identify

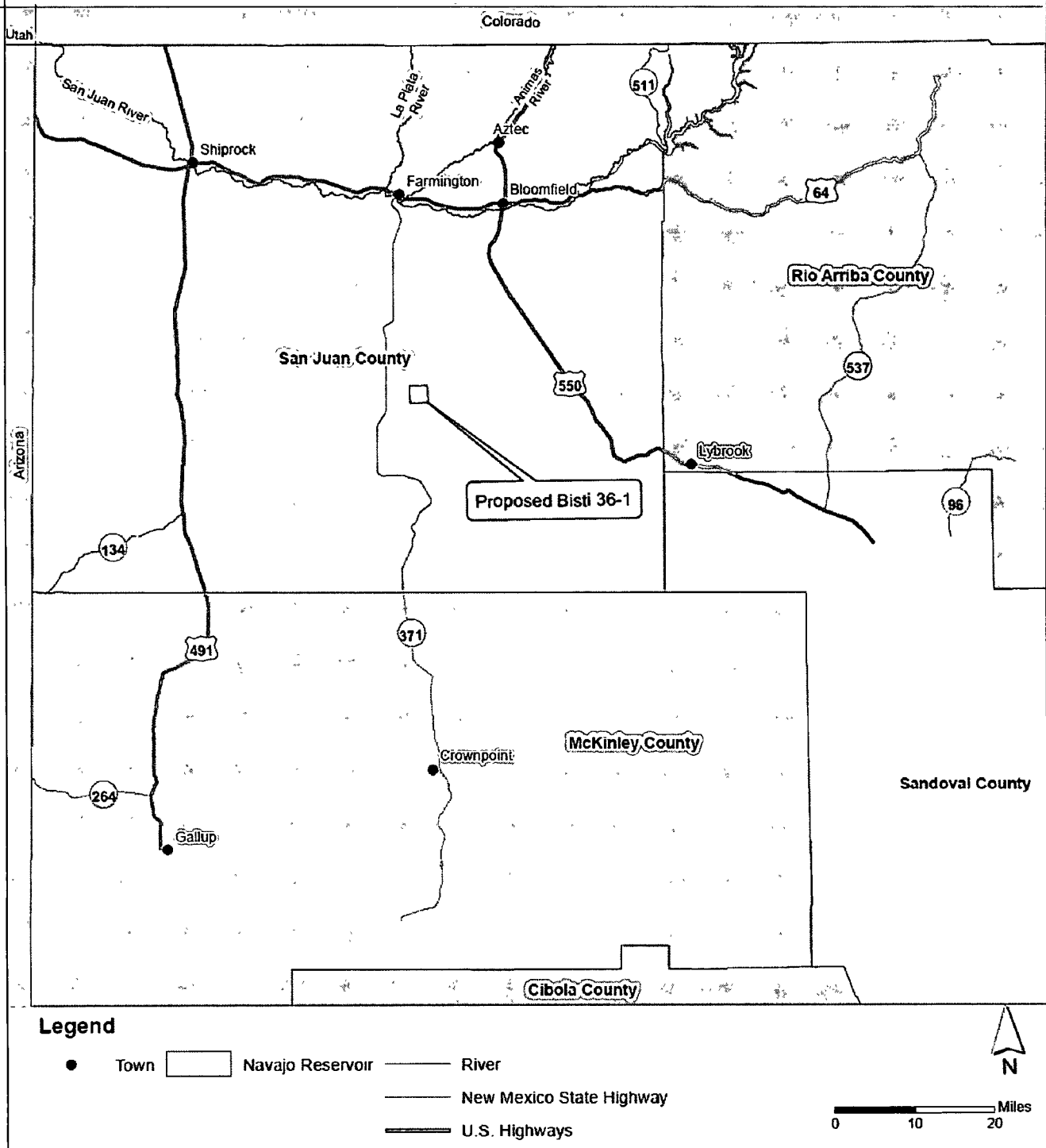
- ☒ Flood Data
  - ☒ FEMA Boundaries
  - ☒ National Flood Hazard Layer
  - ☒ Political Jurisdictions
  - ☐ Water Body
  - ☐ PLSS Sections
  - ☐ PLSS Township Range Lines
  - ☐ River Distance Markers
  - ☒ Streams
  - ☐ DFIRM Streets
    - ☐ PRIMARY ROAD
    - ☐ SECONDARY ROAD
    - ☐ UNDEFINED RAILROAD
    - ☐ UNDEFINED ROAD
  - ☒ Floodways
  - ☐ Flood Hazard Zone Boundaries
  - ☒ Flood Hazard Zones
    - ☒ Zone A

# APPENDIX E

## Municipal Boundary Map

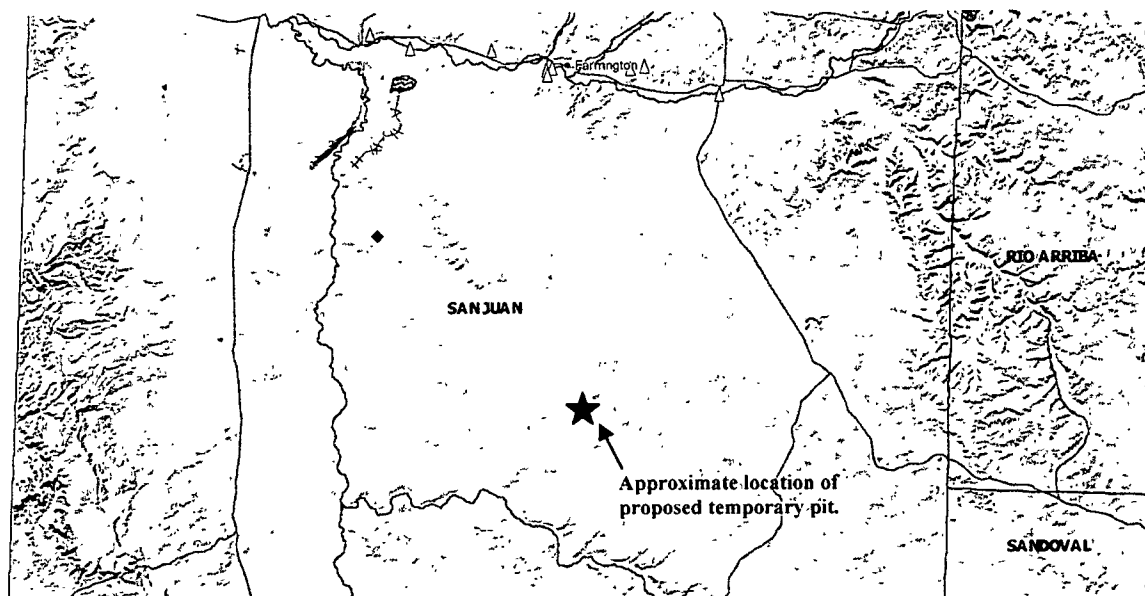


Figure 1: Vicinity Map  
Koch Exploration Company, LLC  
Proposed Bisti 36-1  
T25N, R13W, Sections 25, 36 NMPM  
San Juan County, New Mexico



## APPENDIX F

### Mine Map



Source: <http://www.emnrd.state.nm.us/MMD/MRRS/MinesMillsQuarriesWebMap.htm>

Map symbols (yellow triangles/black diamonds) represent mines, mills or quarries.



• ( •

## APPENDIX G

### NMOCD Form C-102 and Site Layout

DISTRICT I  
1625 N. French Dr., Hobbs, N.M. 88240  
Phone (505) 393-6161 Fax: (505) 393-0720

DISTRICT II  
811 S. First St., Artesia, N.M. 88210  
Phone (505) 748-1283 Fax: (505) 748-9720

DISTRICT III  
1000 Rio Brazos Rd., Aztec, N.M. 87410  
Phone (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, N.M. 87505  
Phone (505) 478-3460 Fax: (505) 478-3462

State of New Mexico  
Energy, Minerals & Natural Resources Department

# OIL CONSERVATION DIVISION

1220 South St. Francis Dr.  
Santa Fe, N.M. 87505

Form C-102

Revised August 1, 2011

Submit one copy to appropriate

District Office

☐ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number		Pool Code 71629	Pool Name Fruitland Coal
Property Code	Property Name BISTI 36		Well Number 1
OCRID No. 12807	Operator Name KOCH EXPLORATION		Elevation 6307

### 10 Surface Location

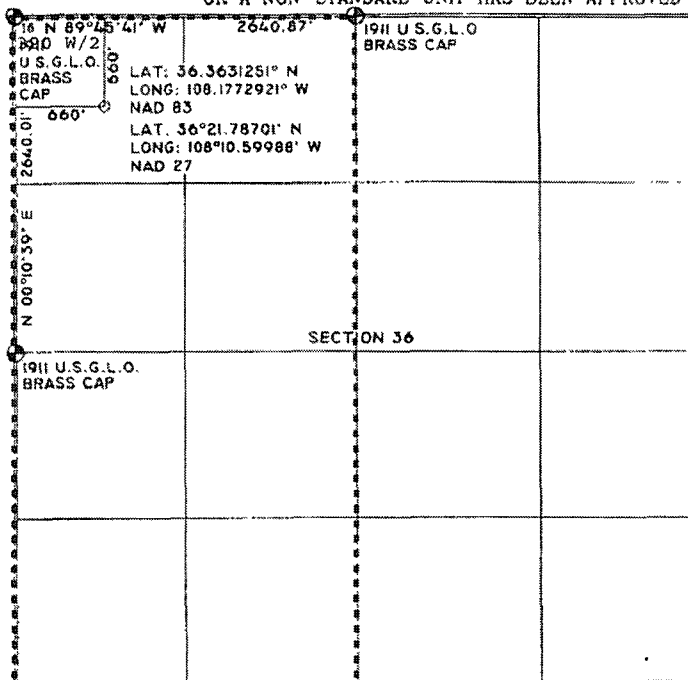
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	36	25 N	13 W		660	NORTH	660	WEST	SAN JUAN

### 11 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 320 W/2	Joint or Infill	Consolidation Code	Order No

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



### 17 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 undivided mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or is a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

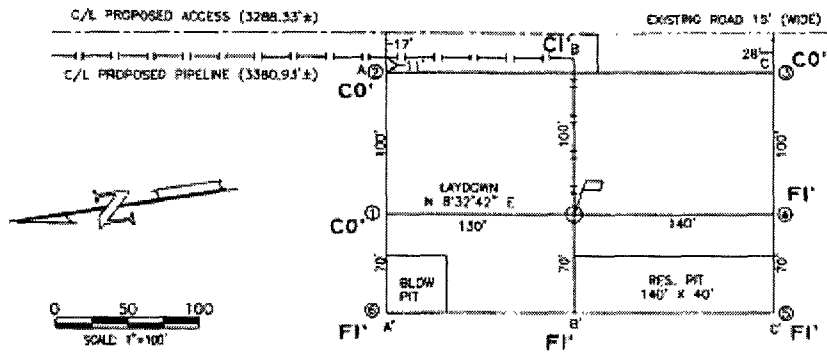
Signature: *Donald L. Johnson* Date: 6/28/12  
Printed Name: Donald L. Johnson  
E-mail Address: johnsdl@kochind.com

### 18 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 supervision, and that the same is true and correct to the best of my belief.

Date of Survey: 8/16/11  
Signature: *Thomas Vukovich*  
Printed Name: Thomas Vukovich  
E-mail Address: *tvukovich@nmsurveyor.com*  
Certificate Number: 14831

BEFORE DIGGING  
CALL FOR UTILITY  
LINE LOCATION!



ELEVATION A-A'

6320				
6310				
6300				
6290				
6280				

B-B'

6320				
6310				
6300				
6290				
6280				

C-C'

6320				
6310				
6300				
6290				
6280				

CROSS SECTIONS  
HORIZONTAL: 1"=100'  
VERTICAL: 1"=50'

LEASE: **BISTI 36-1**

FOOTAGE: **660' FNL, 660' FWL**

SEC. **36** TWN. **25 N** RNG **13 W** N.M.P.M.

LAT: **36.3631251° N** LONG: **108.1772921° W (NAD 83)**

ELEVATION: **6307**

**KOCH EXPLORATION**  
AZTEC, NEW MEXICO

SURVEYED: 08/16/11	REV. DATE:	APP. BY: JAV
DRAWN BY: H.S.	DATE DRAWN: 10/21/11	FILE NAME: 10058002

**UNITED**  
FIELD SERVICES INC.

P.O. BOX 3851  
FARMINGTON, NM 87489  
OFFICE: (505) 334-0408

**KOCH EXPLORATION**  
**BISTI 36-1 PROPOSED PIPELINE & ACCESS ROAD**  
 SW/4 SEC. 25 & THE NW/4 OF SEC. 36, T-25-N, R-13-W, N.M.P.M.,  
 SAN JUAN COUNTY, NEW MEXICO

**NAVJO INDIAN RESERVATION**

**WELLFLAG BISTI 36-1**

**NAVJO INDIAN RESERVATION**

**Fd. Bc. North 1/4 U.S.G.L.O. 1911**

**Fd. Bc. West 1/4 U.S.G.L.O. 1911**

**Fd. Bc. East 1/4 U.S.G.L.O. 1911**

**BASIS OF BEARING**  
 N 89°45'41" W  
 2640.87'  
 S 44°47'42" E  
 933.95'

**N 19°42'49" W**  
 2133.23'

**O+00 = P.O.T. ON EXISTING PIPELINE**  
 BEGIN PROPOSED PIPELINE ONLY  
 TIE LT. 37' METER OUT  
 TIE LT. WELLPAD  
 S 71°03'50" W=180.95'  
 1+80.95\*56'46'35" LT.  
 TIE LT. 15' WELLPAD  
 S 14°17'15" W=287.38'  
 BEGIN PROPOSED ACCESS ONLY (O+00)  
 4+68.33\*51'40'22" RT.  
 TIE LT. 15' ROAD  
 END PROPOSED PIPELINE ONLY  
 END PROPOSED ACCESS ONLY  
 BEGIN PROPOSED PIPELINE/ACCESS  
 S 65°57'37" W=744.83'  
 11+54.10 C/L ROAD (12' WIDE)  
 11+96.39 C/L ROAD (12' WIDE)  
 12+13.16\*72'24'52" LT.  
 TIE LT. 15' ROAD  
 S 52°17'15" E=281.81'

**12+24.64 C/L ROAD (12' WIDE)**  
**14+94.97\*10'43'02" RT.**  
 S 4°15'47" W=110.90'  
**15+53.38 C/L ROAD (20' WIDE)**  
**16+05.67\*4'33'31" RT.**  
 TIE LT. 15' ROAD  
 S 8°49'18" W=1664.79'  
 25+87.06 SECTION LINE  
**32+70.66\*89°43'18" RT.**  
 TIE LT. 15' ROAD  
 N 81°27'24" W=110.27'  
 32+80.94 ENTER WELLPAD  
 END PROPOSED PIPELINE/ACCESS  
 BEGIN PROPOSED PIPELINE ONLY  
**33+80.93 C/L WELLFLAG (EOL)**  
**BISTI 36-1**  
 END PROPOSED PIPELINE ONLY

**S 47°22'12" E**  
 1025.36'

**R-13-W**  
**R-12-W**

**0 500 1000**  
 SCALE: 1"=1000'

**NOTES:**  
 1. BASIS OF BEARING: MONUMENTED NORTH LINE OF THE NW/4 OF SECTION 36, T-25-N, R-13-W, N.M.P.M., SAN JUAN COUNTY, NEW MEXICO BEARING = N 89°45'41" W - 2640.87'  
 2. ALL BEARINGS & DISTANCES SHOWN ARE BASED UPON THE NEW MEXICO STATE COORDINATE SYSTEM, WEST ZONE, AND G3 (COMBINED SCALE FACTOR: 0.0000301)

I, JOHN A. VUKOVICH, NEW MEXICO PROFESSIONAL SURVEYOR NO. 14831, DO HEREBY CERTIFY THAT THIS CASEMENT WAS MADE BY ME OR UNDER MY DIRECT SUPERVISION, UPON WHICH IT IS BASED, AND THAT I AM RESPONSIBLE FOR THE ACCURACY OF THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYS IN NEW MEXICO, AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I FURTHER CERTIFY THAT THIS SURVEY IS NOT A LAND DIVISION AS DEFINED IN THE NEW MEXICO SUBDIVISION ACT

OWNER	STATION	FEET/RODS
NAVAJO INDIAN RESERVATION	O+00 TO 4+68.33 (PIPELINE ONLY)	468.33/28.384
NAVAJO INDIAN RESERVATION	O+00 TO 4+75.72 (ACCESS ONLY)	475.72/28.632
NAVAJO INDIAN RESERVATION	4+68.33 TO 32+80.94 (PIPELINE & ACCESS)	2812.61/170.461
NAVAJO INDIAN RESERVATION	32+80.94 TO 33+80.93 (PIPELINE ONLY)	99.99/6.060

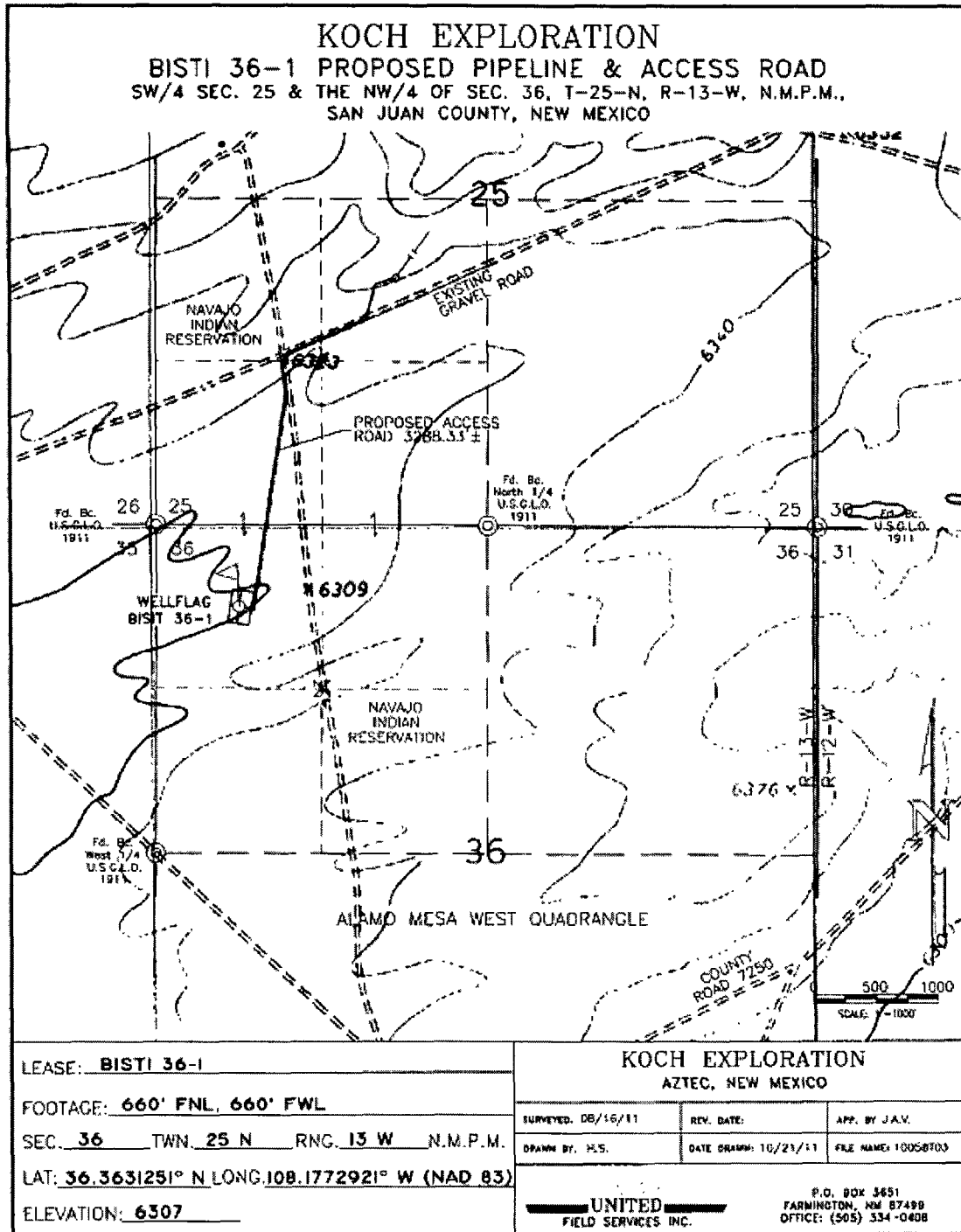
**KOCH EXPLORATION**  
**AZTEC, NEW MEXICO**

SURVEYED: 08/16/11	REV. DATE:	APP. BY JAV
DRAWN BY: H.S	DATE DRAWN: 10/21/11	FILE NAME: 10058P02

**UNITED FIELD SERVICES INC.**

P.O. BOX 3651  
 FARMINGTON, NM 87499  
 OFFICE: (505) 334-0408

CAT 28 2011  
 DATE



APPENDIX H  
Surface Owner Notification of On-site Closure



KOCH EXPLORATION COMPANY LLC

August 23, 2012

CERTIFIED MAIL, RETURN RECEIPT

Bureau of Indian Affairs  
Ms. Bertha Spencer  
PO Box 1060-N425  
Gallup, NM 87305

Dear Ms. Spencer,

This letter serves as notice according to NMAC 19.15.17.13(F) of Koch Exploration Company, LLC's (KEC) intent to construct a temporary reserve pit for the purpose of drilling and completing the following wells Bisti 2 1 (API #30-045-35386, S02, T24N, R13W, NE/NE), Bisti 2 1M (API #30-045-35392, S02, T24N, R13W, NE/NE), Bisti 36 1 (API #30-045-35385, S36, T25N, R13W, NW/NW), and Bisti 36 1M (API #30-045-35389, S36, T25N, R13W, NW/NW).

These reserve pits will be constructed according to the guidelines of NMAC 19.15.17, and KEC intends to utilize the on-site closure method as outlined in this regulation.

Should you have questions or need additional information, please give me a call at (505) 334-9111.

Sincerely,

A handwritten signature in black ink, appearing to read 'Donald Johnson'.

Donald Johnson  
Operations Manager

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>		<p>A. Signature <i>[Signature]</i> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name) <i>[Signature]</i> <input type="checkbox"/> Office of Delivery</p> <p>C. Is delivery address different from item 1? <input type="checkbox"/> Yes <input type="checkbox"/> No If YES, enter delivery address below:</p>	
<p>1. Article Addressed to:</p> <p>Bureau of Indian Affairs Ms. Bertha Spencer PO Box 1060-N425 Gallup, NM 87305</p>		<p>3. Service Type</p> <p><input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail</p> <p><input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise</p> <p><input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p>	
<p>2. Article Number (Transfer from service label)</p> <p>7000 0520 0020 4944 9794</p>		<p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>	

PS Form 3811, February 2004

Domestic Return Receipt

10235-02-00-1540





KOCH EXPLORATION COMPANY LLC

August 23, 2012

CERTIFIED MAIL, RETURN RECEIPT

Navajo Agriculture Products, Inc.  
Mr. Greg Yazzie  
PO Box 1318  
Farmington, NM 87499

Dear Mr. Yazzie,

This letter serves as notice according to NMAC 19.15.17.13(F) of Koch Exploration Company, LLC's (KEC) intent to construct a temporary reserve pit for the purpose of drilling and completing the following wells Bisti 2 1 (API #30-045-35386, S02, T24N, R13W, NE/NE), Bisti 2 1M (API #30-045-35392, S02, T24N, R13W, NE/NE), Bisti 36 1 (API #30-045-35385, S36, T25N, R13W, NW/NW), and Bisti 36 1M (API #30-045-35389, S36, T25N, R13W, NW/NW).

These reserve pits will be constructed according to the guidelines of NMAC 19.15.17, and KEC intends to utilize the on-site closure method as outlined in this regulation.

Should you have questions or need additional information, please give me a call at (505) 334-9111.

Sincerely,

A handwritten signature in black ink, appearing to read 'Donald Johnson'.

Donald Johnson  
Operations Manager

PO Box 489 • Aztec, New Mexico 87410 • 505/334-3111 • FAX 505/334-1888

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<p>■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</p> <p>■ Print your name and address on the reverse so that we can return the card to you.</p> <p>■ Attach this card to the back of the mailpiece, or on the front if space permits.</p>		<p>A. Signature  <input checked="" type="checkbox"/> <i>Emily Begay</i> <input type="checkbox"/> Agent  <input type="checkbox"/> Addressee</p>	
<p>1. Article Addressed to:</p> <p><i>Navajo Agriculture Products Inc.</i>  <i>Mr. Greg Yazzie</i>  <i>P.O. Box 1318</i>  <i>Farmington, NM 87499</i></p>		<p>B. Received by (Printed Name) <i>Emily Begay</i> C. Date of Delivery <i>5/28/2012</i></p>	
		<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes          If YES, enter delivery address below: <input type="checkbox"/> No</p>	
		<p>3. Service Type  <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail  <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise  <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p>	
		<p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>	
<p>2. Article Number          (Transfer from service label) <i>7000 0520 0020 4944 9800</i></p>			

PS Form 3811, February 2004

Domestic Return Receipt

102505-02-44-1540