

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

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

Form C-144
July 21, 2008

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

5474

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.

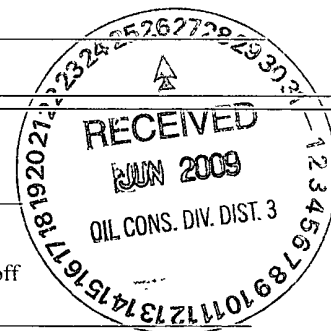
1
Operator Noble Energy Inc OGRID # 234550
Address 5802 US Highway 64, Farmington, N M 87401
Facility or well name Jicarilla C 1
API Number 3003906546 OCD Permit Number _____
U/L or Qtr/Qtr P Section 11 Township 26N Range 4W County Rio Arriba
Center of Proposed Design Latitude 36.49617405 Longitude 107.2155001 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 _____ mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other _____
☐ String-Reinforced
Liner Seams ☐ Welded ☐ Factory ☐ Other _____ Volume _____ bbl Dimensions L _____ x W _____ x D _____

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 _____

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☒ **Below-grade tank:** Subsection I of 19 15 17 11 NMAC
Volume 100 bbl Type of fluid Water
Tank Construction material Steel double bottom tank
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
☐ Visible sidewalls and liner ☒ Visible sidewalls only ☒ Other leak detection _____
Liner type Thickness N/A mil ☐ HDPE ☐ PVC ☐ Other _____

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



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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 _____

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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)

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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 H₂S, 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

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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)

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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

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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) Jean Muse Title Regulatory Compliance

Signature J Muse Date 6.22.09

e-mail address jmuse@nobleneenergyinc.com Telephone (866) 404-3161

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

OCD Representative Signature: Jonathan D. Kelly Approval Date: 4/26/2012

Title: Deputy Oil & Gas Inspector, District #3 OCD Permit Number: _____

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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: _____

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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 _____

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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

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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

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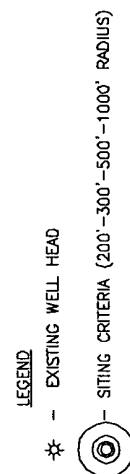
Operator Closure Certification:

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 _____



SOURCE INFORMATION:

- 1) NEW MEXICO GEOSPATIAL DATA ACQUISITION COORDINATION COMMITTEE (GDACC), STATE OF NEW MEXICO. "SCHMITZ RANCH, NM NW USGS DOQQ, SUMMER OF 2005 AND 2006" (REMOTE SENSING IMAGE). 1:12000. ALBUQUERQUE, NM: BOHANNAN-HUSTON, INC., 2005.
- 2) U.S. GEOLOGICAL SURVEY. SCHMITZ RANCH QUADRANGLE, NEW MEXICO (TOPOGRAPHIC MAP). 1:24,000. 7.5 MINUTE SERIES. WASHINGTON D C USGS, 1963.

REVISIONS						<small>DRAWN BY:</small> C. POTRAS <small>CHECKED BY:</small> G. DICKERT <small>REVIEWED BY:</small> <small>APPROVED BY:</small>	<small>SCALE:</small> SCALE 1"=600'	<div style="display: inline-block; vertical-align: middle;"> noble energy <small>150 TECH CENTER DRIVE, SUITE E DURANGO, COLORADO 81301-9940 970-385-9100</small> </div>	
△							JICARILLA C1 SITING CRITERIA <small>NOBLE ENERGY-BELOW GRADE TANK PERMITS</small>		
△									
△									
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NO	DESCRIPTION	DATE	BY	CHK.	APPR		<small>PROJECT NUMBER</small> 2484-37	<small>DRAWING NUMBER</small> A248437-500	<small>REV.</small>

Noble Energy, Inc.
Below-grade Tank
Hydrogeologic Report
(Item 11)
San Juan Basin Locations

The below-grade tank described in this application is located within the planning area of the Farmington Field Office of the Bureau of Land Management. This office prepared a Resource Management Plan and Environmental Impact Statement in March 2003 (USDI 2003). Geology of the region was analyzed in this document. A summary of this section (Geology and Minerals pages 3-4 -3-9 in Farmington Proposed Resource Management Plan and Final Environmental Impact Statement 2003) is included below as relevant to the below-grade tank for which a C-144 form is being submitted. Additional sources of information for this resource are listed in the original text.

The San Juan Basin, an asymmetrical syncline roughly 200 miles long and 130 miles wide (including the portion that extends north into Colorado), is the dominant geological feature of northwestern New Mexico. The San Juan Basin reached its current structural arrangement upon completion of downwarping of Cretaceous-aged rocks at the end of the Laramide uplift. Later, deeply buried organic matter was heated and gas and oil were formed in stratigraphic traps in the basin. Epicontinental sea deposition that occurred between periods of major uplift created the Cambrian to Quaternary sedimentary rocks that are found over Precambrian rocks. Depositional environments for rock units included deep marine, shoreline, continental, and fluvial. Wind-blown sand also contributed to the depositional environment in the Triassic-Jurassic interval. Tertiary sediments arrived in the San Juan Basin when the San Juan Mountains and southern Rocky Mountains began to erode and these sediments were transported and deposited in the basin (in the Tertiary period).

Rocks of the San Juan Basin include predominately shales and sandstones that range in age from Cambrian to Quaternary. Coals, carbonates, and igneous rocks are also found in the basin to a lesser degree. Together, the sedimentary rocks are more than 14,000 feet thick at the New Mexico/Colorado state line. Six thousand feet of Cretaceous sandstones, siltstones, shales, and coals form the top layers in the basin. The hydrocarbon reservoirs in the basin are all within these Cretaceous layers where plants and animals decomposed. These include the Fruitland Formation, Pictured Cliffs Sandstone, Mesa Verde Group, and Dakota Sandstone. Shales and sandstones from the Permian through the Pennsylvanian periods (1,700 – 2,900 feet thick) are found below these layers. The oldest layer of rocks, the Precambrian basement rocks, are located more than 7,500 feet below sea level in the basin's deepest part.

Understanding the geology of the San Juan Basin sets the stage for understanding its hydrology. As with geology, hydrology of the basin was researched and described in the Farmington Proposed RMP and Final EIS (USDI 2003). The following is a summary of this report as pertains to the below-grade tank that is being permitted through the Oil Conservation District.

Noble Energy, Inc.

Below-grade Tank Design and Construction General Plan

San Juan Basin Locations

This general plan was written in accordance with New Mexico Administrative Code 19.15.17 to describe Noble Energy's standard design and construction of below-grade tanks in the San Juan Basin. Any tanks that do not conform to this plan will be described in separate, specific plans submitted to the Oil Conservation Division for those tanks.

All below-grade tanks will be designed and constructed to contain liquids and solids, to prevent contamination of fresh water, and to protect public health and the environment (19.15.17 11 A). The location of these tanks will be indicated by the existing well site sign in accordance with NMAC 19.15 16.8. Noble will ensure the tank is fenced in accordance with 19.15.17.11 D to prevent unauthorized access. Fences will be designed and maintained to keep livestock and wildlife out of the tank area. If the tank is located within 1,000 feet of a permanent residence, school, hospital, institution, or church, a six-foot (minimum height) chain link security fence with at least two strands of barbed wire along the top will be used instead. Migratory birds and other wildlife will be protected from entering the tank from the top by netting, screening, or other covering that prevents access into the tank (19.15.17.11 E).

All tanks will be constructed from materials resistant to that tank's contents as well as to sunlight damage (19.15.17.11 I). The foundation of the tank will be level and free from objects that could crack or dent the tank liner or bottom. All tanks will be constructed so that overflow is prevented and surface water run-on is not collected. These tanks do not have double walls. The side walls are open for visual inspection for leaks. The tanks will be enclosed within a secondary containment structure sized to accommodate all possible overflow in the event the tank fills before it can be pumped (i.e. resulting from an unusual rain event). This secondary containment structure will be surrounded on the surface by a berm to prevent surface water flow into the tank or containment structure. Tanks will be pumped of produced water at regular intervals to prevent overflow.

Noble Energy, Inc.
Below-grade Tank Maintenance and Operations General Plan
(Item 11)
San Juan Basin Locations

This general plan was written in accordance with New Mexico Administrative Code 19.15 17.12 to describe Noble Energy's standard maintenance and operations for below-grade tanks in the San Juan Basin. Any tanks that do not conform to this plan will be described in separate, specific plans submitted to the Oil Conservation Division for those tanks.

All tanks will be maintained and operated such that:

- liquids and solids are contained in the tank
- the integrity of the liner is maintained
- the liner system and/or secondary containment system is maintained
- contamination of fresh water is prevented
- public health and the environment are protected

Noble will not discharge or store any hazardous waste in the below-grade tank.

Noble will inspect the below-grade tank at least monthly and will maintain a written record of each inspection for five years. In the event of a leak, or if there is any penetration of the tank below the liquid's surface, Noble will remove all liquid above the damage point (leak) within 48 hours. Noble will notify the appropriate division office within 48 hours of the discovery. The damage will be repaired or the entire tank will be replaced.

Noble will not allow a tank to overflow or allow surface water run-on to enter the tank. Noble will operate this tank in order to prevent the collection of surface water run-on. The tank will be operated so that adequate freeboard is maintained to avoid overtopping the tank.

Noble will remove any visible or measurable layer of oil from the fluid surface of a below-grade tank.

Noble Energy, Inc
Below-grade Tank Closure General Plan
(Item 11)
San Juan Basin Locations

This general plan was written in accordance with New Mexico Administrative Code 19.15 17.13 to describe Noble Energy's standard closure of below-grade tanks in the San Juan Basin. Any tanks that do not conform to this plan will be described in separate, specific plans submitted to the Oil Conservation Division for those tanks.

Noble will close below-grade tanks according to the requirements of NMAC 19.15 17.13 A, unless otherwise required by the division due to imminent danger to fresh water, public health, or the environment. Noble will close existing below-grade tanks that do not meet the requirements of Paragraphs (1) through (4) of Subsection I of NMAC 19.15 17.11 or are not included in Paragraph (5) of Subsection I of 19.15 17.11 within five years of June 16, 2008, unless they are retrofitted to comply with Paragraphs (1) through (4) of Subsection I of 19.15 17.11. Noble will close permitted below-grade tanks within 60 days of cessation of the below-grade tank's operation or as required by the transitional provisions of Subsection B of 19.15 17.17 in accordance with a closure plan that the appropriate division office approves.

Noble will use division-approved methods to close below-grade tanks (Subsection E 19.15 17.13). Noble will remove liquids and sludge from a below-grade tank prior to implementing a closure method and will dispose of the liquids and sludge in a division-approved facility. Noble will remove the tank and either dispose of it in a division-approved facility, recycle it, reuse it, or reclaim it in a manner that the appropriate division office approves. Any associated on-site equipment will be removed unless required for another purpose on site.

Noble will test the soils under the tank to determine whether or not a release has occurred. Noble will collect at a minimum:

- a five-point, composite sample
- individual grab samples from any area that is wet, discolored, or showing other evidence of release

Noble will have samples analyzed for BTEX, TPH, and chlorides to demonstrate that:

- the benzene concentration, as determined by EPA SW-846 methods 8021B or 8260B or other EPA method as approved by the division, does not exceed 0.2 mg/kg,
- total BTEX concentration, as determined by EPA SW-846 methods 8021B or 8260B or other EPA method approved by the division, does not exceed 50 mg/kg,
- the TPH concentration, as determined by EPA method 418.1 or other EPA method approved by the division, does not exceed 100 mg/kg,
- the chloride concentration, as determined by EPA method 300.1 or other division-approved EPA method, does not exceed 250 mg/kg, or the background concentration, whichever is greater.

Noble will notify the division of testing results on form C-144. Noble will perform additional testing as required by the division upon their review of the initial results.

Item # 15: Disposal Facility name and permit number (page 3)

The following are used by Noble Energy Inc. for waste water disposal.

Company: AGUA MAS

Phone: 505-632-3640

Permit #: IPI-278

Location: PRETTY LADY 30-11-34 #1

API: 30-045-30922

Company: BASIN DISPOSAL

Phone: 505-334-3013

Permit #: NM001-0005

Location: Disposal # 001

API: 30-045-26862

Company: T-N-T DISPOSAL

Phone: 505-320-2130
505-320-2737

Permit #: NM001-0008