State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 8705

RECEIVED OCD

District IV

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

[1] Operator Name and Address	[2] OGRID Number
Reliant Exploration & Production, LLC. **10817 West County Road 60** **Midland, Texas 79707**	251905
	[3] API Number 30 - 021-20591

[5] Property Code	[7] Property Name	[6] Well No.
39771	**LIBBY MINERALS LLC 2031**	**18-1-M**

[9] Proposed Pool 1	[10] Proposed Pool 2
Bravo Dome 96010	

[7] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	**18**	**20 North**	**31 East NMPM**		**700'**	**South**	**840'**	**West**	**Harding**

[8] Proposed 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

Additional Well Information

[11] Work Type Code	[12] Well Type Code	[13] Cable/Rotary	[14] Lease Type Code	[15] Ground Level Elevation
N	C	R	P	4529.2
[16] Multiple	**[17] Proposed Depth**	**[18] Formation**	**[19] Contractor**	**[20] Spud Date**
NO	2600'	TUBB	Reliant	12/12/2013

Depth to Groundwater	Distance from nearest fresh water well	Distance from nearest surface water
> 100'	> 1000'	> 1000'

Pit: Liner: Synthetic ☐ 20 mils thick Clay ☐ Pit Volume: 850 bbls Drilling Method:

Closed-Loop System ☐ Fresh Water x Brine ☐ Diesel/Oil-based ☐ Gas/Air ☐

[21] Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
12-1/4"	8-5/8"	24#	700'	300SX	SURFACE
7-7/8"	5-1/2"	15.5#	2600'	400SX	SURFACE

[22] Describe the proposed program. If this application is to DEEPEN or PLUG BACK, give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

SEE ATTACHMENTS

[23] I hereby certify that the information given above is true and complete to the best of my knowledge and belief. **I further certify that the drilling pit will be constructed according to NMOCD guidelines ☒, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.**

Signature: Vance S. Vanderburg

Printed name: Vance S. Vanderburg

Title: Manager

E-mail Address: vance@reliantholdingsltd.com

Date: 11-12-13 Phone: 432-559-7085

OIL CONSERVATION DIVISION

Approved by: Ed Martin

Title: DISTRICT SUPERVISOR

Approval Date: 11/20/2013 Expiration Date: 11/20/2015

Conditions of Approval Attached ☐

ATTACHMENT C-101
RELIANT EXPLORATION & PRODUCTION WELL 2031 18-1-M.

PROPOSED TD: 2600'

BOP PROGRAM: 0-700' None
700 – 2600' 9" annular 3000# Ragan Tuaras

Casing: Surface: 8-5/8" OD 24# J55 8rd ST&C new casing set at 700' 12-1/4" hole Centralizers from TD – Surface, every fourth joint

Production: 5 -1/2" OD new casing from 0-2600'
2600' – 15.5# J55 8rd LTC
7 -7/8" hole – 5 centralizers

* This well will have fiberglass tubing/packer assembly. The fiberglass tubing will at a minimum penetrate the Cimarron formation, with the optimum setting point being the midpoint of the Cimarron formation.

Cement: Surface – Circulate cement with 300sx class C – additives 2# C45, weight of 12.4# per gallon. Yield 2.14 and 1/8# of Celaflake per sx. Tail Cement 100sx class C 2%CACl with 1/8# per sx Celaflake Yield of 1.32# with weight of 14.8# per gallon

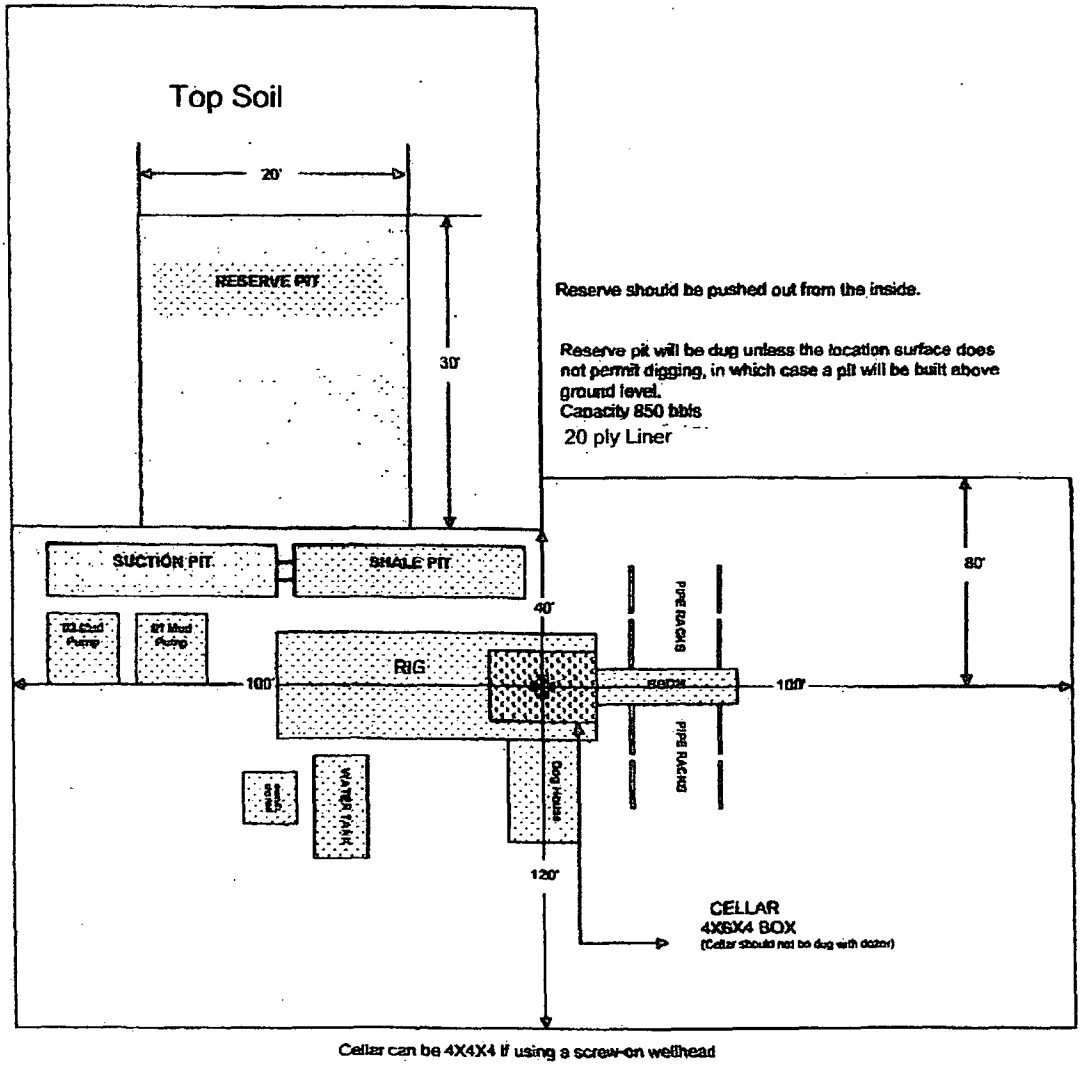
Production- Circulate cement with 400sx class C – additives 2# C45, weight of 12.4# per gallon. Yield 2.14 and 1/8# of Celaflake per sx. Tail Cement 100sx class C 2%CACl with 1/8# per sx Celaflake Yield of 1.32# with weight of 14.8# per gallon

Mud 0-700' Fresh water/native mud. Wt 8.6-9.2ppg, Vis 32.=-36sec

700- 2600' Fresh water/ Starch/Gel with ph control as needed. Wt 9.0-9.2ppg, Vis 28-29 sec

Utilizing Metal Pits with a 30' by 20' reserve lined pit with 20 ply liner.

LOCATION SPECIFICATION AND RIG LAYOUT
FOR STEEL PITS
(PICTURE NOT TO SCALE)



Cellar can be 4X4X4 if using a screw-on wellhead

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 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	Pool Name
30-021-20591	96010	BRAVO DOME CO2 GAS

Property Code	Property Name	Well Number
39771	LIBBY MINERALS LLC 2031	18-1-M

OGRID No.	Operator Name	Elevation
	RELIANT EXPLORATION & PRODUCTION, LLC.	4529.2'

Surface Location

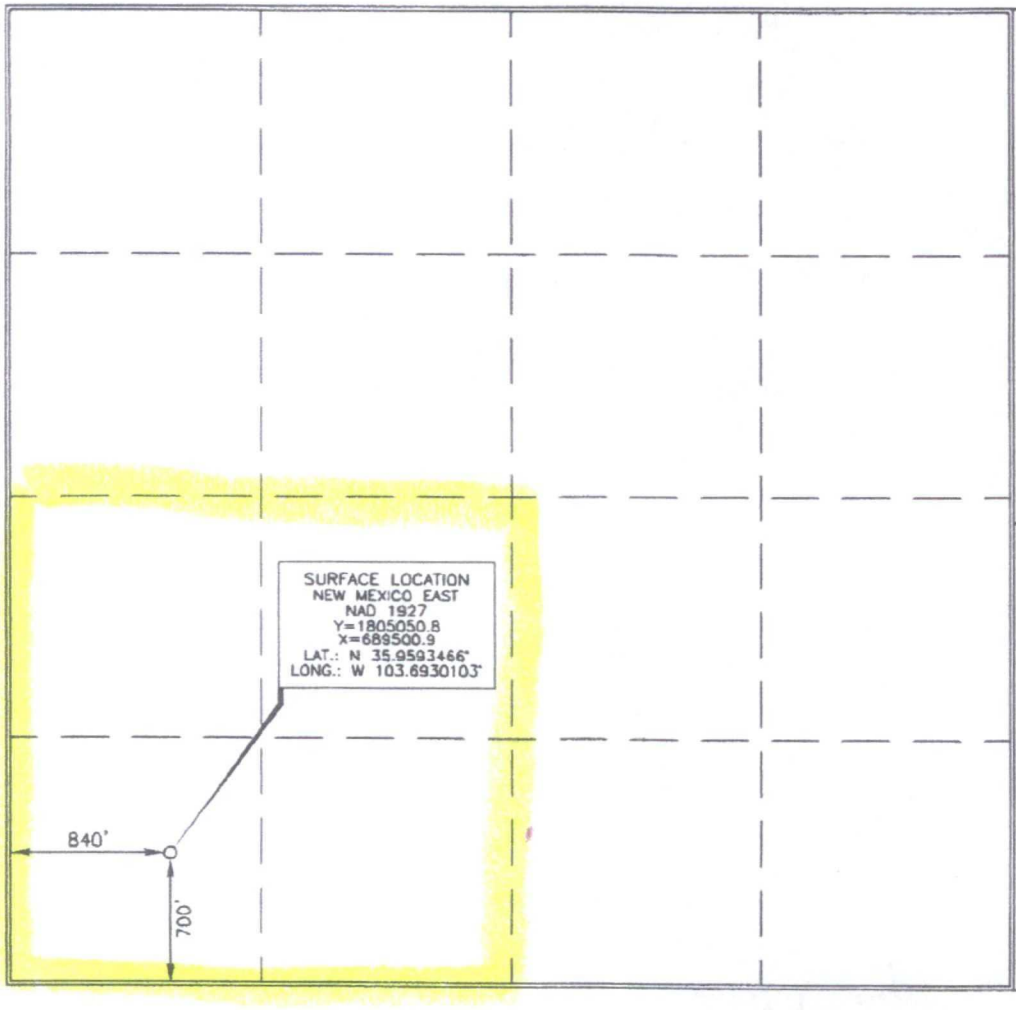
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	18	20 NORTH	31 EAST, N.M.P.M.		700'	SOUTH	840'	WEST	HARDING

Bottom Hole Location If Different From Surface

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

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



OPERATOR CERTIFICATION

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

11-12-13
Signature Date

Vance Van Derburg
Printed Name

Vance@reliantgases.com
E-mail Address

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.

JERRY JASE NEW MEXICO 15079 PROFESSIONAL LAND SURVEYOR

OCTOBER 23, 2013
Date of Survey

Signature and Seal of Professional Surveyor:

11/8/2013

Certificate Number 15079

WO# 131023WL-a (KA)

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 June 6, 2013

For temporary pits, below-grade tanks, and multi-well fluid management pits, submit to the appropriate NMOCD District Office.
For permanent pits submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

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

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

Instructions: Please submit one application (Form C-144) per individual pit, 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: Reliant Exploration & Production, LLC OGRID #: 251905
Address: 10817 West County Road 60 Midland, TX 79707
Facility or well name: Libby Minerals LLC 2031 18-1-M
API Number: 30-021-20591 OCD Permit Number:
U/L or Qtr/Qtr M Section 18 Township 20N Range 31E County: Harding
Center of Proposed Design: Latitude 35.9593466° North Longitude 103.6930103° West
NAD: ☒1927 ☐ 1983
Surface Owner: ☐ Federal ☐ State ☒ Private ☐ Tribal Trust or Indian Allotment

2.
☒ **Pit:** Subsection F, G or J of 19.15.17.11 NMAC
Temporary: ☒ Drilling ☐ Workover
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A ☐ Multi-Well Fluid Management Low Chloride Drilling Fluid ☒ yes ☐ no
☒ Lined ☐ Unlined Liner type: Thickness 20 mil ☒ LLDPE ☐ HDPE ☐ PVC ☐ Other
☒ String-Reinforced
Liner Seams: ☐ Welded ☒ Factory ☐ Other Volume: 850 bbl Dimensions: L 80" x W 80" x D 6"

3.
☐ **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

4.
☐ **Alternative Method:**
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

5.
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

6.

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

☐ Screen ☐ Netting ☐ Other_____

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

7.

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

8.

Variances 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:

☐ Variance(s): Requests must be submitted to the appropriate division district for consideration of approval.

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

9.

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. **Siting criteria does not apply to drying pads or above-grade tanks.**

General siting

Ground water is less than 25 feet below the bottom of a low chloride temporary pit or below-grade tank. ☐ Yes ☐ No ☐ NA Unknown

- ☒ NM Office of the State Engineer - iWATERS database search; ☐ USGS; ☐ Data obtained from nearby wells

Ground water is less than 50 feet below the bottom of a Temporary pit, permanent pit, or Multi-Well Fluid Management pit. ☐ Yes ☐ No ☐ NA Unknown

NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells

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. **(Does not apply to below grade tanks)** ☐ Yes ☒ No

- Written confirmation or verification from the municipality; Written approval obtained from the municipality

Within the area overlying a subsurface mine. **(Does not apply to below grade tanks)** ☐ Yes ☒ No

- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division

Within an unstable area. **(Does not apply to below grade tanks)** ☐ Yes ☒ No

- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map

Within a 100-year floodplain. **(Does not apply to below grade tanks)** ☐ Yes ☒ No

- FEMA map

Below Grade Tanks

Within 100 feet of a continuously flowing watercourse, significant watercourse, lake bed, sinkhole, wetland or playa lake (measured from the ordinary high-water mark). ☐ Yes ☐ No

- Topographic map; Visual inspection (certification) of the proposed site

Within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption;. ☐ Yes ☐ No

- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

Temporary Pit using Low Chloride Drilling Fluid (maximum chloride content 15,000 mg/liter)

Within 100 feet of a continuously flowing watercourse, or any other significant watercourse or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). (Applies to low chloride temporary pits.) ☐ Yes ☒ No

- Topographic map; Visual inspection (certification) of the proposed site

Within 300 feet from a occupied permanent residence, school, hospital, institution, or church in existence at the time of initial application. ☐ Yes ☒ No

- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image

Within 200 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 300feet of any other fresh water well or spring, in existence at the time of the initial application. ☐ Yes ☒ No

NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

Within 100 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Temporary Pit Non-low chloride drilling fluid	
Within 300 feet of a continuously flowing watercourse, or any other significant watercourse, or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No
Within 500 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 1000 feet of any other fresh water well or spring, in the existence at the time of the initial application; - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Permanent Pit or Multi-Well Fluid Management Pit	
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No
Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No

10.

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: _____

11.

Multi-Well Fluid Management Pit 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.

- ☐ 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
- ☐ A List of wells with approved application for permit to drill associated with the pit.
- ☐ 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
- ☐ Hydrogeologic Data - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC

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

12.

Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC

Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

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

13.

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 ☐ Multi-well Fluid Management Pit ☐ 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

14.

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 C 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 H of 19.15.17.13 NMAC
- ☒ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

15.

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 require justifications and/or demonstrations of equivalency. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 25 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Ground water is between 25-50 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Within 100 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No
Within 300 horizontal feet of a private, domestic fresh water well or spring used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☐ No
Within 300 feet of a wetland. US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance	

adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☐ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☐ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes ☐ No
Within a 100-year floodplain. - FEMA map	☐ Yes ☐ No

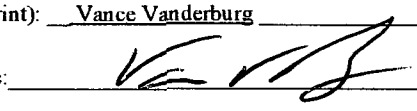
16.
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

- ☐ 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 E of 19.15.17.13 NMAC
- ☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of Subsection K 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 19.15.17.13 NMAC
- ☐ Waste Material Sampling Plan - based upon the appropriate requirements 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 H of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

17.
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): Vance Vanderburg Title: Manager

Signature:  Date: 11-12-13

e-mail address: vance@reliantholdingsltd.com Telephone: 432-559-7085

18.
OCD Approval: ☑ Permit Application (including closure plan) ☐ Closure Plan (only) ☐ OCD Conditions (see attachment)

OCD Representative Signature:  **Approval Date:** 11/20/2013

Title: DISTRICT SUPERVISOR **OCD Permit Number:**

19.
Closure Report (required within 60 days of closure completion): 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:**

20.
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.

21.
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 for private land only)
- ☐ 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

22.

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: _____

Hydrogeological Data

Well Name:
Libby Minerals LLC 2031 18-1-M

Topography:
This location is within the Great Plains Physiographic Province, with flat to rolling prairie and scattered hills and bluffs. The land gradually rises westward, giving way to the frontal ranges of the Rocky Mountains. Elevation of the referenced well is approximately 4529 feet above mean sea level. The location appears to be on a gentle southeastern slope.

Soils:
There is one soil type within 100 feet of the proposed well pad area: Amarillo fine sandy loam. This soil is found on plains. It is a well-drained soil, and the depth to the water table is more than 80 inches. There is no frequency of ponding or flooding.

Source:
Natural Resources Conservation Service. No Date. Web Soil Survey.
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed January 2013.

Geology:
The surface geology within the proposed project area is Alluvium (Holocene). Alluvium consists of silt, sand, and gravel of modern floodplains and streams.

Sources:
U.S. Geological Survey (USGS). 2005. GIS shapefile: nmgeol_dd_polygon.
http://mrdata.usgs.gov/geology/state/metadata/nm.html.
U.S. Geological Survey (USGS). No Date. Correlation of Map Units.
http://cogcc.state.co.us/infosys/Maps/images/Geology250MapLegends/lamarLegend.pdf.

Surface Hydrology:
The proposed well pad appears to be on a gentle, southeastern slope. Ute Creek is located approximately 0.6 mile south of the proposed well pad. Bueyeros Creek is located approximately 0.7 mile southeast of the proposed well pad. There are no apparent drainages between the proposed well pad and these creeks.

Ground Water Hydrology:
This location is within central Harding County, New Mexico, within the Great Plains Physiographic Province. The High Plains aquifer extends westward into eastern Harding County, but in the proposed project region there is no principal aquifer. Aquifers do not exist here, yield too little water to wells to be significant, or yield sufficient water to supply local requirements but are not extensive enough to be classified as a major aquifer.

Depth to groundwater is unknown at this location, because the nearest recorded well with available water-depth information is approximately 1.8 miles from the location (see Siting Criteria Map I, attached). The nearest water wells identified on the OSE shapefile are listed below:

Well	Distance/Direction from Proposed Project Area	Elevation	Depth to Water
TU 01361	~1.8 miles northwest	4580 feet	33 feet
TU 01363	~2.4 miles south-southeast	4480 feet	24 feet
6 TU wells	~1.4 to 4.0 miles in various directions	varied	No Data

Sources:

United States Geological Survey. 2001. Groundwater Atlas of the United States: Arizona, Colorado, New Mexico and Utah. USGS Publication HA 730-C. http://capp.water.usgs.gov.

New Mexico Office of the State Engineer. 2011. GIS shapefile: ose_wells_July2011. http://www.ose.state.nm.us/water_info_data.html.

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Siting Criteria Compliance Demonstrations

1. Depth to groundwater (should not be less than 25 feet):
Depth to groundwater is unknown at this location, because the nearest recorded well with available water-depth information is approximately 1.8 miles from the location (see Siting Criteria Map I, attached). The nearest water wells identified on the OSE shapefile are listed below:

Well	Distance/Direction from Proposed Project Area	Elevation	Depth to Water
TU 01361	~1.8 miles northwest	4580 feet	33 feet
TU 01363	~2.4 miles south-southeast	4480 feet	24 feet
6 TU wells	~1.4 to 4.0 miles in various directions	varied	No Data

2. Presence within incorporated area (should not be within incorporated municipal boundaries or within defined municipal fresh water well field covered under municipal ordinance):
Topographic maps, aerial photos, and OSE shapefiles indicate the pit would not be within an incorporated area or municipal fresh water well field (see Siting Criteria Maps 1 and 2).

3. Location above subsurface mine (should not overlie a subsurface mine):
The pit would not overlie a mine. The New Mexico Energy, Minerals, and Natural Resources Department Mines, Mills, and Quarries map website is currently not available. However, the 2009 Mines, Mills, and Quarries map, a topographic map, and an aerial photo indicate that there are no subsurface mines in the area (see Mines, Mills, and Quarries Map).

4. Presence within unstable area (should not be within an unstable area):
A topographic map and aerial photo indicate the location would not be within an unstable area. The location would be on a gentle slope (See Siting Criteria Maps 1 and 2).

5. Presence within floodplain (should not be within a 100-year floodplain):
The location has not been mapped by FEMA (see FEMA Map Service Center screenshot, attached). Therefore, the proposed pit is not located within a FEMA-designated 100-year floodplain.

6. Distance to watercourse (should not be within 100 feet of a continuously flowing watercourse or any other significant watercourse, or within 200 feet of a lakebed, sinkhole, or playa lake):
According to a topographic map and aerial photo, there are no significant watercourses, lakebeds, sinkholes, or playa lakes within 200 feet of the proposed pit (see Siting Criteria Maps 1 and 2).

7. Distance to buildings (should not be within 300 feet of an occupied permanent residence, school, hospital, institution, or church):
An aerial photo indicates that the pit would not be within 300 feet of any of these locations (see Siting Criteria Map 2).

8. Distance to springs or wells (should not be within 200 feet of a spring or private, domestic fresh water well used by less than five households, or within 300 feet of any other fresh water well or spring):
Topographic maps and OSE shapefiles indicate the pit would not be within 300 feet of any recorded well or spring (see Siting Criteria Maps 1 and 2).

9. Distance to wetlands (should not be within 100 feet):
The U.S. Fish and Wildlife Service National Wetlands Inventory indicates that there are no wetlands within 100 feet of the proposed well pad. Topographic maps, aerial photos, and soil data also indicate that there are no wetlands within 100 feet of the proposed pit (see National Wetlands Inventory Map, Hydrogeological Data – Soils, and Siting Criteria Maps 1 and 2).

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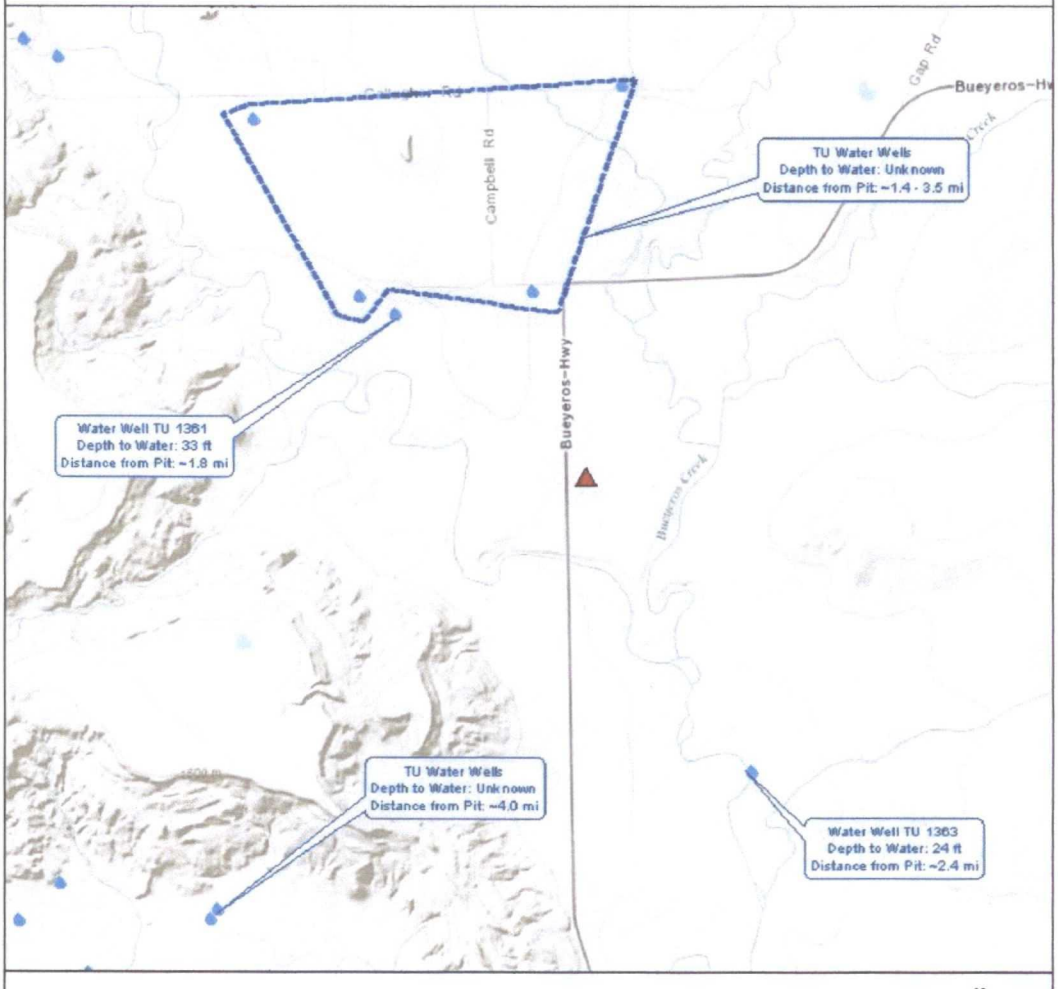
Siting Criteria Map 1
Reliant Exploration & Production, LLC
Libby Minerals LLC 2031 18-1-M
T20N, R31E, Section 18, NMPM
Harding County, New Mexico



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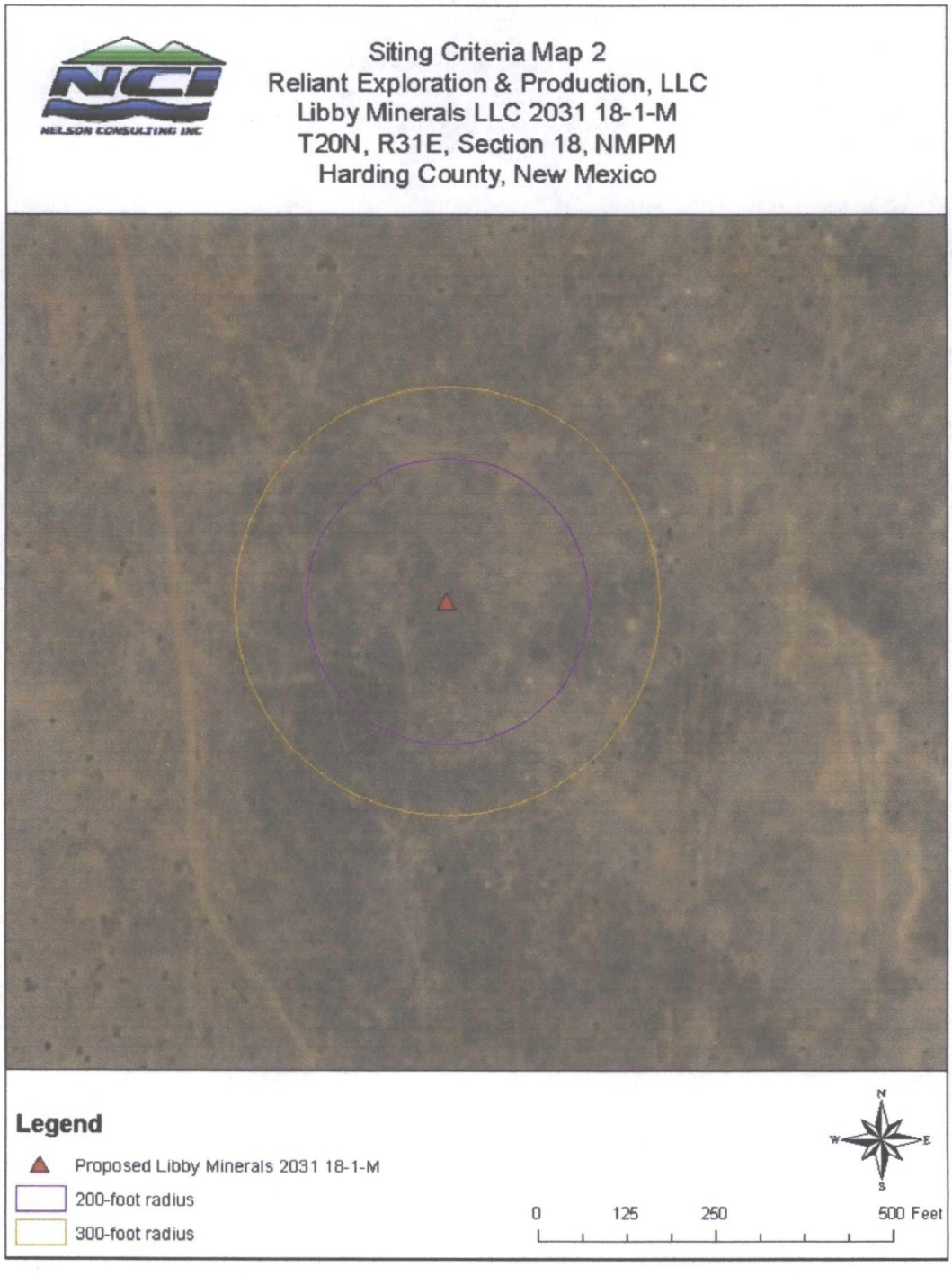

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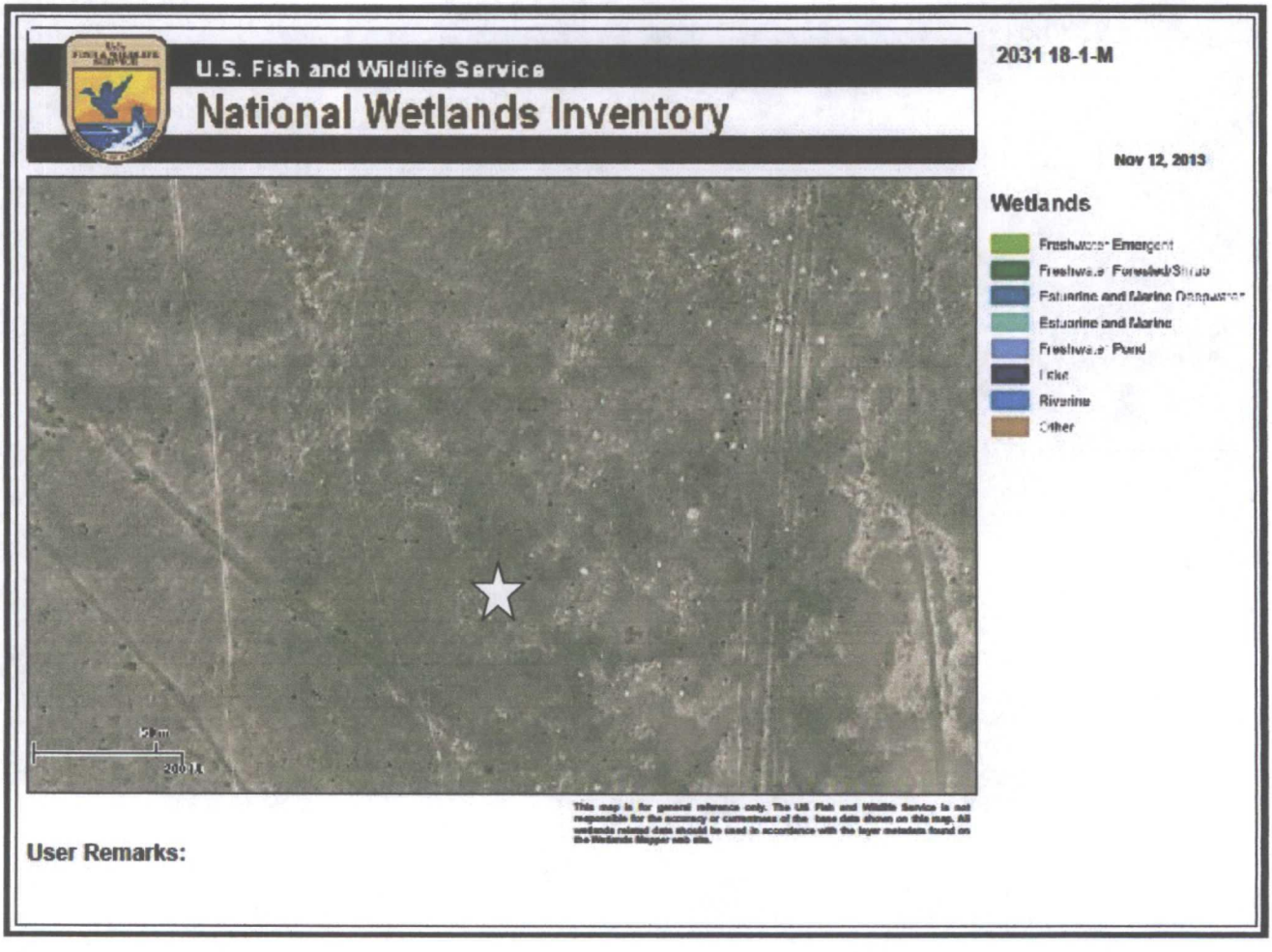
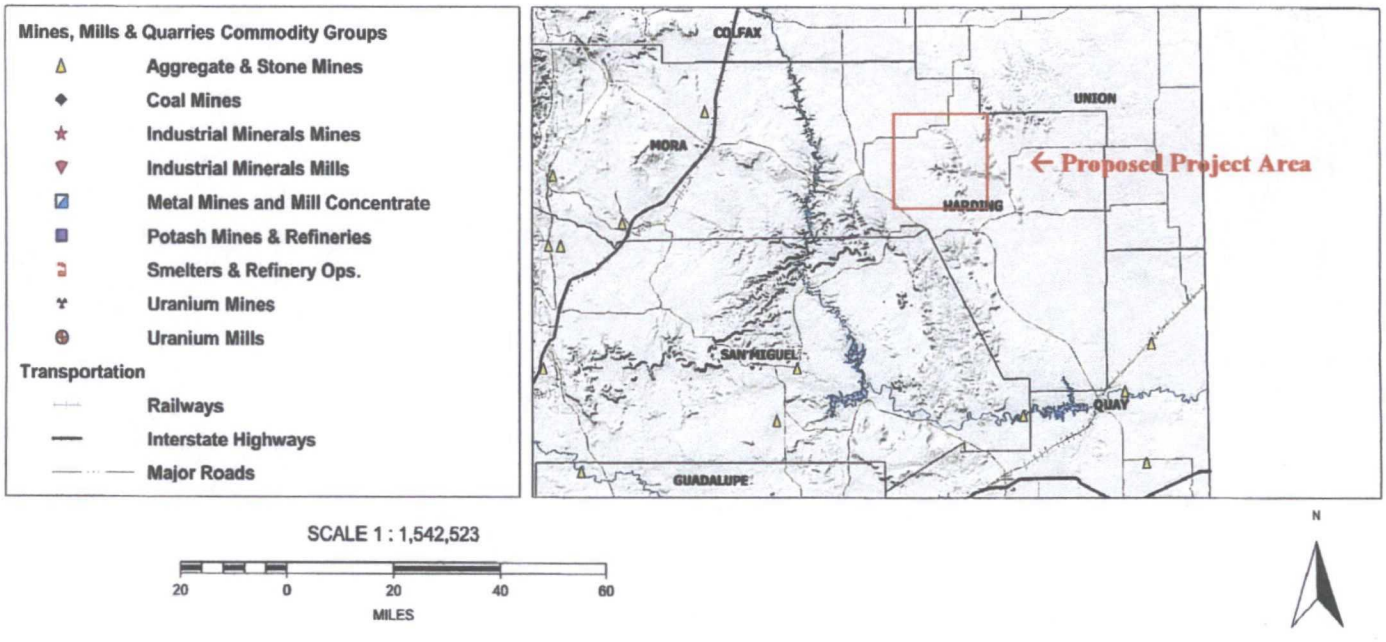

U.S. Fish and Wildlife Service
National Wetlands Inventory
2031 18-1-M
Nov 12, 2013
Wetlands
Freshwater Emergent
Freshwater Forested/Shrub
Estuarine and Marine Deepwater
Estuarine and Marine
Freshwater Pond
Lake
Riverine
Other
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.
User Remarks:

MINES, MILLS, AND QUARRIES IN NEW MEXICO

MMQonline Public Version

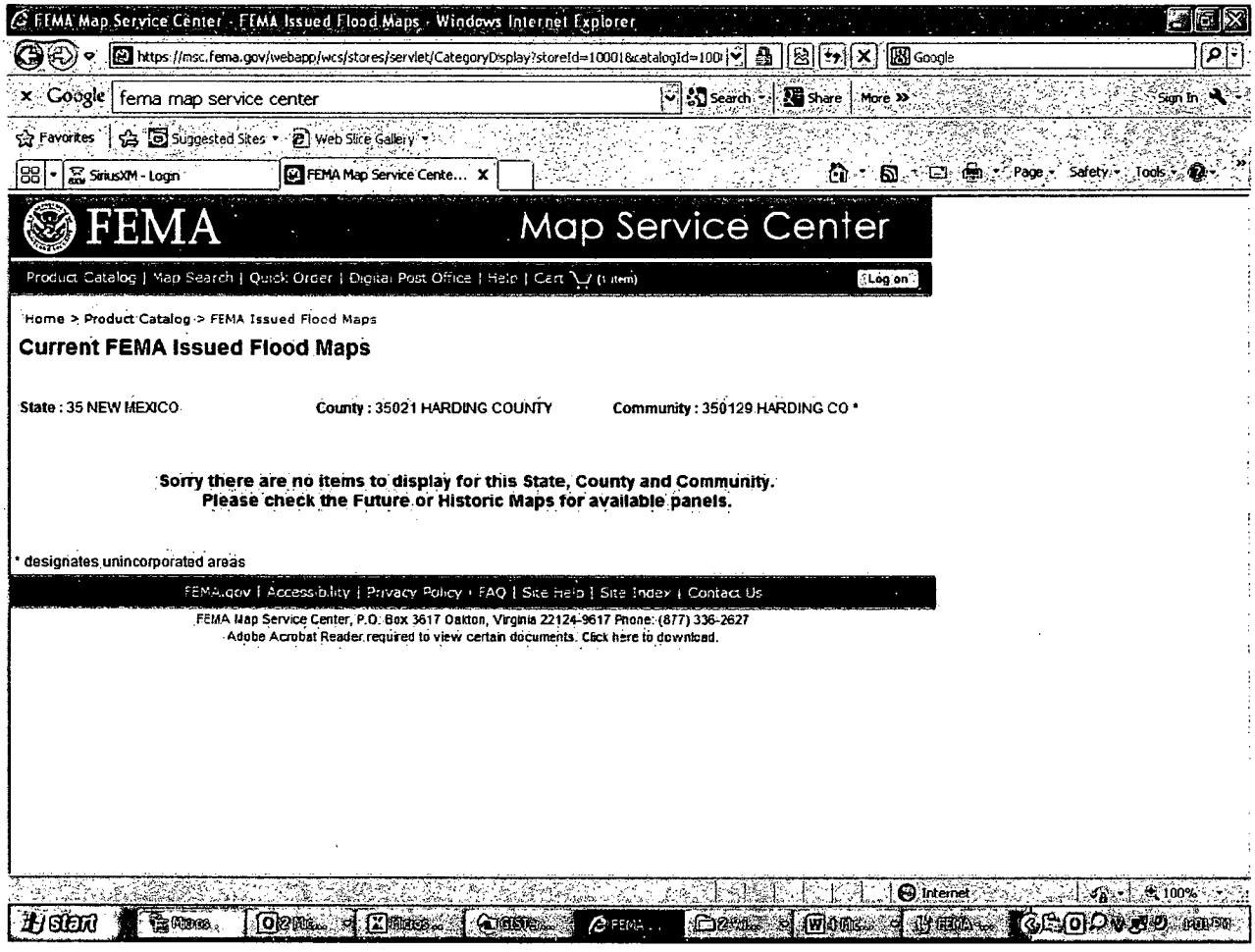


http://www.emnrd.state.nm.us/MMD/MMQonline/MMQonline-PUBLIC-PROD.mwf

Tuesday, March 31, 2009 11:13 AM

Source:

New Mexico Energy, Minerals and Natural Resources Department, Division of Mining and Minerals. Database. 2008. http://www.emnrd.state.nm.us/MMD/MRRS/MinesMillsQuarriesWebMap.htm. Accessed March 2009.


FEMA Map Service Center - FEMA Issued Flood Maps - Windows Internet Explorer
https://msc.fema.gov/webapp/wcs/stores/servlet/CategoryDisplay?storeId=10001&catalogId=100
fema map service center
Favorites
Suggested Sites
Web Slice Gallery
SiriusXM - Login
FEMA Map Service Cente...
FEMA
Map Service Center
Product Catalog | Map Search | Quick Order | Digital Post Office | Help | Cart (1 item)
Log on
Home > Product Catalog > FEMA Issued Flood Maps
Current FEMA Issued Flood Maps
State : 35 NEW MEXICO
County : 35021 HARDING COUNTY
Community : 350129 HARDING CO *
Sorry there are no items to display for this State, County and Community.
Please check the Future or Historic Maps for available panels.
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Reliant Temporary Pit Design Plan
(Based on Appropriate Requirements of 19.15.17.11 NMAC)

The pit would be designed and constructed to ensure the confinement of liquids.

Prior to constructing the pit, topsoil would be stripped and stockpiled for use as final cover or fill at the time of closure.

The pit would be designed to prevent run-on of surface water. A berm, ditch, proper sloping, or other diversion would be constructed around the pit to prevent run-on of surface water. During drilling operations, the edge of the pit adjacent to the drilling or workover rig may not have protection if the pit is being used to collect liquids escaping from the rig and run-on will not result in a breach of the pit.

The volume of the pit would not exceed 10 acre-feet, including freeboard.

The pit would have a properly constructed foundation and interior slopes consisting of a firm, unyielding base. The base would be smooth and free of rocks, debris, sharp edges, or irregularities to prevent the rupture or tearing of the liner. Slopes would be no steeper than two horizontal feet to one vertical foot (2H:1V). If an alternative slope is needed, the NMOCD district office would need to approve the alternative, based on Reliance's demonstration that it could construct and operate the pit in a safe manner to prevent contamination of fresh water and protect public health and the environment.

Excavated materials from the pit would not be placed within 100 feet of a significant watercourse; within 200 feet of a lakebed, sinkhole, or playa lake; within 100 feet of a wetland; or within a 100-year floodplain.

Pit liner:

- The pit would have a geomembrane liner with 20-mil, string-reinforced LLDPE or its equivalent (approved by the NMOCD district office). This liner would be composed of an impervious, synthetic material resistant to petroleum hydrocarbons, salts, acidic and alkaline solutions, and ultraviolet light. The liner would comply with EPA SW-846 method 9090A.
- Liners would be oriented up and down, not across, slopes.
- Prior to field seaming, liners would be overlapped four to six inches. Liner seams would be minimized in corners and irregularly shaped areas. Qualified personnel would perform field-welding and testing of liner seams. Factory-welded seams would be used where possible.
- Construction would avoid excessive stress-strain on the liner.
- Geotextile would be used under the liner where needed to reduce localized stress-strain or protuberances that may compromise the liner's integrity.
- The edges of all liners would be anchored in the bottom of a compacted, earth-filled trench that is at least 18 inches deep (unless anchoring to encountered bedrock provides equivalent anchoring).
- The liner would be protected from any fluid force or mechanical damage at any point of discharge into or suction from the pit.

If an adequate perimeter fence does not already prevent unauthorized access to the well site, the pit would be fenced or enclosed in a manner that deters unauthorized access. The fence would be at least four foot high with at least four strands of barbed wire evenly spaced between 1 and 4 feet. Fences would be maintained in good repair. During drilling or workover operations, three sides of the pit would be fenced; the side adjacent to the drilling or workover rig would remain open only during such operations.

An upright sign (at least 12-by-24 inches with lettering at least 2 inches high) would be placed conspicuously on the fence surrounding the pit, unless the site has an existing well sign (complying with 19.15.16.8 NMAC). The sign would be posted in a manner and location such that the legend could be easily read, and would contain the following information: operator's name, legal location (quarter-quarter or unit letter, section, township, and range), and emergency telephone number(s).

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Reliant Temporary Pit Operating & Maintenance Plan
(Based on Appropriate Requirements of 19.15.17.12 NMAC)

The pit would be maintained to contain liquids and solids, maintain the integrity of the liner, prevent contamination of fresh water, and protect public health and the environment.

Pit operation would prevent the collection of surface water run-on.

All drilling fluids would be recycled, reused, reclaimed, or disposed of in a manner approved by NMOCD rules.

Only fluids used or generated during the drilling, completion, or workover processes would be discharged into the pit. Hazardous waste would not be discharged into or stored in the pit. The pit would remain free of miscellaneous solid waste or debris. If the pit liner's integrity is compromised above the liquid's surface, Reliant would repair or initiate liner replacement within 48 hours of discovery; alternatively, a variance would be sought from the NMOCD district office.

If the pit develops a leak or if any penetration of the liner occurs below the liquid's surface, all liquid above the damage or leak line would be removed within 48 hours, the NMOCD district office would be notified, and the liner would be repaired or replaced.

The injection or withdrawal of liquids from the pit would be accomplished via a header, diverter, or other hardware that prevents damage to the liner by erosion, fluid jets, or the impact from installation and removal of hoses or pipes.

An oil-absorbent boom or other device would be installed and maintained onsite to contain an unanticipated release.

At least two feet of freeboard would be maintained. In temporary, extenuating circumstances, a freeboard of less than two feet could be maintained; in such a circumstance, a log would be maintained describing the situation. This log would be made available to the NMOCD, upon request.

The pit would be inspected at least once daily while the drilling or workover rig is onsite. Thereafter, the pit would be inspected weekly as long as liquids remain within it. An inspection log would be maintained and made available to the NMOCD district office upon request.

Immediately after cessation of a drilling or workover operation, any visible layer of oil would be removed from the surface of the pit.

All free liquids would be removed from the pit within 60 days from release of the drilling or workover rig. On form C-105 or C-103, the date of the drilling or workover rig's release would be noted. If necessary, an extension of up to two months could be requested from the NMOCD district office, not to exceed the temporary pit life span (defined in 19.15.17.7.R NMAC).

Any liquids used for cavitation would be removed from the pit within 48 hours after completing cavitation. If it is not feasible to access the location within 48 hours, this would be demonstrated to the NMOCD district office's satisfaction and additional time would be requested.

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Reliant Temporary Pit Closure Plan

(Based on Appropriate Requirements of Subsection C, 19.15.17.9 NMAC & 19.15.17.13 NMAC)

The pit would be closed within six months of the date that the drilling or workover rig is released. The release date would be noted on Form C-105 or C-103, filed with the NMOCD upon the well or workover's completion. The NMOCD district office could grant an extension not to exceed three months.

Closure Notice:

At least 72 hours but not more than one week before closure operations begin:

- The surface owner would be notified of the closure by certified mail with return receipt requested; the address indicated on county tax records would be used. The notice would include the operator's name, well name and number, well API number, and well location (unit letter, section, township, and range).
- The NMOCD district office would be notified of the closure verbally and in writing. The notice would include the operator's name, well name and number, well API number, and well location (unit letter, section, township, and range).

Approval of the closure plan would be obtained prior to closing the pit.

All contents and, if applicable, synthetic liners from the pit would be removed prior to closure. Liquids would be disposed of at the Sundance Services, Inc. Parabo Disposal Facility (Permit No. 010003).

Soil Testing:

The soils beneath the pit would be tested. A minimum five-point composite sample would be collected under the liner. The sample would include any area that is obviously stained, wet, or showing evidence of contamination. The samples would be sent to an approved laboratory and analyzed for benzene, total BTEX, TPH, the GRO and DRO combined fraction, and chlorides. Per Table I of 19.15.17.13 NMAC, the following constituents, methods, and constituent limits would apply:

- Benzene (as determined by EPA SW-846 method 8021B or 8015M or other NMOCD-approved EPA method): 10 mg/kg (numerical limits or background concentration, whichever is greater)
- BTEX (as determined by EPA SW-846 method 8021B or 8260B or other NMOCD -approved EPA method): 50 mg/kg (numerical limits or background concentration, whichever is greater)
- TPH (as determined by EPA SW-846 method 418.1 or other NMOCD -approved EPA method): 2500 mg/kg (numerical limits or background concentration, whichever is greater)
- GRO and DRO combined fraction (as determined by EPA SW-846 method 8015M): 500 mg/kg (numerical limits or background concentration, whichever is greater)
- Chlorides (ads determined by EPA method 300.0): 10,000 mg/kg (numerical limits or background concentration, whichever is greater)

If the above constituent limits are met, the pit would be backfilled with non-waste-containing, uncontaminated, earthen material. If any of the above constituents exceeds the limits, the NMOCD would review the results and could require additional delineation; in such a case, Reliant would await NMOCD approval before proceeding with pit closure.

Areas reasonably needed for production or subsequent drilling operations would be compacted and covered, paved, or otherwise stabilized. These areas would be maintained in such a way as to minimize dust and erosion.

Reclamation:

Per Subsection H of 19.15.17.13 NMAC, all areas associated with the pit that would not be needed for production or subsequent drilling operations would be substantially restored to a safe and stable condition that blends with the

surrounding, undisturbed area. These areas would be reclaimed as early and as nearly as practicable to their original condition and maintained to control dust and minimize erosion. If an alternative to these requirements is necessary to prevent erosion or to protect fresh water, human health, and the environment, this alternative would be proposed to the surface owner. The proposed alternative, with written documentation demonstrating that the surface owner approves the alternative, would be submitted to the NMOCD for approval. Otherwise, the following steps would be followed:

- The location would be recontoured so as to approximate the original contour and blend with the surrounding topography.
- Soil cover would consist of the background thickness of topsoil or one foot of material suitable for establishing vegetation at the site, whichever is greater. Topsoils and subsoils would be replaced in their original relative positions. Soil cover would be constructed to the site's existing grade and would be contoured so as to achieve erosion control, long-term stability, and preservation of surface water flow patterns.
- In the first favorable growing season following pit closure, the disturbed area would be seeded.
- Reclamation would be considered complete when all surface-disturbing activities at the site are completed and a uniform vegetative cover has been established. This cover would have a life-form ratio of plus or minus 50% of pre-disturbance levels and a total percent plant cover of at least 70% of pre-disturbance levels (excluding noxious weeds).
- The NMOCD would be notified when reclamation and successful revegetation has been achieved.

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