

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 April 3, 2017

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.

1

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: Southland Royalty Company LLC OGRID #: 370292
 Address: 400 West 7TH Street Fort Worth, TX 76102
 Facility or well name: Ballard #010
 API Number: 30-045-05844 OCD Permit Number: _____
 U/L or Qtr/Qtr L Section 15 Township 26N Range 09W County: San Juan
 Center of Proposed Design: Latitude 36.4860191 Longitude -107.7826157 NAD83
 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 _____ mil LLDPE HDPE PVC Other _____
 String-Reinforced
 Liner Seams: Welded Factory Other _____ Volume: _____ bbl Dimensions: L _____ x W _____ x D _____

Pre-2008 BGT, No Design Plan Required (Tank showed integrity)
 However, since there is no attached design plan if the tank has to be retrofitted or replace a modification will be required to include a Design plan.

3.
 Below-grade tank: Subsection I of 19.15.17.11 NMAC
 Volume: 95 bbl Type of fluid: Produced Water
 Tank Construction material: Steel
 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 Per BLM Specifications _____

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.
Variations 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.

<u>General siting</u>	
<u>Ground water is less than 25 feet below the bottom of a low chloride temporary pit or below-grade tank.</u> - <input type="checkbox"/> NM Office of the State Engineer - iWATERS database search; <input type="checkbox"/> USGS; <input type="checkbox"/> Data obtained from nearby wells	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
<u>Ground water is less than 50 feet below the bottom of a Temporary pit, permanent pit, or Multi-Well Fluid Management pit.</u> NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
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) - Written confirmation or verification from the municipality; Written approval obtained from the municipality	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within the area overlying a subsurface mine. (Does not apply to below grade tanks) - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within an unstable area. (Does not apply to below grade tanks) - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within a 100-year floodplain. (Does not apply to below grade tanks) - FEMA map	<input type="checkbox"/> Yes <input type="checkbox"/> No
<u>Below Grade Tanks</u>	
Within 100 feet of a continuously flowing watercourse, significant watercourse, lake bed, sinkhole, wetland 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 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption;. - 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
<u>Temporary Pit using Low Chloride Drilling Fluid</u> (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.) - Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 300 feet from a occupied 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 type="checkbox"/> No
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. NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input type="checkbox"/> No

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 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

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	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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	<input type="checkbox"/> Yes <input 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 type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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	<input type="checkbox"/> Yes <input 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 type="checkbox"/> 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	<input type="checkbox"/> Yes <input type="checkbox"/> No
Written confirmation or verification from the municipality; Written approval obtained from the municipality	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 300 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 type="checkbox"/> No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance	<input type="checkbox"/> Yes <input type="checkbox"/> No

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): Vanessa Fields Title: Agent Regulatory Compliance Manager

Signature: Vanessa Fields Date: 3/27/2020

e-mail address: vanessa@walsheng.net Telephone: 505-787-9100

18. **OCD Approval:** Permit Application (including closure plan) Closure Plan (only) OCD Conditions (see ^{FRONT} ~~attachment~~)

OCD Representative Signature: [Signature] Approval Date: 6/23/2020

Title: Environmental Specialist OCD Permit Number: 1

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: _____

Southland Royalty Company LLC
Sitting Criteria & Hydrogeological Report
Ballard #010

Site Specific Hydrogeology

The Ballard #010 well is not located in an unstable area. The location is not situated over a mine or a steep slope. (See Figure B)

The BGT will not be located within 100 feet of a continuously flowing water course or within 100 feet of any other significant water course, lakebed, sinkhole, or playa lake (See Figure A). The site is not within 100 feet of any reported riparian areas or wetlands (see attached USFWS wetland map); within 200 feet of any private, domestic fresh water well or spring; or within 200 feet of any other fresh water well or spring (see Figure B).

The BGT will not be within any incorporated municipal boundaries or defined municipal freshwater well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. The location of the proposed pit is not within 200 feet of any permanent residence, school, hospital, institution, or church.

The Ballard DTG is measured at 55'. (See Figure A)

Regional Geological context:

The Nacimiento Formation is of Paleocene age (Baltz, 1967, p. 35). It crops out in a broad band inside the southern and western margins of the central basin and in a narrow band along the west face of the Nacimiento Uplift. The Nacimiento is a nonresistant unit and typically erodes to low, rounded hills or forms badland topography.

The Nacimiento Formation occurs in approximately only the southern two-thirds of the San Juan Basin where it conformably overlies and inter-tongues with the Ojo Alamo Sandstone (Fassett, 1974, p. 229). The Nacimiento Formation grades laterally into the main part of the Animas Formation (Fassett and Hinds, 1971, p. 34); thus, in this area, the two formations occupy the same stratigraphic interval.

Strata of the Nacimiento Formation were deposited in lakebeds in the central basin area with lesser deposition in stream channels (Brimhall, 1973, p. 201). In general, the Nacimiento consists of drainers-bedded black and gray shale with discontinuous, white, medium- to very coarse-grained arkose sandstone (Stone et al., 1983, p.30). Stone et al. indicated that the formation may contain more sandstone than commonly reported because some investigators assume the slope-forming strata in the unit area are shales, whereas in many places the strata actually are poorly consolidated sandstones.

Total thickness of the Nacimiento Formation ranges from about 500 to 1,300 feet. The unit generally thickens from the basin margins toward the basin center (Steven et al., 1974). The sandstone deposits within the Nacimiento Formation are much thinner than the total thickness of the formation because their environment of deposition was localized stream channels (Brimhall, 1973, p. 201). The thickness of the combined San Jose, Animas, and Nacimiento Formations ranges from 500 to more than 3,500 feet.

Hydraulic Properties:

Southland Royalty Company LLC
Sitting Criteria & Hydrogeological Report
Ballard #010

Reported well yields for 53 wells completed in either the Animas or Nacimiento Formations range from 2 to 90 gallons per minute and the median yield is 7.5 gallons per minute. The primary use of water from Nacimiento and Animas Formations is domestic and livestock supplies. There are no known aquifer tests for the Animas or Nacimiento Formations, but specific capacities reported for six wells range from 0.24 to 2.30 gallons per minute per foot of drawdown (Levings et al., 1990).

The Animas and Nacimiento Formations are in many ways hydrologically similar to the San Jose Formation because sands in both units produce approximately the same quantities of water. However, the greater percentage of fine materials in the Animas and Nacimiento Formations may restrict downward vertical leakage to the Ojo Alamo Sandstone or Kirtland Shale. The poorly cemented fine material is highly erodible, forms a badland terrain, and supports only spotty vegetation. These conditions are more conducive to runoff than retention of precipitation.

References:

Baltz, E.H., 1967, Stratigraphy and regional tectonic implications of part of Upper Cretaceous rocks, east central San Juan Basin, New Mexico: USGS Professional Paper 552, 101 p.

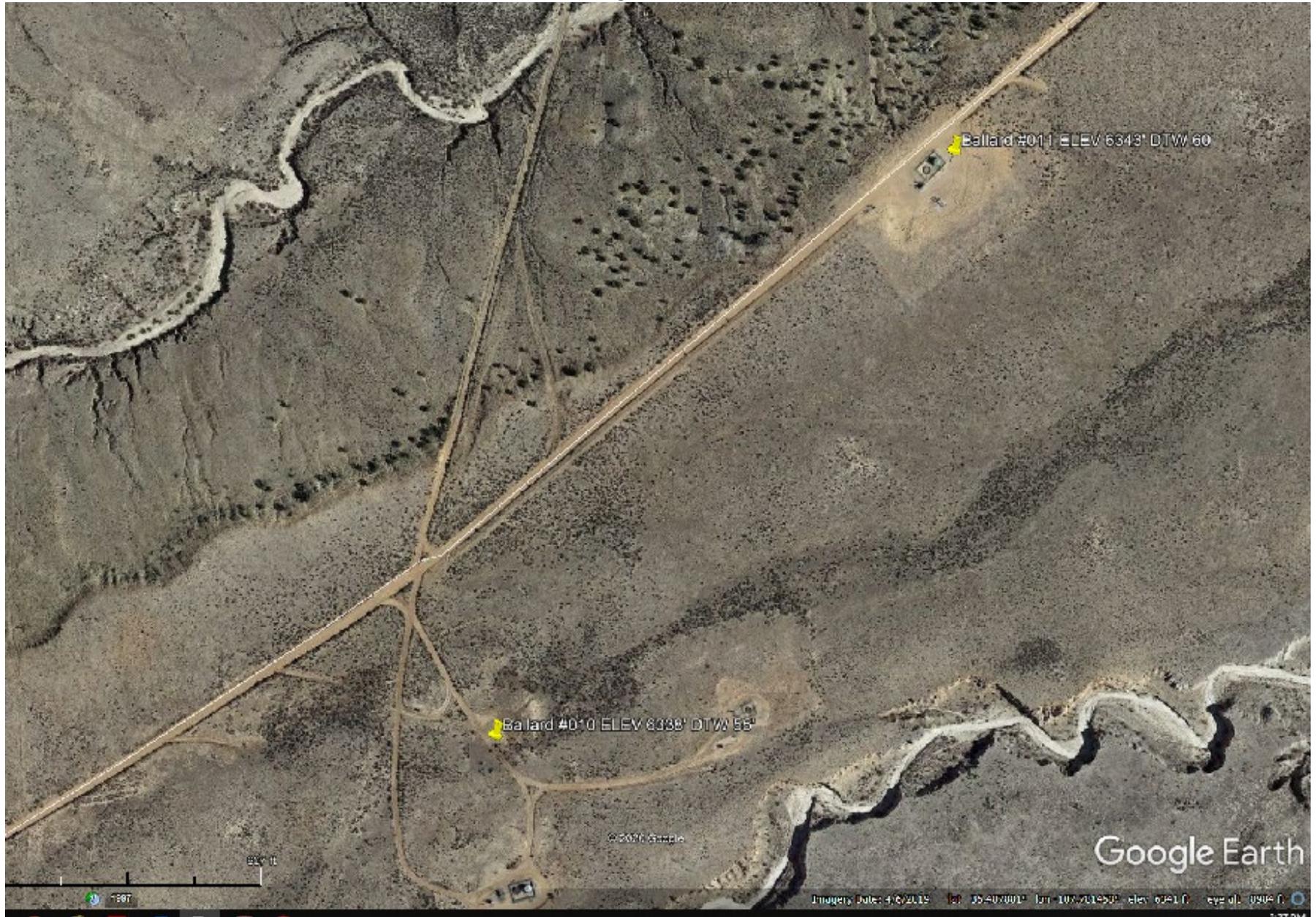
Brimhall, R.M., 1973, Ground-water hydrology of Tertiary rocks of the San Juan Basin, New Mexico, in Fassett, J.E., ed., Cretaceous and Tertiary rocks of the Southern Colorado Plateau: Four Corners Geological Society Memoir, p. 197-207.

Fassett, J.E., 1974, Cretaceous and Tertiary rocks of the eastern San Juan Basin, New Mexico and Colorado, in Guidebook of Ghost Ranch, central-northern New Mexico: New Mexico Geological Society, 25th Field Conference, p. 225-230.

Fassett, J.E., and Hinds, J.S., 1971, Geology and fuel resources of the Fruitland Formation and Kirtland Shale of the San Juan Basin, New Mexico and Colorado: USGS Professional Paper 676, 76 p.

Levings, G.W., Craigg, S.d., Dam, W.L., Kernodle, J.M., and Thorn, C.R., 1990, Hydrogeology of the San Jose, Nacimiento, and Animas Formations in the San Juan structural basin, New Mexico, Colorado, Arizona,

Ballard #010
Figure A
Sitting Criteria



11- 30-045-13318

7- 30-045-05863

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDAIN OIL Location: Unit NW Sec. 15 Twp 26 Rng 9

Name of Well/Wells or Pipeline Serviced BA::ARD #11, #7
cps 1021w

Elevation 6290' Completion Date 8/14/75 Total Depth 260' Land Type* N/A

Casing, Sizes, Types & Depths N/A

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amounts used
N/A

Depths & thickness of water zones with description of water when possible:
Fresh, Clear, Salty, Sulphur, Etc. WET 60'-80'

Depths gas encountered: N/A

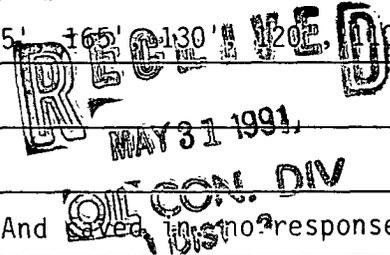
Type & amount of coke breeze used: 2500 lbs.

Depths anodes placed: 215', 205', 195', 185', 175', 165', 155', 145', 130', 120', 110', 100'

Depths vent pipes placed: N/A

Vent pipe perforations: 215'

Remarks: gb #1 ALL ANODES GOT TIGHT. BELEIVE SAnd saved in no response from any anode.



If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee. If Federal or Indian, add Lease Number.



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW#### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,

O=orphaned,

C=the file is (quarters are 1=NW 2=NE 3=SW 4=SE)

closed) (quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 6	Q 16	Q 4	Sec	Tws	Rng	X	Y	DepthWell	DepthWater	Water Column
SJ00412		SJ	SJ	2	4	16	26N	09W		250288	4041518*	202	65	137

Average Depth to Water: **65 feet**

Minimum Depth: **65 feet**

Maximum Depth: **65 feet**

Record Count: 1

PLSS Search:

Section(s): 16

Township: 26N

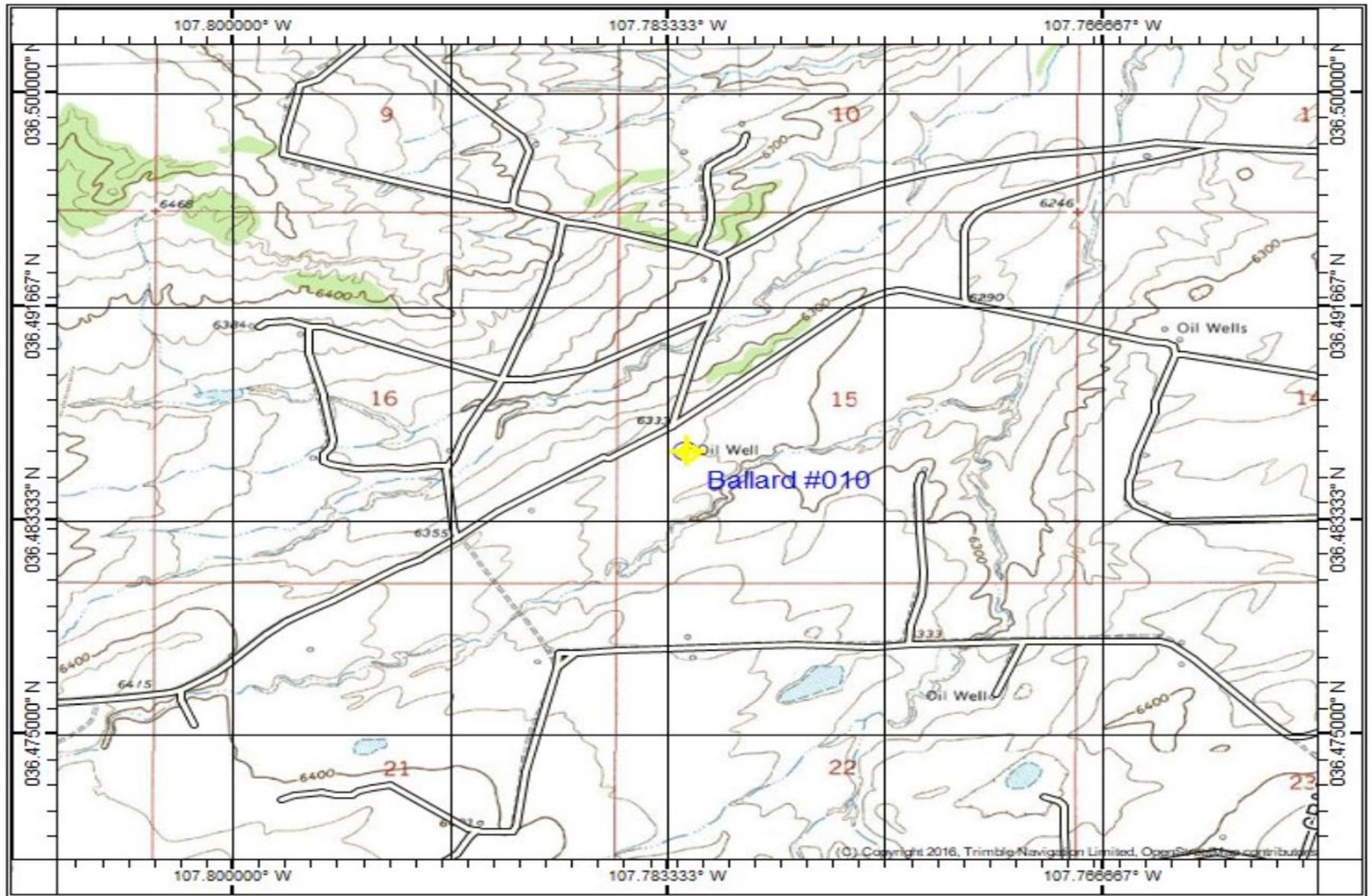
Range: 09W

*UTM location was derived from PLSS - see Help

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

3/1/20 2:13 PM

WATER COLUMN/AVERAGE DEPTH TO
WATER



Ballard #010 Mine Maps

Coal Mine Resources in New Mexico NM Mining and Minerals Division EMNRD Home Help Other MMD GIS & Maps

Search: 36.4860191, -107.782615
Show search results for 36.4860191,...

Print
Map title: Coal Mines in New Mexico
Layout: Letter ANSI A Portrait
Format: PDF
Advanced Print

Search result
36°29'09.668"N 107°46'57.414"W
Zoom to

600ft
-107.80136479 Degrees

National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, Swire

Below Grade Tank Operating & Maintenance Plan

Ballard #010

U/L: L, Section 15, TWN: 26N. RNG: 09W

San Juan County, New Mexico

As stipulated in Rule 19.15.17 NMAC, the following information adheres to the requirements established in closing below-grade tanks (BGTs) on Southland Royalty Company LLC, L.L.C well sites. This plan will address the standard protocols and procedures for closure of BGTs.

1. SOUTHLAND will operate and maintain a BGT to contain liquids and solids and maintain the integrity of the liner, liner system and secondary containment system to prevent contamination of fresh water and protect public health and environment. SOUTHLAND will accomplish this by performing an inspection on a monthly basis.
2. SOUTHLAND will not discharge into or store any hazardous waste in the BGT.
3. SOUTHLAND shall operate and install the below-grade tank to prevent the collection of surface water run-on. SOUTHLAND has built in shut off devices that do not allow a below grade tank to overflow. SOUTHLAND constructs berms and above ground to keep from surface water run-on.
4. As per 19.17.15.12 Subsection D, Paragraph 3, SOUTHLAND will inspect the below-grade tank at least monthly reviewing several items which include
 - 1) containment berms adequate and no oil present
 - 2) tanks had no visible leaks or sign of corrosion.
 - 3) tank valves, flanges, and hatches had no visible leaks and 4) no evidence of significant spillage of produced liquids. If detected on either inspection, SOUTHLAND shall remove any visible or measurable layer of oil from the fluid surface of a below-grade tank to prevent significant accumulation of oil overtime. The written record of the monthly inspections will include the items listed above and will be maintained for five years.

5. SOUTHLAND shall require and maintain adequate freeboard to prevent overtopping of the below-grade tank of the below-grade tank.

6. 6. If the below grade tank develops a leak, or if any penetration of the pit liner or below grade tank, occurs below the liquid's surface, then SOUTHLAND shall remove all liquid above the damage or leak line within 48 hours. SOUTHLAND shall notify the appropriate district office. SOUTHLAND shall repair or replace the pit liner or below grade tank, within 48 hours of discovery. If the below grade tank or pit liner does not demonstrate integrity, SOUTHLAND shall promptly remove and install a below grade tank or pit liner that complies with Subsection I of 19.15.17.11 NMAC. SOUTHLAND shall notify the appropriate district office of a discovery of leaks less than 25 barrels 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

Below Grade Tank Design and Construction Plan

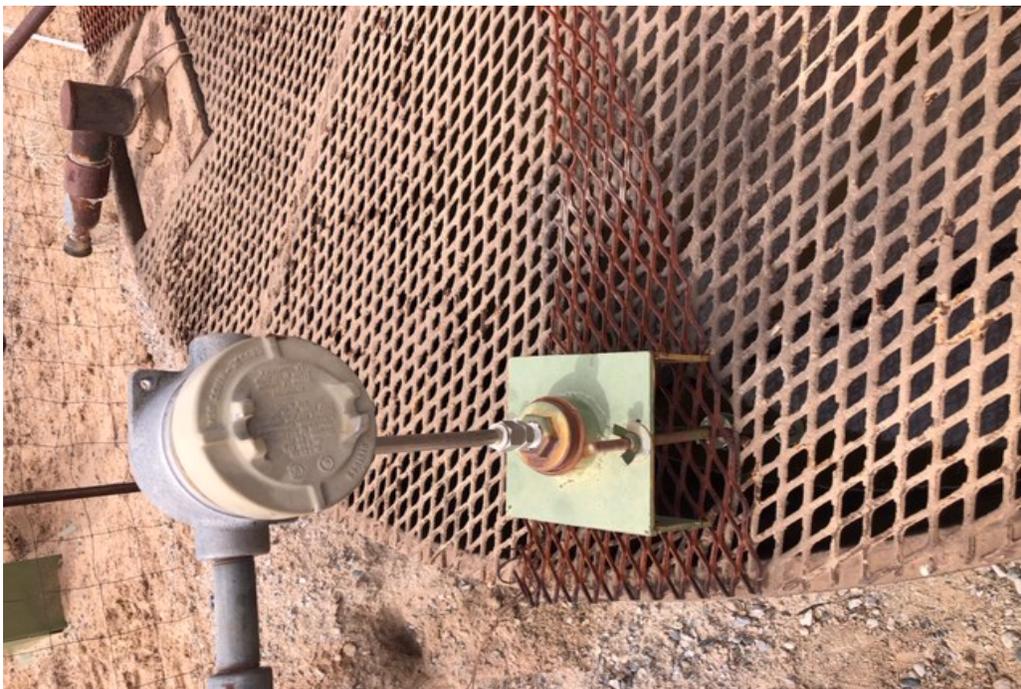
Ballard #010

U/L: L, Section 15, TWN: 26N. RNG: 09W

San Juan County, New Mexico

As stipulated in Rule 19.15.17 NMAC, the following information adheres to the requirements established in closing below-grade tanks (BGTs) on Southland Royalty Company LLC, well sites.

Southland Royalty Company has demonstrated in the Below Grade Tank modification that the 95 BBL Single wall Steel tank does not have a standard design plan. As demonstrated in the Operation and Maintenance plan Southland inspects the BGT monthly and documents for any erosion and corrosion issues. Southland Royalty removed the referenced below grade tank from service and conducted an integrity test by removing all fluids from the tank, conducting a detailed inspection to identify any corrosion issues. No issues were noted at the time of the inspection. The BGT was filled with fresh water and let sit for 24 hours to identify any leaks. After the 24 hours of testing the referenced BGT showed no evidence of any leaks.



Below Grade Tank Closure Plan

Ballard #010

U/L: L, Section 15, TWN: 26N. RNG: 09W

San Juan County, New Mexico

As stipulated in Rule 19.15.17.13 NMAC, the following information adheres to the requirements established in closing below-grade tanks (BGTs) on Southland Royalty Company LLC, L.L.C well sites. This plan will address the standard protocols and procedures for closure of BGTs.

Southland Royalty Company LLC, L.L.C proposes to close its existing BGTs that do not meet the requirements of Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC or are not included in Paragraph (5) of Subsection I of 19.15.17.11 NMAC in accordance with this closure plan and the transitional provisions of Subsection E of 19.15.17.17 NMAC.

The following outline addresses all requirements for closure of Southland Royalty Company LLC, L.L.C BGTs:

1. Prior notification of Southland Royalty Company LLC, L.L.C intent to close the BGT will follow 19.15.17.13J (1) and (2).

- a. Southland Royalty Company LLC, L.L.C will notify the surface owner by certified mail, return receipt requested, of closure plans. Evidence of mailing of the notice to the address of the surface owner shown in the county tax records is enough to demonstrate compliance with this requirement.
- b. Notification will also be given to the division District III office verbally or by other means at least 72 hours, but not more than one (1) week, prior to any closure operation. The notice will include the operator's name and the well's name, number, and API number, in addition to the well's legal description, including the unit letter, section, township, and range.

2.SOUTHLAND ROYALTY COMPANY LLC, L.L.C will remove liquids and sludge from the BGT prior to implementing a closure method and dispose of the liquids and sludge in a NMOCD's division-approved facility. A list of Southland Royalty Company LLC, L.L.C approved disposal facilities is below:

Fluid disposal:

Agua Moss

Sunco well #1

U/L=E, SWNW, Section 2, T29N-R12W San Juan, New Mexico

Permit #NM-01-0009

Basin Disposal Inc.

Basin Disposal well # 1

U/L=F, SWNW, Section 3, T29N-R1 1 W San Juan, New Mexico

Permit #NM-01-0005

Solid disposal: **Envirotech Land Farm**

Disposal Facility

Section 6, T26N-R10W, County Road #7175 San Juan, New Mexico

Permit #NM-01-0011

3.SOUTHLAND ROYALTY COMPANY LLC, L.L.C will remove the BGT from the pit and place it at ground level adjacent to the original BGT site and dispose of it in a NMOCD approved facility or recycle, reuse, or reclaim it in a manner that the NMOCD approved. If a liner is present and must be disposed of it will be cleaned and disposed at a permitted solid waste facility, pursuant to Subparagraph (m) of Paragraph (1) of Subsection C of 19.15.35.8 NMAC.

4. Southland Royalty Company LLC, L.L.C will hook up necessary equipment and piping for temporary tank use. At this time, any on-site equipment not necessary to the operation of the tank will be removed from the site.

5.Southland Royalty Company LLC, L.L.C will test the soils beneath the original BGT location to determine whether a release has occurred. At a minimum, a five (5) point composite sample will be collected in addition to individual grab samples from areas that are wet, discolored, or

showing other evidence of a release. The samples will be analyzed for BTEX, TPH (GRO DRO MRO), and chlorides to demonstrate that they do not exceed certain concentrations. The testing methods and closure standards for those constituents are as follows:

Table I Closure Criteria for Soils Impacted by a Release			
Minimum depth below any point within the horizontal boundary of the release to ground water less than 10,000 mg/l TDS	Constituent	Method*	Limit**
≤ 50 feet	Chloride***	EPA 300.0 or SM4500 C1 B	600 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	100 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg
51 feet-100 feet	Chloride***	EPA 300.0 or SM4500 C1 B	10,000 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg
>100 feet	Chloride***	EPA 300.0 or SM4500 C1 B	20,000 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg



Notes: mg/Kg= milligram per kilogram; BTEX = benzene, toluene, ethylbenzene, and total xylenes; TPH = total petroleum hydrocarbons. Other EPA methods that the division approves may be applied to all constituents listed. The Chlorides closure standards will be determined by whichever concentration level is greatest.

6.Southland Royalty Company LLC, L.L.C will notify the division District III office of the soil test results on Form C-14 I. It is understood that the NMOCD may require additional delineation upon review of the results.

7. If it is determined that a release has occurred, then Southland Royalty Company LLC, L.L.C will comply with 19.15.3.116 NMAC and 19.15.1.19 NMAC, as appropriate.

8. If the confirmation sampling demonstrates that a release has not occurred or that any release does not exceed the concentrations specified above, then Southland Royalty Company LLC, L.L.C will backfill the excavation with compacted, non-waste containing, earthen material; construct a division prescribed soil cover; re-contour the site; and move the fiberglass tank onto the newly backfilled and compacted site. The division-prescribed soil cover, re-contouring, and re-vegetation requirements shall comply with Subsections G, H, and I of 19.15.17.13

NMAC.

9. Reclamation will follow 19.15.17.130 (1) and (2).

a. The BGT location and all areas associated with the BGT, including associated access roads, if applicable, will be reclaimed to a safe and stable condition that blends with the surrounding undisturbed area. It is understood that Southland Royalty Company LLC, L.L.C 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 and re-contour the location and associated areas to a contour that approximates the original contour and blends with the surrounding topography.

b. Re-vegetation will not be completed at the time the BGT pit is reclaimed but will instead be applied for as part of the P&A process when the well is plugged and abandoned.

10. Soil cover will follow 19.15.17.13H (1) and (3).

a. The soil cover for closures where the BGT has been removed or contaminated soil has been remediated to the NMOCD's satisfaction will consist of the background thickness of topsoil or one (1) foot of suitable material to establish vegetation at the site, whichever is greater.

b. The soil cover will be constructed to the site's existing grade, and all possible efforts will be conducted to prevent ponding of water and erosion of the cover material.

11. Within 60 days of closure completion, Southland Royalty Company LLC, L.L.C will submit a closure report on NMOCD's Form C-144, with necessary attachments to document all closure activities, including sampling results; information required by 19.15.17 NMAC; and details on backfilling, capping, and covering, where applicable. Southland Royalty Company LLC, L.L.C will certify that all information in the report and attachments is correct and that Southland Royalty Company LLC, L.L.C has complied with all applicable closure requirements and conditions specified in the approved closure plan.