

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.

BGT 1

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

RCVD Via Email
5/24/19

16516

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

pCS1914950091

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: Enduring Resources, LLC OGRID #: 372286
Address: 200 Energy Court, Farmington, New Mexico 87401
Facility or well name: SEU 2206 20M Recycling Facility
API Number: NA OCD Permit Number: 3RF-30
U/L or Qtr/Qtr SE/4 Section 20 Township 22N Range 6W County: Sandoval
Center of Proposed Design: Latitude 36.117776 Longitude -107.488825 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 _____

3.
☒ **Below-grade tank:** Subsection I of 19.15.17.11 NMAC
Volume: 20 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 8' chain link fence around entire location

6.

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

☐ Screen ☐ Netting ☒ Other cone top

☐ 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.

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

☐ Yes ☒ No

☐ NA

Ground water is less than 50 feet below the bottom of a Temporary pit, permanent pit, or Multi-Well Fluid Management pit .

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

☐ Yes ☐ No

☐ 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

☐ Yes ☐ 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

☐ Yes ☐ 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

☐ Yes ☐ No

☐ Yes ☐ No

Within a 100-year floodplain. **(Does not apply to below grade tanks)**

- 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).

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

☐ Yes ☒ 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

☐ Yes ☒ No

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.)

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

☐ Yes ☐ No

Within 300 feet from an 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

☐ Yes ☐ 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 300 feet 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

☐ Yes ☐ No

<p>Within 100 feet of a wetland.</p> <ul style="list-style-type: none"> - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site 	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p><u>Temporary Pit Non-low chloride drilling fluid</u></p>	
<p>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).</p> <ul style="list-style-type: none"> - Topographic map; Visual inspection (certification) of the proposed site 	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.</p> <ul style="list-style-type: none"> - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image 	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>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;</p> <ul style="list-style-type: none"> - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site 	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Within 300 feet of a wetland.</p> <ul style="list-style-type: none"> - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site 	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p><u>Permanent Pit or Multi-Well Fluid Management Pit</u></p>	
<p>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).</p> <ul style="list-style-type: none"> - Topographic map; Visual inspection (certification) of the proposed site 	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.</p> <ul style="list-style-type: none"> - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image 	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>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.</p> <ul style="list-style-type: none"> - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site 	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Within 500 feet of a wetland.</p> <ul style="list-style-type: none"> - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site 	<input type="checkbox"/> Yes <input type="checkbox"/> 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): James McDaniel

Title: HSE Supervisor

Signature: 

Date: 4/25/19

e-mail address: jmcDaniel@enduringresources.com

Telephone: 505-636-9731

18.

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

OCD Representative Signature: 

Approval Date: 5/29/19

Environmental Specialist

OCD Permit Number: 16516

Title: _____

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: _____

Enduring Resources, LLC Below Grade Tank Closure Plan

Lease Name: SEU 2206 20M

OCD Num.: 3RF-30

Description: Section 20, Township 22N, Range 6W, Sandoval County

In accordance with Rule 19.15.17.13 NMAC the following information describes the closure requirements of below-grade tanks on Enduring Resources, LLC. (Enduring) locations. This is Enduring's standard procedure for all below-grade tanks. A separate plan will be submitted for any below-grade tank which does not conform to this plan.

General Plan

1. Enduring will obtain approval of this closure plan prior to commencing closure of the below grade tank at this location pursuant to 19.15.17.13.C (1) NMAC
2. Enduring will notify the surface owner by certified mail, return receipt requested, that the operator plans closure operations at least 72 hours, but no more than one week, prior to any closure operation. Notice will include:
 - a. Well Name
 - b. API
 - c. Well Location

*Enduring will notify government agencies by email of closure activities.
3. Enduring will notify the NMOCD Aztec Office by email that the operator plans closure operations at least 72 hours, but no more than one week, prior to any closure operation. Notice will include:
 - a. Well Name
 - b. API
 - c. Well Location
4. Within 60 days of cessation of operations, Enduring will remove all liquids and sludge from below grade tanks prior to implementing closure activities, and will dispose of the liquids and sludge at a division approved facility. Approved facilities and waste streams include:
 - a. Soils, tank bottoms, produced sands, pit sludge and other exempt wastes impacted by petroleum hydrocarbon will be disposed of at:
Envirotech: Permit #NM01-0011 and IEI: Permit #NM01-0010B
 - b. Produced water will be disposed of at:
Basin Disposal: Permit #NM01-005, Agua Moss: Permit #NM-009, and Enduring owned disposal wells.
5. Within six (6) months of cessation of operations, Enduring will remove the below grade tank and dispose of it in a division approved facility, or recycle, reuse or reclaim it in a manner that the appropriate district office approves. If there is any equipment associated with a below grade tank,

then the operator shall remove the equipment, unless the equipment is required for some other purpose.

6. Enduring will collect a closure sample of the soil beneath the location of the below grader tank or liner that is being closed. The closure sample will consist of a five-point composite sample to include any obvious stained or wet soils, or other evidence of contamination. The closure sample will be analyzed for all constituents listed in Table I below, including DRO+GRO, chlorides, TPH (C6-C36), benzene and BTEX.

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 Cl 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 Cl 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 Cl 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

7. Enduring will close this BGT based on the requirements for groundwater over 100 feet.
8. If any contaminant concentration is higher than the parameters listed in Table I above, additional delineation may be required based on review of the results. Enduring will receive division approval prior to proceeding with additional closure activities. If all contaminant concentrations

are less than, or equal to, the parameters listed in Table I above, the operator can proceed to backfill with non-waste containing, uncontaminated earthen material.

9. After closure has occurred, Enduring will reclaim the former BGT area, if it is no longer being utilized for the continued extraction of oil and gas, by substantially restoring the surface area to the condition that existed prior to oil and gas operations. Enduring will construct the soil cover to the site's existing grade and prevent ponding of water and erosion of the cover materials. The soil cover shall consist of the background thickness of topsoil, or one foot of suitable materials to establish vegetation at the site, whichever is greater. All areas will be reclaimed as early as practicable, and as close to their original condition or land use as possible. They shall be maintained in such a way as to control dust and to minimize erosion.
10. Enduring will complete reclamation in accordance with the requirements listed in NMAC 19.15.17.13.H(5).
 - (a) Enduring will reclaim all areas disturbed by the closure below-grade tanks, except areas reasonably needed for production operations or for subsequent drilling operations, shall be reclaimed as early and as nearly as practicable to their original condition or their final land use and shall be maintained to control dust and minimize erosion to the extent practicable.
 - (b) Enduring will ensure that topsoils and subsoils are replaced to their original relative positions and contoured so as to achieve erosion control, long-term stability and preservation of surface water flow patterns. The disturbed area then shall be reseeded in the first favorable growing season following closure of the below-grade tank.
 - (c) Enduring will consider reclamation of disturbed areas no longer in use complete when all ground surface disturbing activities at the site have been completed, and a uniform vegetative cover has been established that reflects a life-form ratio of plus or minus fifty percent (50%) of pre-disturbance levels and a total percent plant cover of at least seventy percent (70%) of pre-disturbance levels, excluding noxious weeds.
 - (d) Re-vegetation and reclamation obligations imposed by other applicable federal or tribal agencies on lands managed by those agencies shall supersede these provisions and govern the obligations of any operator subject to those provisions, provided that the other requirements provide equal or better protection of fresh water, human health and the environment.
 - (e) The operator shall notify the division when reclamation and re-vegetation are complete
11. Within 60 days of closure of the below-grade tank, Enduring will submit a closure report to the Aztec office of the NMOCD. Closure report will be filed on form C-144 and include the following:
 - Proof of closure notice to division and surface owner;
 - Confirmation sampling analytical results;
 - Soil backfilling and cover installation;
 - Photo documentation of the site reclamation.
 - Alternative Table I groundwater criteria request, groundwater information, and received approval (If Needed)

Enduring Resources, LLC
Below Grade Tank
General Design and Construction Plan

Lease Name: SEU 2206 20M

OCD Num.: 3RF-30

Description: Section 20, Township 22N, Range 6W, Sandoval County

In accordance with Rule 19.15.17.12 NMAC the following information describes the design and construction plan for this below grade tank (BGT).

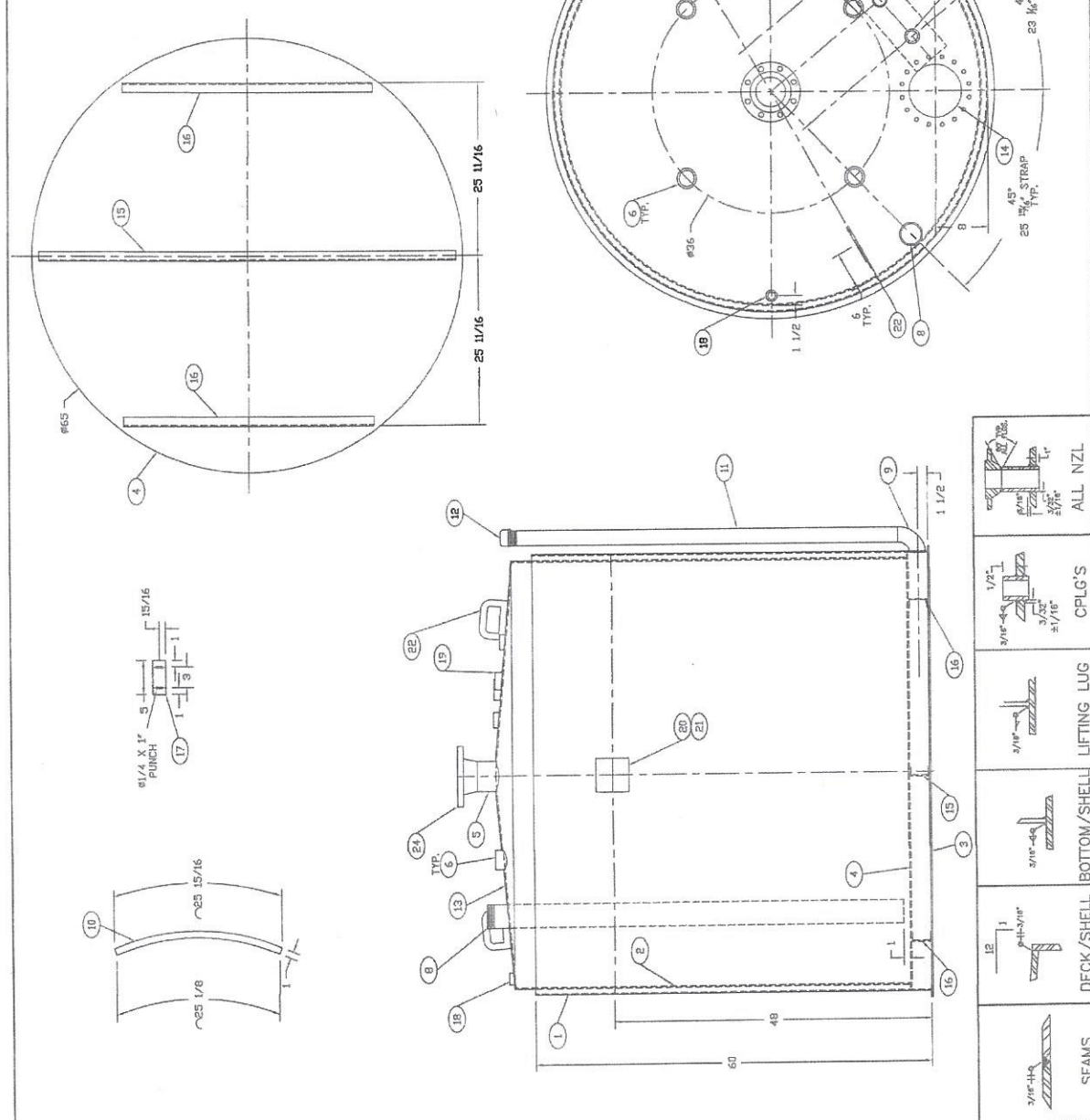
Procedures

1. Enduring will design and construct the BGT at this facility to contain liquids and solid, prevent contamination of fresh water, and protect public health and the environment.
2. The tank will be a 20 bbl double-walled tank with leak detection capability. The tank will be constructed of materials resistant to the BGT's particular contents and resistant to damage from sunlight, and the sidewall of the tank exterior will be buried.
3. Enduring will equip the BGT with an automated shut off level control system to prevent overflows.
4. The top of the BGT will be at least 6" above ground level to prevent the collection of surface water and run on into the tank.
5. Enduring shall construct the BGT with a solid cone top with a hatch to inspect the tank insides.
6. The tank will be placed on a foundation consisting of a level base free of rocks, debris, sharp edges or irregularities to prevent punctures or cracks in the tank bottom.
7. Enduring will post a facility sign that meets the criteria listed in 19.15.17.11.C NMAC.
8. Enduring is requesting approval of alternative fencing to be used around the below grade tank. This location has an existing 8' fence around the location, which will provide adequate protection to livestock and wildlife from the below grade tank. No specific fencing will be utilized for this below grade tank.

MATERIAL SPECIFICATION			
ITEM	QTY.	PART #	DESCRIPTION
1	1	R031066	CS PL 3/16" X 60" X 200 7/16" LG (ROLL TO 65" OD)
2	1	R031064	CS PL 3/16" X 60" X 200 7/16" LG (ROLL TO 64" OD)
3	1	B01-1458	BOTTOM 1/4" X 80"
4	1	B01-1458	CS PL 3/16" X 60" X 200 7/16" LG (ROLL TO 64" OD)
5	1	P0412287	PIPE 4" X 20.7 X 4 LG SCH 40 ERW
6	4	B01060	FE CR LG 2" X 200 7/16" HALF THD
7	1	B01060	FE CR LG 2" X 200 7/16" HALF THD
8	1	B01060	FE CR LG 2" X 200 7/16" HALF THD
9	1	B01060	FE CR LG 2" X 200 7/16" HALF THD
10	8	P0228218	PIPE 2" X 20.7 X 4 LG SCH 40 ERW
11	1	P0228218	PIPE 2" X 20.7 X 4 LG SCH 40 ERW
12	1	W01060	WELD BLY 2" X 20.7 X 4 LG SCH 40 ERW
13	1	W01060	WELD BLY 2" X 20.7 X 4 LG SCH 40 ERW
14	1	W01060	WELD BLY 2" X 20.7 X 4 LG SCH 40 ERW
15	1	W01060	WELD BLY 2" X 20.7 X 4 LG SCH 40 ERW
16	1	W01060	WELD BLY 2" X 20.7 X 4 LG SCH 40 ERW
17	1	W01060	WELD BLY 2" X 20.7 X 4 LG SCH 40 ERW
18	2	W01060	WELD BLY 2" X 20.7 X 4 LG SCH 40 ERW
19	1	W01060	WELD BLY 2" X 20.7 X 4 LG SCH 40 ERW
20	1	W01060	WELD BLY 2" X 20.7 X 4 LG SCH 40 ERW
21	1	W01060	WELD BLY 2" X 20.7 X 4 LG SCH 40 ERW
22	1	W01060	WELD BLY 2" X 20.7 X 4 LG SCH 40 ERW
23	1	W01060	WELD BLY 2" X 20.7 X 4 LG SCH 40 ERW
24	1	W01060	WELD BLY 2" X 20.7 X 4 LG SCH 40 ERW

GENERAL NOTES

1. ALL STRAP DIMENSIONS ARE FROM OD OF TANK.
2. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.
3. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE NOTED.
4. AIR TEST PRESSURE & PORTS.
5. TOTAL APPROXIMATE WEIGHT = 2300#.



REV	DESCRIPTION	BY	DATE
001			

CUSTOMER		BENCHMARK EQUIPMENT & TANK	
		3208 N. BERGEN AVE	
		BLOOMFIELD, N.J. 07413	
		(908)-532-9030	

OWN	REV	DATE	ENGINEER	DRAWING #
001	001	05-27-15	P. J. JONES	PT-200BLDWBDC

TITLE	DOUBLE BUTT, DOUBLE VALL
SCALE	3/4"=1'
PAGE	1 OF 1

Enduring Resources, LLC

Below Grade Tank

Operations and Maintenance Plan

Lease Name: SEU 2206 20M

OCD Num.: 3RF-30

Description: Section 20, Township 22N, Range 6W, Sandoval County

In accordance with Rule 19.15.17.12 NMAC the following information describes the operations and maintenance requirements of below-grade tanks on Enduring Resources, LLC. (Enduring) locations. This is Enduring's standard procedure for all below-grade tanks.

Procedures

1. Enduring will operate below grade tanks in such a way as to contain liquids, and maintain the integrity of the secondary containment system. Enduring will operate the below grade tank in such a way as to prevent the contamination of freshwater, and protect public health and the environment.
2. Enduring will not discharge into or store any hazardous waste into a below grade tank.
3. In the event of a leak in the below grade tank, Enduring will:
 - a. Remove all liquids above the leak within 48 hours
 - b. Notify the Aztec Office of the NMOCD of the leak within 48 hours
 - c. Repair the leak, or replace the below grade tank, as necessary
4. All below grade tanks will be installed and operated in such a way as to prevent surface water run-on or collection.
5. Enduring will remove any measurable layer of oil from the fluid surface of a below grade tank as soon as practicable.
6. Enduring will inspect the below grade tank for leaks and damage at least monthly, documenting the inspections, and maintaining a record of inspection for five (5) years. The leak detection space in double walled tanks will be checked during this monthly inspection
7. Enduring will operate the below grade tank in such a way as to maintain adequate freeboard to prevent over topping of the below grade tank. Adequate freeboard will be considered 12" from the top of the tank.
8. In the event the below grade tank no longer demonstrates integrity, Enduring will close the below grade tank in accordance with the closure plan submitted with this registration.

3. SITING CRITERIA

3.1. Distance to Groundwater

The NM State Engineers Office iWaters Database shows no water well information for the Township 22N, Range 6W. A ground bed log within section 10 of township 21N and range 7W was found for the N. Escavada Unit #329H. The elevation of the ground bed log is approximately 6944' with a groundwater depth of 340'. The SEU 2206-20M has an elevation of 7051' which is an increase of 107' establishing the estimated groundwater depth for the SEU 2206-20M to be greater than 200'. Therefore, the groundwater depth is greater than 50 feet below the bottom of the recycling containment.

3.2. Distance to Surface Water

There are not any continuously flowing watercourses within 300' nor any other significant watercourse and lakebed or playa lake within 200' of the recycling containment as shown on the Aerial or Topo maps provided. As discussed during the onsite of the proposed location on July 16, 2018, Enduring Resources does not believe that the "blue line" is indicative of a watercourse, due to not having defined banks or bottom, having no evidence of water flow, and not being a tributary of a significant watercourse. NMOCD approved the request on July 19, 2018 via email.

3.3. Distance to Structures

There are no permanent residence, school, hospital, institution or church at the time of initial registration within 1000' of the recycling containment as shown on the Aerial and Topo maps provided.

3.4. Distance to Non-Public Water Supply

There are no springs or fresh water wells used for domestic or stock water purposes within 500' in existence at the time of initial registration as shown on the Aerial and Topo maps provided.

3.5. Distance to Municipal Boundaries and Defined Fresh Water Fields

The recycling facility is not within any incorporated municipal boundaries within a defined municipal fresh water well field covered by a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978, as amended.

Enduring Resources, LLC

Site Specific Hydrogeological Report

SEU 2206 20M

BGT Location

The below grade tank is located in Sandoval County, New Mexico. The site the BGT will be located at is located in the southern portion of the San Juan Basin, approximately 6.5 miles South of Counselor, New Mexico. The elevation of the site the BGT will be located at is approximately 7,051 feet above sea level.

General Regional Groundwater Description

As a portion of the San Juan Basin, the Jicarilla Ranger District is underlain by sandstone aquifers of the Colorado Plateau. The primary aquifer of potential concern at this location is the Uinta-Animas Aquifer, composed primarily of Lower Tertiary rocks in the San Juan Basin. The aquifer consists of the San Jose Formation, the underlying Animas formation and its lateral equivalent, the Nacimiento formation, and the Ojo Alamo Sandstone formation. The thickness of the Uinta-Animas aquifer generally increases towards the central part of the basin. In this region, the maximum thickness of the aquifer is expected to be approximately 3,500 feet. This aquifer contains fresh to moderately saline water.

Groundwater generally flows towards the San Juan River and its tributaries, where it becomes alluvial groundwater or is discharged to stream flow.

Site Specific Information

This facility sits on a mesa with surface flow generally running to the south-west from the location. Surface flow drains into an unnamed ephemeral wash, which meets another unnamed wash after approximately 10 miles. The first water bearing formation in this area is expected to be the San Jose formation, which overlays the Nacimiento formation. Based on available groundwater information in the area, groundwater is expected to be over 200 feet below ground surface, based on a cathodic ground bed that was drilled at the N Escavada Unit 329H Well site in 2016. The elevation of the ground bed log is approximately 6944' with a groundwater depth of 340'. The SEU 2206 20M has an elevation of 7051', which is an increase of 107 feet. This establishes a depth to groundwater greater than 100 feet below the bottom of the BGT.

References

Allen, Erin. Undated. Colorado Plateau Aquifers

New Mexico Office of the State Engineer, iWaters Database

United States Geological Survey. 1995. Groundwater Atlas of the United States. HA 730-C

Google Earth

James McDaniel

From: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>
Sent: Thursday, July 19, 2018 8:44 AM
To: James McDaniel
Cc: Fields, Vanessa, EMNRD; Powell, Brandon, EMNRD
Subject: RE: SEU 361 Watercourse Determination

James,

After performing an onsite inspection with Enduring on July 16, 2018 OCD agrees with Enduring assessment of the "Significant water course" please include this determination if/when Enduring submits their permit.

Thank you,

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

From: James McDaniel <JMcDaniel@enduringresources.com>
Sent: Thursday, July 19, 2018 6:08 AM
To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>
Subject: SEU 361 Watercourse Determination

Cory,

As discussed on-site, Enduring Resources is requesting a determination on the watercourse near the proposed site of a recycling containment. The containment is planned on being located at the South Escavada Unit #361 Pad location, at 36.117776, -107.488825. A 'blue line' exists on the topographic map, indicating there was a waterway near the site. After review on-site, Enduring does not believe that the 'blue line' is indicative of a watercourse, due to not having defined banks or bottom, having no evidence of water flow, and not being a tributary of a significant watercourse. With your approval of this determination on this water feature, Enduring will begin the process of permitting this facility as a recycling containment. Thank you for your time in regards to this matter.

James McDaniel
HSE Supervisor
Enduring Resources
CSP #30009
CHMM #15676
Office: 505-636-9731
Cell: 505-444-3004
jmcdaniel@enduringresources.com

7. IWATERS REPORT

9/26/18, 8:42 PM



New Mexico Office of the State Engineer **Water Column/Average Depth to Water**

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

PLSS Search:

Section(s): 16, 17, 18, 19, 20, Township: 22N Range: 06W
21, 28, 29, 30

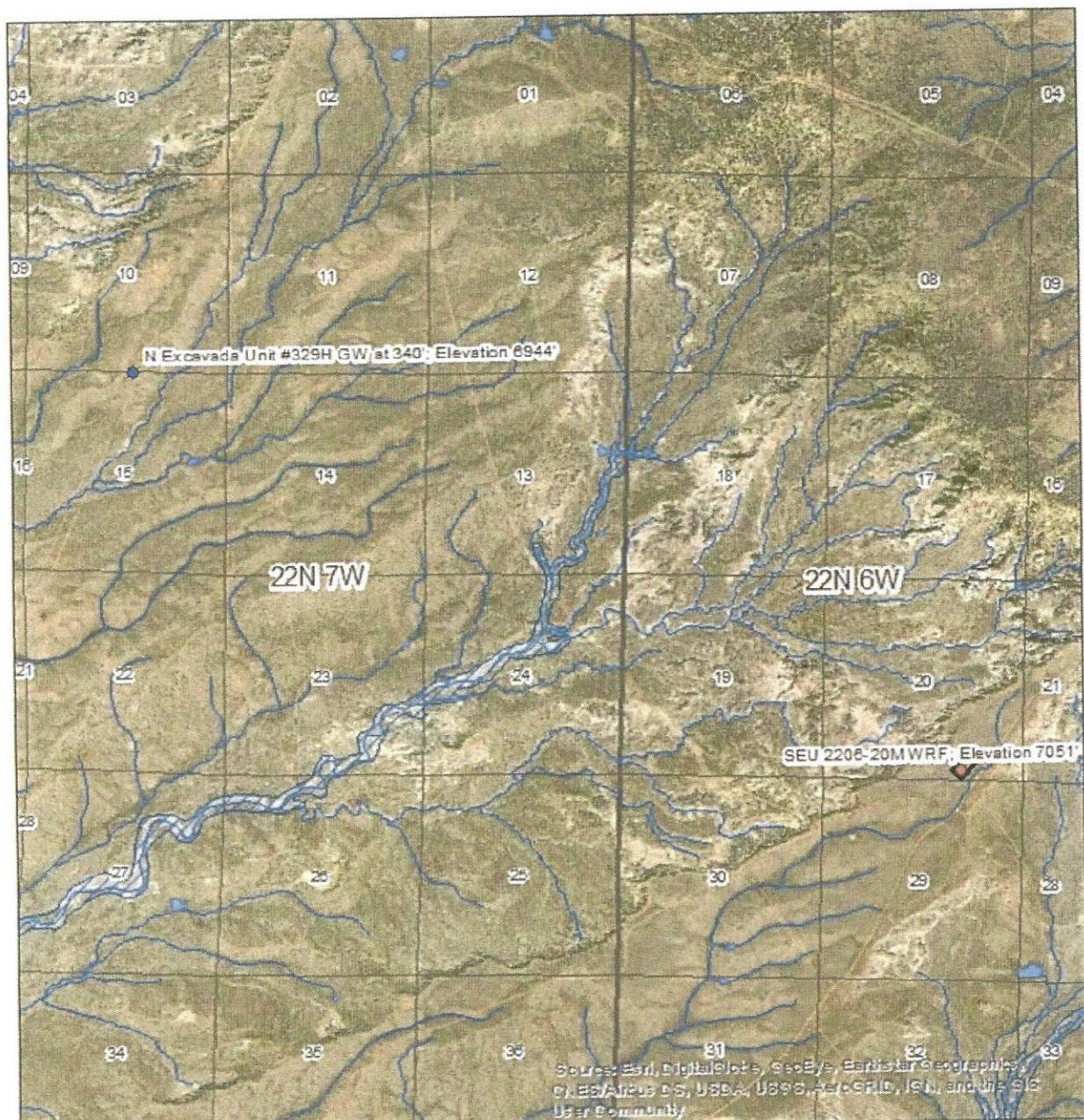
The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

9/26/18 8:39 PM

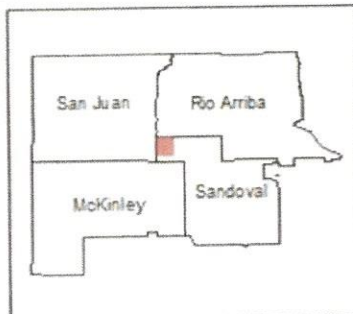
WATER COLUMN/ AVERAGE
DEPTH TO WATER

<http://nmwrrs ose.state.nm.us/nmwrrs/ReportProxy?queryData=...%22Township%22%3A%2222N%22%2C%0A%22Range%22%3A%2206W%22%7D>

Page 1 of 1



- SEU 2206-20M WRF
- N Excavada Unit #329H
- SEU 2206-20M WRF Pad
- FEMA High Risk Flood Zone
- NHD Water Body
- NHD Water Course



0 5,000 10,000 Feet

NAD 1983 UTM Zone 13N

Operator: Enduring Resources

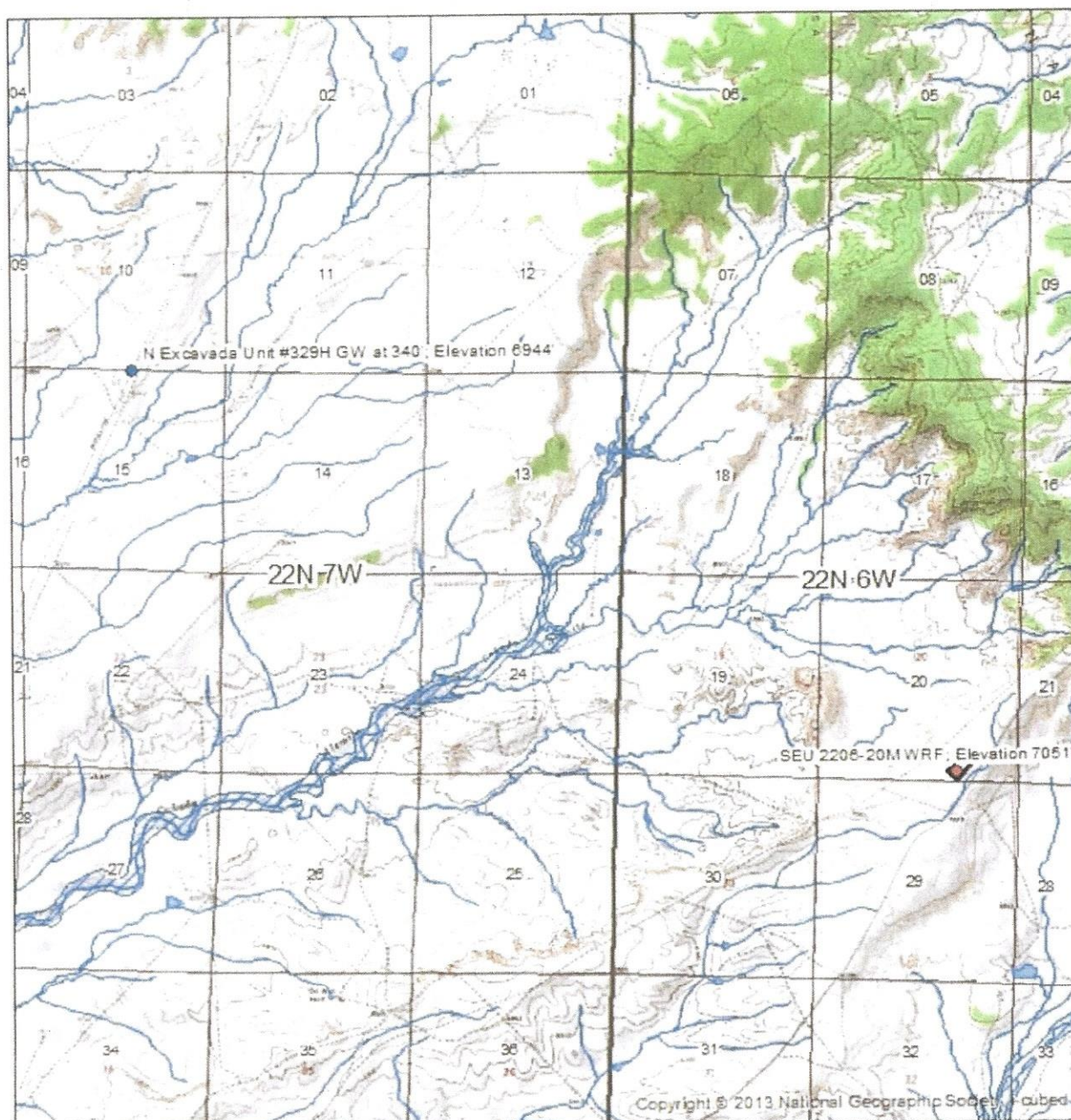


Contractor: EIS

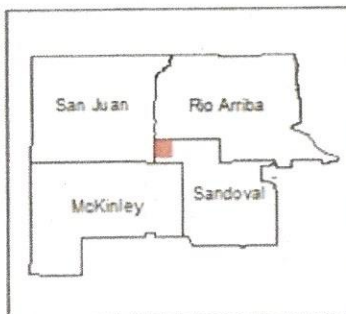


Author: MM (EIS LLC)

Date: 10/16/2018



- SEU 2206-20M WRF
- N Excavada Unit #329H
- SEU 2206-20M WRF Pad
- ▨ FEMA High Risk Flood Zone
- NHD Water Body
- NHD Water Course



0 5,000 10,000 Feet

NAD 1983 UTM Zone 13N

Operator: Enduring Resources

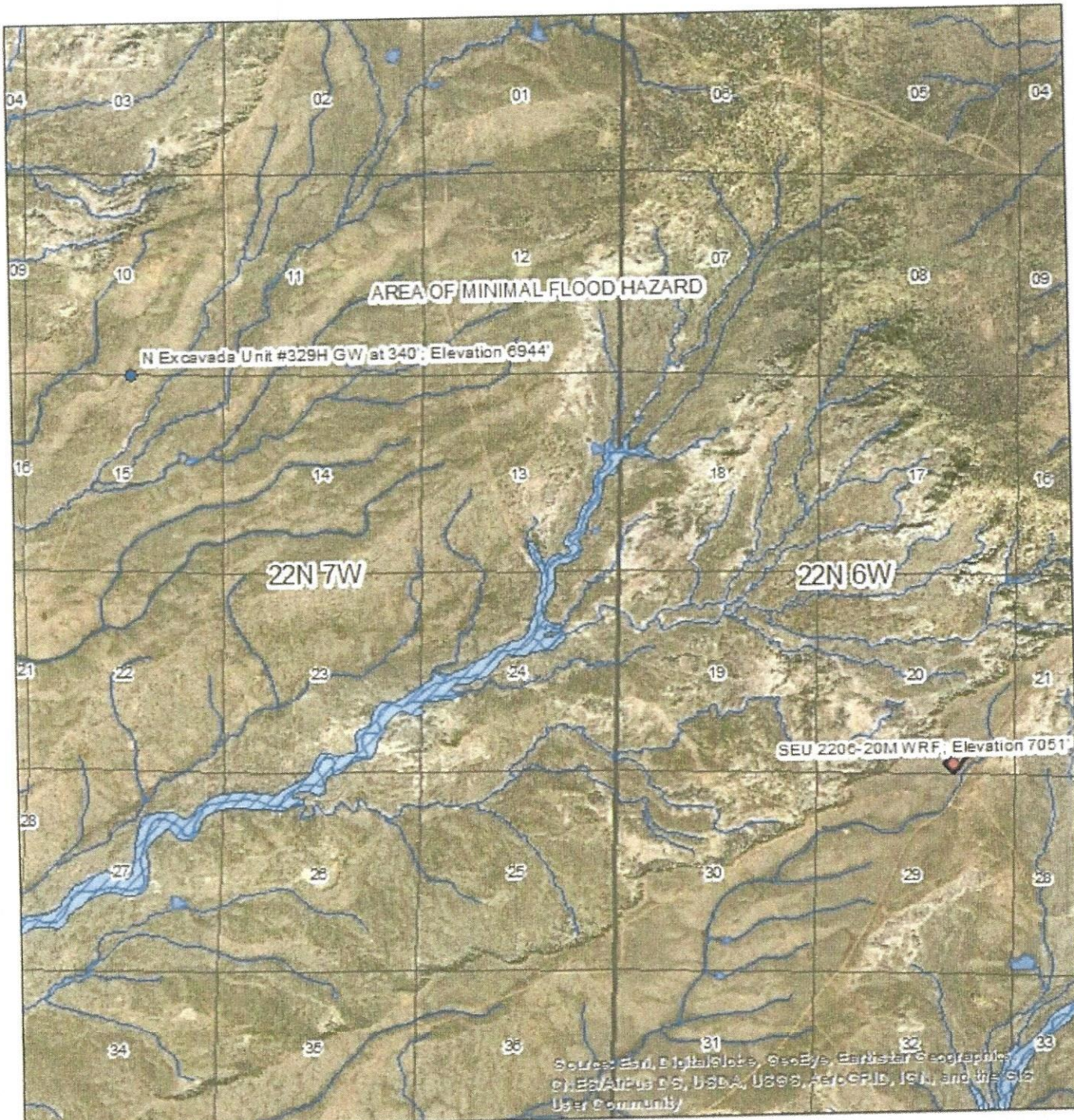


Contractor: EIS

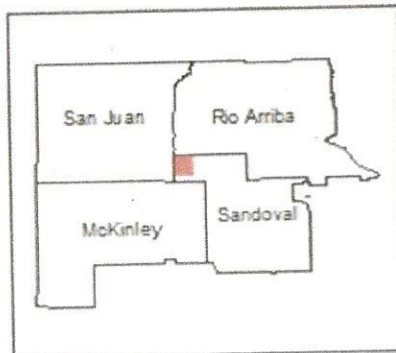


Environmental Solutions

Author: MM (EIS LLC) Date: 10/16/2018



- SEU 2206-20M WRF
- N Excavada Unit #329H
- SEU 2206-20M WRF Pad
- ▨ FEMA High Risk Flood Zone
- NHD Water Body
- NHD Water Course
- FEMA Flood Hazard Zones**
 - 1% Annual Chance Flood Hazard
 - Regulatory Floodway
 - Area of Undetermined Flood Hazard
 - 0.2% Annual Chance Flood Hazard
 - Area of Minimal Flood Hazard



0 5,000 10,000 Feet

NAD 1983 UTM Zone 13N

Operator: Enduring Resources



Contractor: EIS



Author: MM (EIS LLC)

Date: 10/10/2018

NMOC

OCT 25 2018

DISTRICT III

Ground Bed Drilling Log

Company: WPX Energy Well: North Escamela LT# 329H Date: 11-12-2016
 Location: Sic 10 T 22 N R 7 W State: New Mexico Rig: Stang #1
 Ground Bed Depth: 340' Water Depth: 0 Diameter: 10"
 Fuel: 88 gal. Latitude: 36.146522 Longitude: -107.561754

DEPTH**FORMATION****OTHER**

DEPTH	FORMATION	OTHER
<u>0-60</u>	Sand Stone, Shale, Sand w/ Shale w/ Sand	<u>PVC</u>
<u>60-100</u>	Sand Stone, Shale, Sand w/ Shale w/ Sand	
<u>100-140</u>	Sand Stone, Shale, Sand w/ Shale w/ Sand	
<u>140-190</u>	Sand Stone, Shale, Sand w/ Shale w/ Sand	
<u>190-250</u>	Sand Stone, Shale, Sand w/ Shale w/ Sand	
<u>250-300</u>	Sand Stone, Shale, Sand w/ Shale w/ Sand	
<u>300-340</u>	Sand Stone, Shale, Sand w/ Shale w/ Sand	
	Sand Stone, Shale, Sand w/ Shale w/ Sand	
	Sand Stone, Shale, Sand w/ Shale w/ Sand	
	Sand Stone, Shale, Sand w/ Shale w/ Sand	

GROUNDWATER DEPTH LOG			
Company: WPX Energy		Location: North Escamela LT# 329H	
		Lat/Long: 36.146522/-107.561754	
		Elevation:	
Probe types: <u>Powerell Sander</u>			
Casing Installation Method:		Push	
Required Test Depths 50', 55', & 105' unless otherwise requested			
Date	Time	Depth	Comments
10-12-16	10 am	30'	drilled 30'
	11 am	30'	tested no water
	11:30	55'	drilled to 55'
	12:30	55'	tested No water
	1:45	105'	drilled to 105'
	2:45	105'	tested NO water set 60' casing
10-13-16	8:30 am	105'	No water
	11:45	340'	finished grade bed

11. FEMA MAP

National Flood Hazard Layer FIRMette



Legend

SEE THIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE)
- With BFE or Depth Zone AE, AO, AH, AV, AR
- Regulatory Floodway
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile
- Future Conditions 1% Annual
- Chance Flood Hazard
- Area with Reduced Flood Risk due to Levee, See Notes
- Area with Flood Risk due to Levee

OTHER AREAS OF FLOOD HAZARD

- Area of Minimal Flood Hazard
- Effective LOMRs
- Area of Undetermined Flood Hazard

OTHER AREAS

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

GENERAL STRUCTURES

- Cross Sections with 1% Annual Chance
- Water Surface Elevation
- Coastal Transsect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transsect Baseline
- Profile Baseline
- Hydrographic Feature

OTHER FEATURES

- Digital Data Available
- No Digital Data Available
- Unmapped

MAP PANELS

- The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps. If it is not valid as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/1/2018 at 12:22 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is valid if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map panel number, community identifiers, FIRM panel number, or FIRM effective date. Map images for unmapped and undetermined areas cannot be used for regulatory purposes.

**Enduring Resources, LLC
Below Grade Tank
Variance Page**

Lease Name: SEU 2206 20M

OCD Num.: 3RF-30

Description: Section 20, Township 22N, Range 6W, Sandoval County

- Enduring Resources proposes to utilize an 8' chain link fence around the entire facility in lieu of the fencing requirements outlined in subsection D of 19.15.17.11 NMAC.
- Enduring Resources proposes to use an enclosed tank in lieu of the screening and netting requirements outlined in subsection e of 19.15.17.11 NMAC
- Enduring Resources proposes to use an alternative to USEPA Method 418.1, as outlined in the attached *Variance Request for 19.15.17 NMAC Tables I and Table II*

Oil Conservation Division
1000 Rio Brazos Rd.
Aztec, New Mexico 87410
Email: cory.smith@state.nm.us
Phone (505) 334-6178 Ext 115

Re: Variance Request for 19.15.17 NMAC Table I and Table II

To Whom It May Concern,

Please accept this letter as a variance request as outlined in 19.15.17.15(A) NMAC. Enduring Resources, LLC (Enduring) would like to request the replacement of USEPA Method 418.1 for the analysis of Total Petroleum Hydrocarbons (TPH) for USEPA Method 8015M, measuring carbon ranges C6-C36, for all sampling associated with closures and confirmations samples in relation to 19.15.17 NMAC, both in Table I and Table II (2103) and the 'pit rule' passed in 2008. Enduring is requesting this variance on the grounds that USEPA Method 418.1 is an outdated analytical method that reports a full range of hydrocarbons from C5 through C40 (*Reference: American Petroleum Institute*).

The attached table demonstrates the carbon ranges, and the typical hydrocarbon products that can be found in those ranges. As you can see, lube oil ranges from C28-C35. Analytical Method USEPA 418.1 extends past lube oils from C35 through C40. This range of hydrocarbons is above the range that can reasonably be expected to be found in our field in both drilling pits and beneath below grade tanks. USEPA Method 8015M (GRO/DRO + extended analysis) will report hydrocarbons ranging from C6-C10 for GRO, C10- C28 for DRO, and C28-C36 for extended analysis. This information was provided by Environmental Science Corporation Laboratories. As the information demonstrates, the 8015M analytical method reports as low as C6, reporting lower than USEPA Method 418.1. Utilizing analytical method 8015M, lighter range hydrocarbons will be reported instead of higher range, heavy hydrocarbons that may not be reasonably expected to be found in our field. Utilization of USEPA Method 8015M will better protect groundwater resources by identifying lighter, more mobile hydrocarbons that USEPA Method 418.1 cannot identify. The heavier range hydrocarbons, C36-C40, that are not identified by USEPA Method 8015M are not a mobile form of hydrocarbon, and are not a threat to human health and the environment. With your acceptance of this variance request, Enduring Resources will begin utilizing USEPA Method 8015M in place of USEPA Method 418.1 for all sampling activities associated with 19.15.17 NMAC, both from the rules passed in 2008 and 2013.

Respectfully Submitted,



James McDaniel, CHMM #15676
HSE Supervisor
Enduring Resources, LLC

Carbon Ranges of Typical Hydrocarbons

Hydrocarbon Carbon Range

Condensate C2-C12

Aromatics C5-C7

Gasoline C7-C11

Kerosene C6-C16

Diesel Fuel C8-C21

Fuel Oil #1 C9-C16

Fuel Oil #2 C11-C20

Heating Oil C14-C20

Lube Oil C28-C35