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.

# 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: Steward Energy II LLC OGRID #: 371682
Address: 2600 N Dallas Pkwy Suite 400 Frisco, TX 75034
Facility or well name: **Broken Spoke State Com well #5H**
API Number: **30-025-45530** OCD Permit Number: _____
U/L or Qtr/Qtr **M** Section **2** Township **14s** Range 38E County: Lea
Center of Proposed Design: Latitude **N 33 7.620** Longitude **W -103 4.529** 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 **2-30 mil** ☒ LLDPE ☐ HDPE ☐ PVC ☐ Other _____
☒ String-Reinforced 2- Slit Pits One Fresh & One Brine
Liner Seams: ☐ Welded ☒ Factory ☐ Other ___Slit Pit____ Volume: 6400 bbl/pit Dimensions: 2 x (150' x 20' x 12' (deep))

**3.**
☐ **Below-grade tank:** Subsection I of 19.15.17.11 NMAC
Volume: _____bbl Type of fluid: _____
Tank Construction material: _____
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other _____
Liner type: Thickness _____mil ☐ HDPE ☐ PVC ☐ Other _____

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

**5.**
**Fencing:** Subsection D of 19.15.17.11 NMAC *(Applies to permanent pits, temporary pits, and below-grade tanks)*
☐ Chain link, six feet in height, two strands of barbed wire at top *(Required if located within 1000 feet of a permanent residence, school, hospital, institution or church)*
☒ Four foot height, four strands of barbed wire evenly spaced between one and four feet
☐ Alternate. Please specify_____

6.

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

☐ Screen ☐ Netting ☐ Other_____

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

7.

**Signs:** Subsection C of 19.15.17.11 NMAC

☒ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

☐ Signed in compliance with 19.15.16.8 NMAC

8.

**Variances and Exceptions:**

Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.

***Please check a box if one or more of the following is requested, if not leave blank:***

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

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

9.

**Siting Criteria (regarding permitting):** 19.15.17.10 NMAC

***Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below.*** **Siting criteria does not apply to drying pads or above-grade tanks.**

| | |
|---|---|
| **General siting** | |
| **Ground water is less than 25 feet below the bottom of a low chloride temporary pit or below-grade tank.**<br>- ☐ NM Office of the State Engineer - iWATERS database search; ☐ USGS; ☐ Data obtained from nearby wells | ☐ Yes ☐ No<br>☒ NA |
| **Ground water is less than 50 feet below the bottom of a Temporary pit, permanent pit, or Multi-Well Fluid Management pit .**<br>NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells | ☐ Yes ☒ No<br>☐ 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)**<br>- 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)**<br>- 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)**<br>- 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. **(Does not apply to below grade tanks)**<br>- FEMA map | ☐ Yes ☒ No |
| **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).<br>- 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;.<br>- 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)<br>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.)<br>- Topographic map; Visual inspection (certification) of the proposed site | ☐ Yes ☐ No |
| Within 300 feet from a occupied permanent residence, school, hospital, institution, or church in existence at the time of initial application.<br>- 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 300feet of any other fresh water well or spring, in existence at the time of the initial application.<br>NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site | ☐ Yes ☐ No |

| | |
|---|---|
| Within 100 feet of a wetland.<br>- 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).<br>- 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.<br>- 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;<br>- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site | ☐ Yes ☒ No |
| Within 300 feet of a wetland.<br>- 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).<br>- 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.<br>- 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.<br>- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site | ☐ Yes ☐ No |
| Within 500 feet of a wetland.<br>- 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: **30-025-45129** or Permit Number: _____

**11.**

**Multi-Well Fluid Management Pit Checklist:** Subsection B of 19.15.17.9 NMAC

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

☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
☐ A List of wells with approved application for permit to drill associated with the pit.
☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
☐ Hydrogeologic Data - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC

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

12.

**Permanent Pits Permit Application Checklist:** Subsection B of 19.15.17.9 NMAC

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

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

13.

**Proposed Closure:** 19.15.17.13 NMAC

***Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.***

Type: ☒ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ P&A ☐ Permanent Pit ☐ Below-grade Tank ☐ Multi-well Fluid Management Pit ☐ Alternative

Proposed Closure Method:
- ☐ Waste Excavation and Removal
- ☐ Waste Removal (Closed-loop systems only)
- ☒ On-site Closure Method (Only for temporary pits and closed-loop systems)
  - ☒ In-place Burial ☐ On-site Trench Burial
- ☐ Alternative Closure Method

14.

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

- ☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.13 NMAC
- ☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- ☐ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

15.

**Siting Criteria (regarding on-site closure methods only):** 19.15.17.10 NMAC

***Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria require justifications and/or demonstrations of equivalency. Please refer to 19.15.17.10 NMAC for guidance.***

| | |
|---|---|
| Ground water is less than 25 feet below the bottom of the buried waste.<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells | ☐ Yes ☒ No<br>☐ NA |
| Ground water is between 25-50 feet below the bottom of the buried waste<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells | ☐ Yes ☒ No<br>☐ NA |
| Ground water is more than 100 feet below the bottom of the buried waste.<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells | Yes XNo<br>☐ 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).<br>- 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.<br>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image | ☐ Yes ☒ No |
| Within 300 horizontal feet of a private, domestic fresh water well or spring used for domestic or stock watering purposes, in existence at the time of initial application.<br>- NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site | ☐ Yes ☒ No |
| Written confirmation or verification from the municipality; Written approval obtained from the municipality | ☐ Yes ☒ No |
| Within 300 feet of a wetland.<br>US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site | ☐ Yes ☒ No |
| Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance | |

| | |
|---|---|
| adopted pursuant to NMSA 1978, Section 3-27-3, as amended.<br>- Written confirmation or verification from the municipality; Written approval obtained from the municipality | ☐ Yes ☒ No |
| Within the area overlying a subsurface mine.<br>- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division | ☐ Yes ☒ No |
| Within an unstable area.<br>- 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.<br>- FEMA map **"On Site Observation and Landowner Experience"** | ☐ 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): Wayne Price- mgm Price LLC_ Title: Agent for SEII

Signature: _____ Date: Feb 5, 2019

e-mail address: wayneprice@q.com Telephone: 505-715-2809

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

**OCD Representative Signature:** _____ **Approval Date:** 2/18/19

**Title:** Environmental Bureau Chief **OCD Permit Number:** _____

19.
**Closure Report (required within 60 days of closure completion):** 19.15.17.13 NMAC

***Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.***

☐ **Closure Completion Date:** _____

20.
**Closure Method:**

☐ Waste Excavation and Removal ☐ On-Site Closure Method ☐ Alternative Closure Method ☐ Waste Removal (Closed-loop systems only)

☐ If different from approved plan, please explain.

21.
**Closure Report Attachment Checklist:** ***Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.***

- ☐ Proof of Closure Notice (surface owner and division)
- ☐ Proof of Deed Notice (required for on-site closure for private land only)
- ☐ Plot Plan (for on-site closures and temporary pits)
- ☐ Confirmation Sampling Analytical Results (if applicable)
- ☐ Waste Material Sampling Analytical Results (required for on-site closure)
- ☐ Disposal Facility Name and Permit Number
- ☐ Soil Backfilling and Cover Installation
- ☐ Re-vegetation Application Rates and Seeding Technique
- ☐ Site Reclamation (Photo Documentation)

On-site Closure Location: Latitude _____ Longitude _____ NAD: ☐1927 ☐ 1983

22.

**Operator Closure Certification:**

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): _____ Title: _____

Signature: _____ Date: _____

e-mail address: _____ Telephone: _____

# Attachment to C-144 for Steward Energy II LLC Broken Spoke State Com API# 30-025-4553 located in UL M Section 2-Ts14s-R38e.

## This submittal incorporates OCD draft comments and recommendations which were approved by OCD on October 02, 2018 for the nearby Saul Goodman Fee Well API# 30-025-45129 located in UL B Sec 2-Ts14s-R38E which are within .75 miles of each other.

**Pit Design and Construction**:

Steward Energy plans to use two separate **"Slit Pits (i.e Trenches)"**, one for fresh water drilling and the other for brine/mud drilling. Each pit will be approximately 150 feet long by 20 feet wide and 12 feet deep. Each end will be sloped for access and the sidewalls will be shear. The pit contents will not be co-mingled.

Akome Liner Company located in Hobbs NM will be the installer. The excavation of pits will ensure that all virgin top and vadose zone soils (i.e. non-contaminated soils) are segregated and retained for future backfill. Additional soils may be utilized in and around the drill and production site. The end slopes (3:1 maximum) and bottom of the pits will be compacted to a minimum of 2000 lbs/ft$^2$. Sidewall stability will be ensured by measuring the wall compression and making sure it exceeds 1000 lbs/ft$^2$ , along with site field judgments. Soils Classified as Class C (USCS) will have safety shoring if encountered. All stocked-piled soils and heavy loads will be maintained a minimum of 10 feet from the the pit sidewalls.

Geo-textile materials will be installed first and then two continuous 30-mill liners with no field seams will be installed with appropriate slack on the surface and in the trench side walls, and anchor trenches to exceed the design required pursuant to 19.15.17.11 (F)(7) (24" deep x 24" wide) and compacted to exceed the rule requirements for temporary pits. (Anchor trench design in included in Fig. 1B)

A field pocket penetrometer will be used to take compaction readings or the field thumb test will be used.

The liner will be an extra heavy-duty double 30 mil string reinforced LLDPE (spec sheet attached). The pump in-out areas will have a double liner (30 mil) installed for impingement to meet the requirements under 19.15.17.11 (F)(8) and 19.15.17.12 (A)(6).

To meet the requirements of 19.15.17.12.A.6, piping in and out of the pit will be supported by a header system where the discharge and suction piping will be 6" from the liner bottom and in the double liner area.

Attached hereto is a typical rig site layout and sketch of the cross-sections. (See Fig 1&1A) A berm will be installed to ensure no run-on or run-off.

Pursuant to the current rule 19.15.17 requirements concerning side slopes, Steward is requesting a variance for the vertical sidewalls of the Slit Pits. To ensure equal or better protection requirement, we have chosen to use a liner with 50% more thickness than is required. In addition, we plan on ensuring that slack liner materials are installed to prevent undue tensional stresses. Please find attached the liner specification sheet that is planned on being used for OCD review.

**Operating/Maintenance Procedures:**

The rig water/mud pumps will pump fluids from the pits and discharge down hole with fluid drill cuttings returning to the opposite end of the pits. Exit and entry points will ensure protection of the liner, as these areas will have a double liner installed.

The pit fluid levels shall maintain a minimum of 2 feet freeboard at all times. While not expected, If any oils collect on the pits, they will be skimmed off and recycled within 48 hours. Appropriate equipment will be on hand to accomplish this feat. Flags will be used to deter migratory birds. A daily inspection record will be maintained and monitored for

any damage to the liner, any breach of fluids, any skim oils, freeboard measurements, pit fluid levels, and any other pertinent issues, especially unexpected loss or gain.

Pursuant to 19.15.17.12 (A)(5) any release or damage to liner shall be reported to OCD pursuant to the 19.15.29 (Release rule). The pit system shall be shut down immediately and not returned to operation until OCD approves repair of the liner.

The site will be fenced to prevent un-authorized entry and protection of livestock and wildlife, in addition, per OCD Draft response recommendation, a safety ladder will be installed in the pits for emergency egress.

**Hydro-Geologic Data:**

The primary aquifer in the vicinity of the well and pit sites is the High Plains Aquifer, which is generally an unconsolidated and unconfined aquifer composed of clay, silt, sand, and gravel. The sediments have been cemented locally near the land surface forming a caliche. Top soils in the area are typical sandy loam.

Based on well records in the area and a map of the bedrock geology underlying the high plains aquifer by Weeks and Gutentag (1981), it appears that there are cretaceous-age geological formations that lie between the High Plains Aquifer and Triassic-age red beds in some locations. It is reported that the lower Cretaceous rocks are generally composed of sandstones, shales, and limestones that have a lower permeability and storage relative to the High Plains Aquifer.

Price LLC, (Steward's Consultant) has previous experience in this area and would like to point out that generally the Lower Cretaceous aquifer is confined and when comingled with the upper aquifer, water levels can rise indicating a false shallow depth to groundwater in the area. The groundwater gradient for both formations dips to the southeast into Texas. (Ref Ash 1963 Groundwater Contours of Northern Lea County-USGS see Attached map Fig 2)

***The Broken Spoke State Com well will be located in UL M of Section 2- TS 14S-R38E. The active water well previously identified is a crop-circle irrigation well located approximately 4000 feet to the northeast of the site. (See attached aerial photo Fig 3.)***

This well has been identified from the NM Office of the State Engineer as L559-POD6. Included herein is a copy of the well log record, which indicates the well was drilled to depth of 250 feet and the static water level was noted at 110 feet BGL. (See Fig 4)

Steward Energy's field personal confirmed the depth to water from the current landowner to be approximately 110 feet BGL. In addition, Steward's field personal shot water levels in other wells located to the southeast and obtained field measurements in Section 10; Well #1 water level at 96.4' Lat 33* 07' 21.2088" Long 103* 04; 49.7604 and Well #2 water Level at 90.3' Lat 33* 06' 55.0620" Long 103* 04'49.9008.

In addition, when OCD reviewed the draft C-144 permit for the recently drilled Saul Goodman well, it noted the following findings: E-mail dated 9-24-18
JGriswold OCD to WPrice-Steward Agent.

> ***"On Page 2, in Box 9 for General Siting, you checked the "No" box to the question "Groundwater is less than 50 feet below the bottom…" Stated depth of pits is 12 feet below surface, that would place the depth to groundwater limitation at no deeper than 62 feet. Your attachment Figures 3, and 4 are about the water supply well in the center of the crop irrigation circle and comes from the Office of the State Engineer (L 00559 POD6). The well was initially drilled in 2008 to a total depth of 185 feet and a depth to water of 125 feet. The well was re-entered to deepen via cable tool during 2011 to a total depth of 253 ft with a static level of 110 ft. Perforations in the well are from 133 to 253 ft.***
>
> ***There is another well (OSE L 11623) in Section 2 that was drilled in 2004 with a total depth of***

***150 ft and a depth to water of 70 ft. Perforations are from 110 to 150 ft. The driller's log notes the shallowest water bearing unit as a fine sand beginning at 80 ft.***

***There is a third well in the Section (OSE L 12263 POD1) drilled in 2008 with a total depth of 170 ft. It says the depth to water is 170 feet, but I think this is in error. Perforations are from 105 to 170 ft. The log indicates a water bearing sand at a depth of 105 ft.***

***The two other wells you speak of are between 1.5 to 2 miles to the southwest (not southeast) in Section 10 of the same township and have water levels of 96 and 90 feet and appear to be at higher surface elevation (~20 ft).***

***In all cases, depth to groundwater is greater than 62 feet, so you appear good.***

**Siting Compliance Demonstration:**

Steward's field personal has reviewed the entire area and looked at Google aerial views to demonstrate there are no free flowing streams, playa lakes, wetlands, buildings in proximately, water wells within 300 ft., no surface-subsurface mines, unstable areas, not in a town or sub-division, or in an area that would flood.

***OCD Draft Comments agree with this assessment.***

**Closure Plan:**

Once the drilling of the well is complete, the pits will be decanted of all free fluids and disposed of at an approved facility or recycled into Steward's SWD disposal system located in Texas, all within the time constraints of the rule. The drill cuttings will be allowed to dry for 30 days and tested to determine if they will pass a paint filter test.

The solid contents will then be sampled pursuant to EPA SW-846 random stratified composite protocols for pits and tested for the constituents found in Table II (51-100 ft) of 19.15.17.

If the sample results show the levels exceed the levels allowed in Table II then Steward will mix clean soil with the contents at a ratio not to exceed a 3:1 until the Table II constituents are met. If cannot be met, then Steward will dispose of the pit contents at the Gandy-Marley landfill NMOCD permit #NM1-19.

All notifications will be made per the Rule (19.15.17) and landowner notifications at the timing required in the rule.

Once the pit contents have been stabilized and meet the closure standards, including the paint filter test, then the pit liner shall be folder over the left-in-place solids, and then clean backfill soil shall be placed and compacted over the drill cuttings. A 30 mil SR-LLDPE liner will be used to cover the pits in a convex manner so drainage will be directed away from the pits. The overlay shall be a 3-foot minimum. OCD will be notified and invited to inspect and/or witness sampling, or any aspect of the job, before covering or final backfilling.

Then a minimum of four feet of virgin top soil (i.e. "non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg…" as required in 19.15.17 and 19.15.29) shall be placed over the top liner and contoured to the existing surface. (See Fig 1A for a graphic representation of closure with recommended engineering specifications).

Once closed, Steward will submit a final C-144 closure report items 19-22, with GPS readings, plats, required markers, closure progress photos, deed verification, landowner and OCD notifications, confirmation lab samples, details on soil covers, and any pertinent information that OCD may require for approval.

**Final Site Reclamation and Re-Vegetation:**

Steward Energy II will perform final site closure requirements as described above when the drilling and completion operations are completed within allowed rule time frames. The final reclamation and re-vegetation, pursuant to the rule 19.15.17.13.H (5), will be implemented when the well site area is no longer in use, i.e. right after P&A of the well.

OCD made the following observation and commented as follows"

***"For instance, Section (H)(1)(c) says even a production pad still in use "shall be compacted, covered, paved, or otherwise stabilized and maintained in a way as to minimize dust and erosion to the extent practicable." If the surface contouring is not properly established and maintained, you WILL get ponding on top of the buried pit simply due to subsidence. "***

Steward Energy hereby acknowledges the requirements and will perform actions as required.

Fig 1

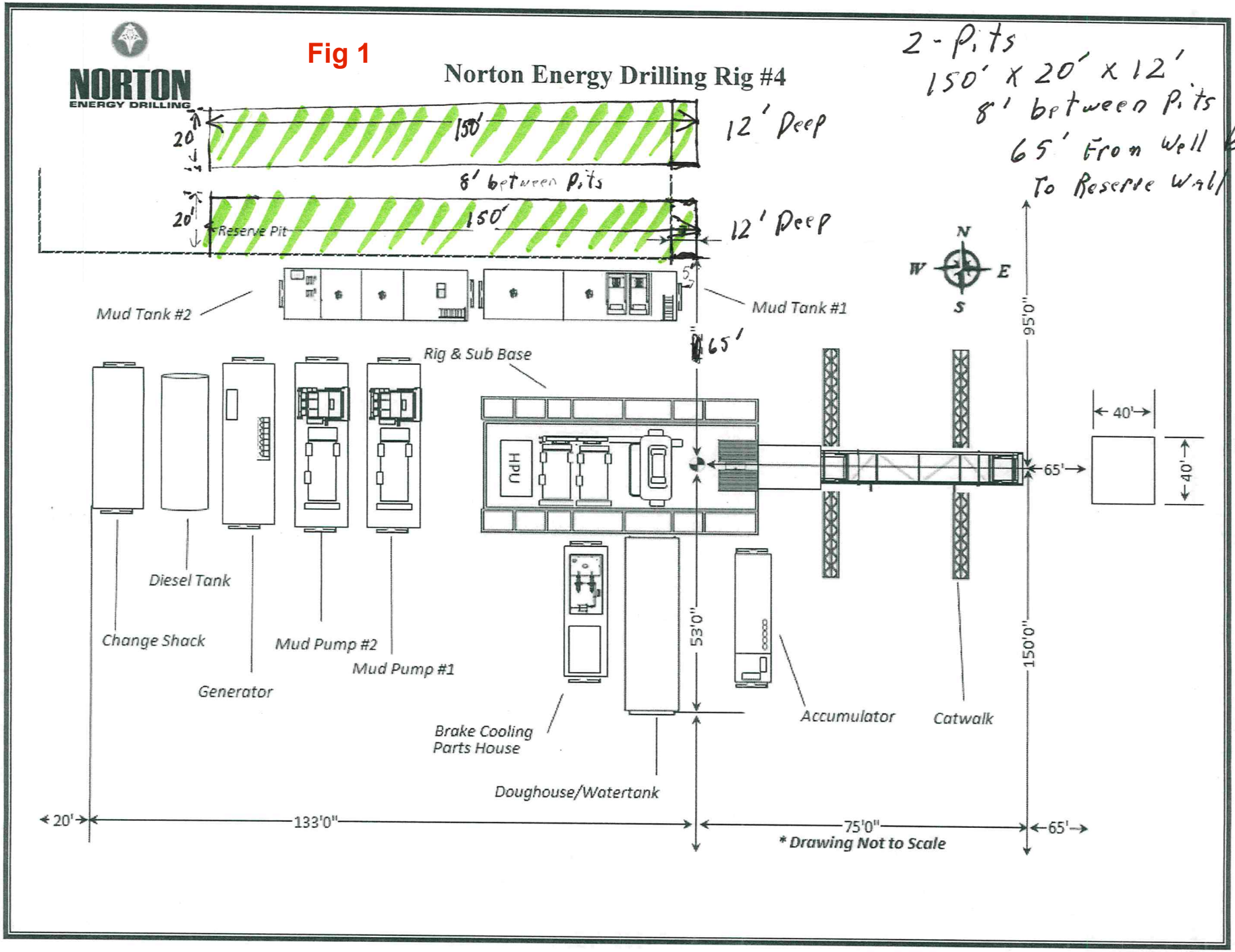
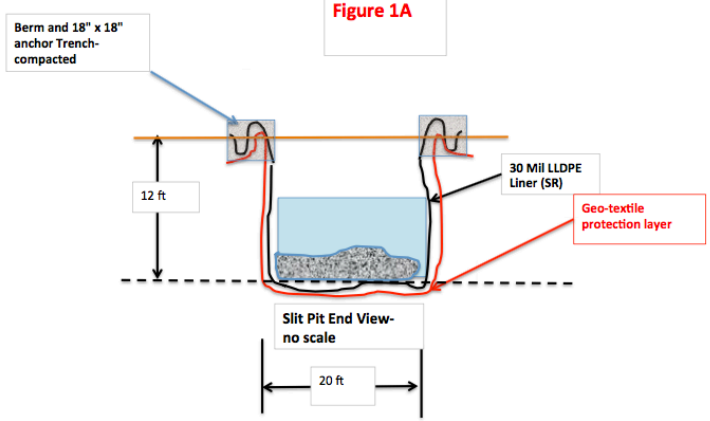
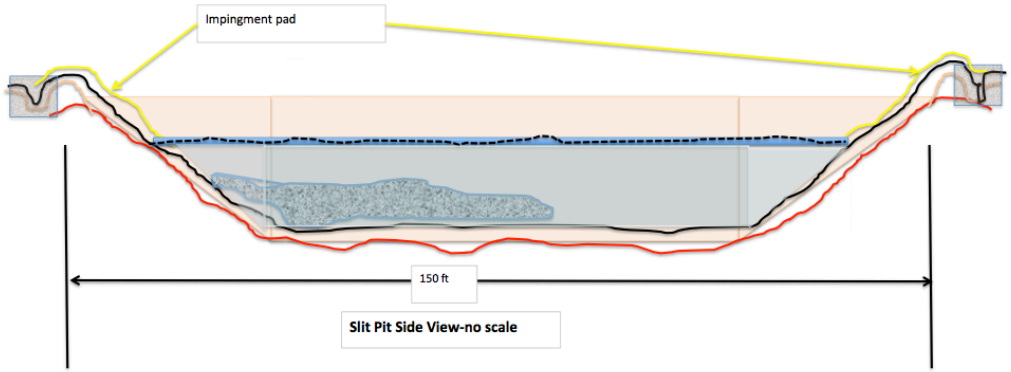

NORTON
ENERGY DRILLING
Norton Energy Drilling Rig #4
2 - Pits
150' x 20' x 12'
8' between Pits
65' from Well Bore
To Reserve Wall
20'
150'
12' Deep
8' between Pits
20'
Reserve Pit
150'
12' Deep
Mud Tank #2
Mud Tank #1
Rig & Sub Base
65'
N
W
E
S
95'0"
40'
40'
65'
HPU
Diesel Tank
Change Shack
Generator
Mud Pump #2
Mud Pump #1
53'0"
150'0"
Brake Cooling
Parts House
Doughouse/Watertank
Accumulator
Catwalk
20'
133'0"
75'0"
65'
* Drawing Not to Scale

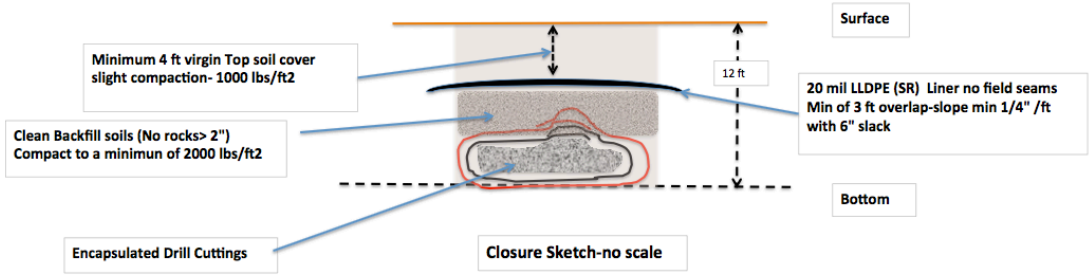
**Figure 1A**




Slit Pit End View-no scale



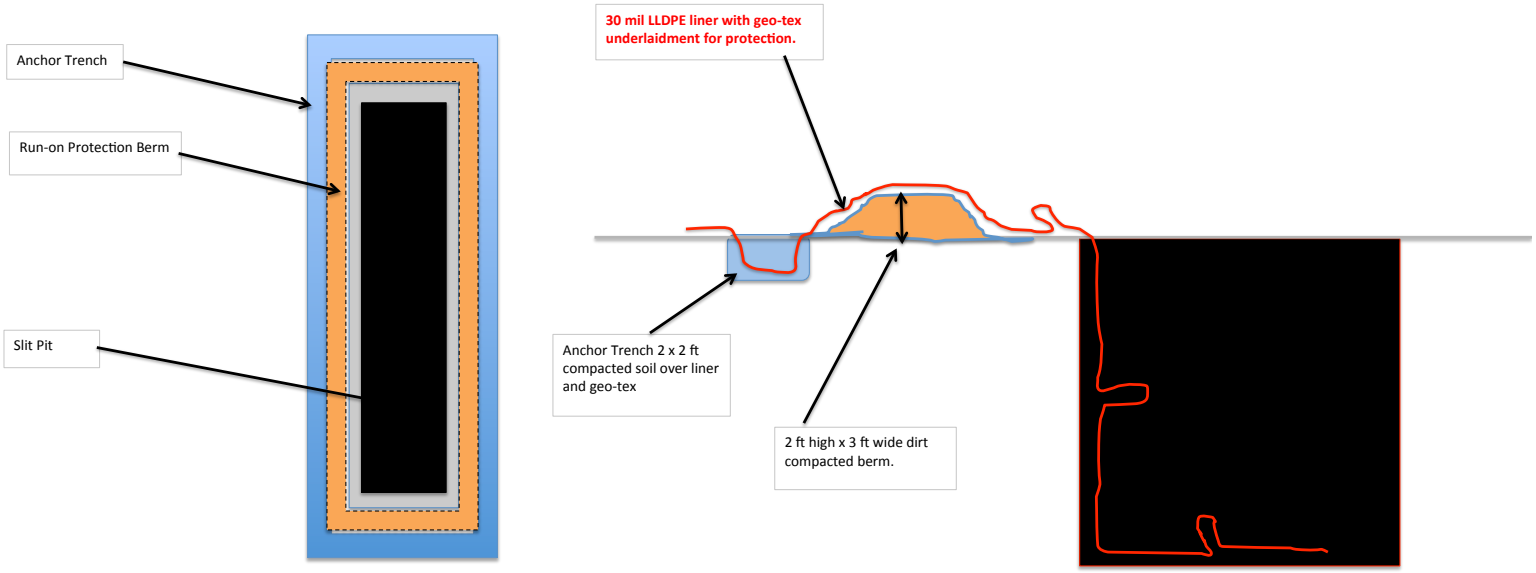

Slit Pit Side View-no scale




Closure Sketch-no scale

****Specification for the Steward Energy II Saul Goodman Site Only Located in UL A Sec 2-Ts14s-R38e

Fig 1B


Anchor Trench
Run-on Protection Berm
Slit Pit
30 mil LLDPE liner with geo-tex underlaidment for protection.
Anchor Trench 2 x 2 ft compacted soil over liner and geo-tex
2 ft high x 3 ft wide dirt compacted berm.

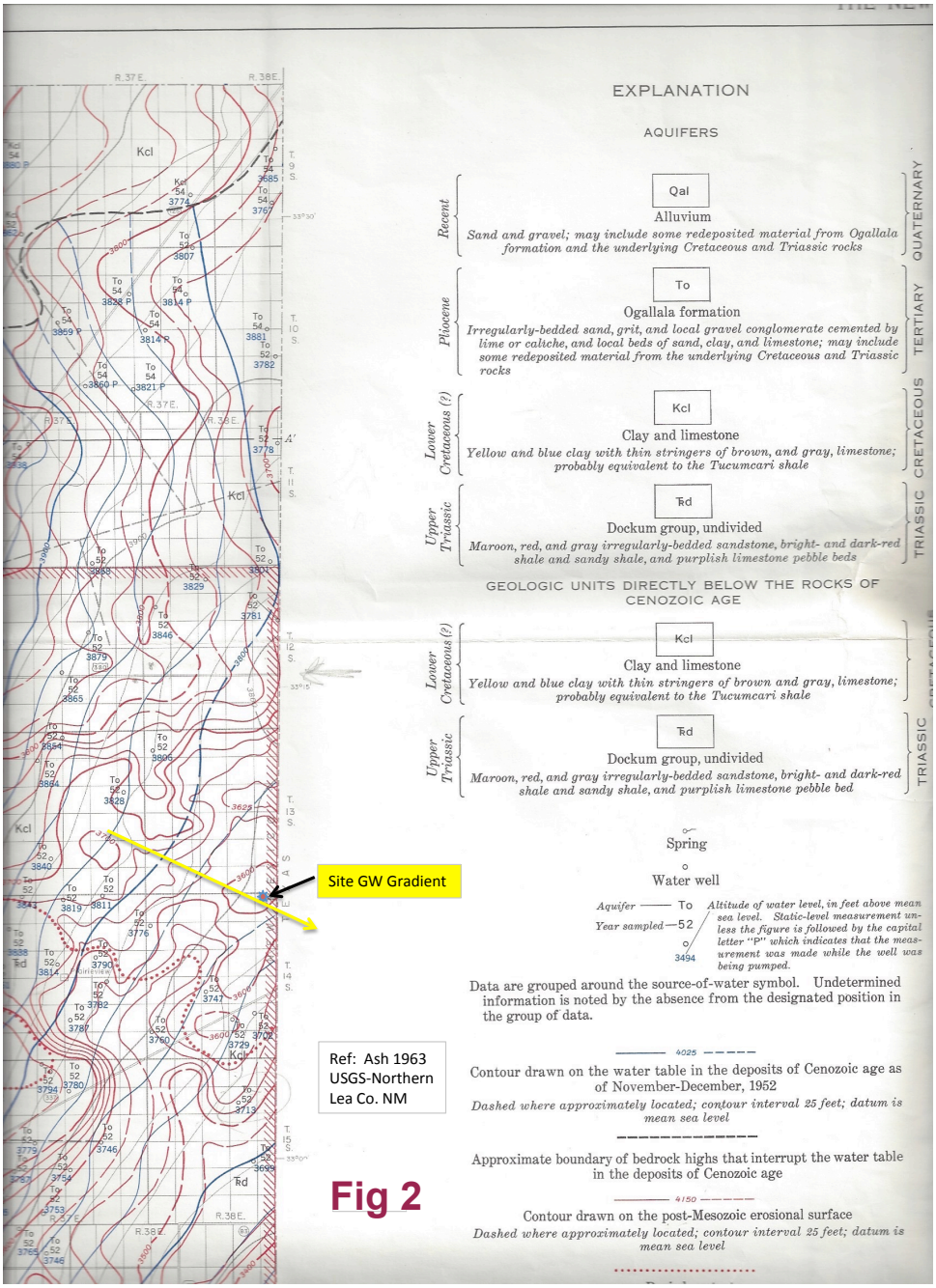

EXPLANATION
AQUIFERS
Qal
Alluvium
Sand and gravel; may include some redeposited material from Ogallala formation and the underlying Cretaceous and Triassic rocks
Recent
QUATERNARY
To
Ogallala formation
Irregularly-bedded sand, grit, and local gravel conglomerate cemented by lime or caliche, and local beds of sand, clay, and limestone; may include some redeposited material from the underlying Cretaceous and Triassic rocks
Pliocene
TERTIARY
Kcl
Clay and limestone
Yellow and blue clay with thin stringers of brown, and gray, limestone; probably equivalent to the Tucumcari shale
Lower Cretaceous (?)
CRETACEOUS
Trd
Dockum group, undivided
Maroon, red, and gray irregularly-bedded sandstone, bright- and dark-red shale and sandy shale, and purplish limestone pebble beds
Upper Triassic
TRIASSIC
GEOLOGIC UNITS DIRECTLY BELOW THE ROCKS OF CENOZOIC AGE
Kcl
Clay and limestone
Yellow and blue clay with thin stringers of brown and gray, limestone; probably equivalent to the Tucumcari shale
Lower Cretaceous (?)
Trd
Dockum group, undivided
Maroon, red, and gray irregularly-bedded sandstone, bright- and dark-red shale and sandy shale, and purplish limestone pebble bed
Upper Triassic
TRIASSIC
Spring
Water well
Aquifer — To
Year sampled — 52
3494
Altitude of water level, in feet above mean sea level. Static-level measurement unless the figure is followed by the capital letter "P" which indicates that the measurement was made while the well was being pumped.
Data are grouped around the source-of-water symbol. Undetermined information is noted by the absence from the designated position in the group of data.
4025
Contour drawn on the water table in the deposits of Cenozoic age as of November-December, 1952
Dashed where approximately located; contour interval 25 feet; datum is mean sea level
Approximate boundary of bedrock highs that interrupt the water table in the deposits of Cenozoic age
4150
Contour drawn on the post-Mesozoic erosional surface
Dashed where approximately located; contour interval 25 feet; datum is mean sea level
Site GW Gradient
Ref: Ash 1963
USGS-Northern
Lea Co. NM

**Fig 2**

f

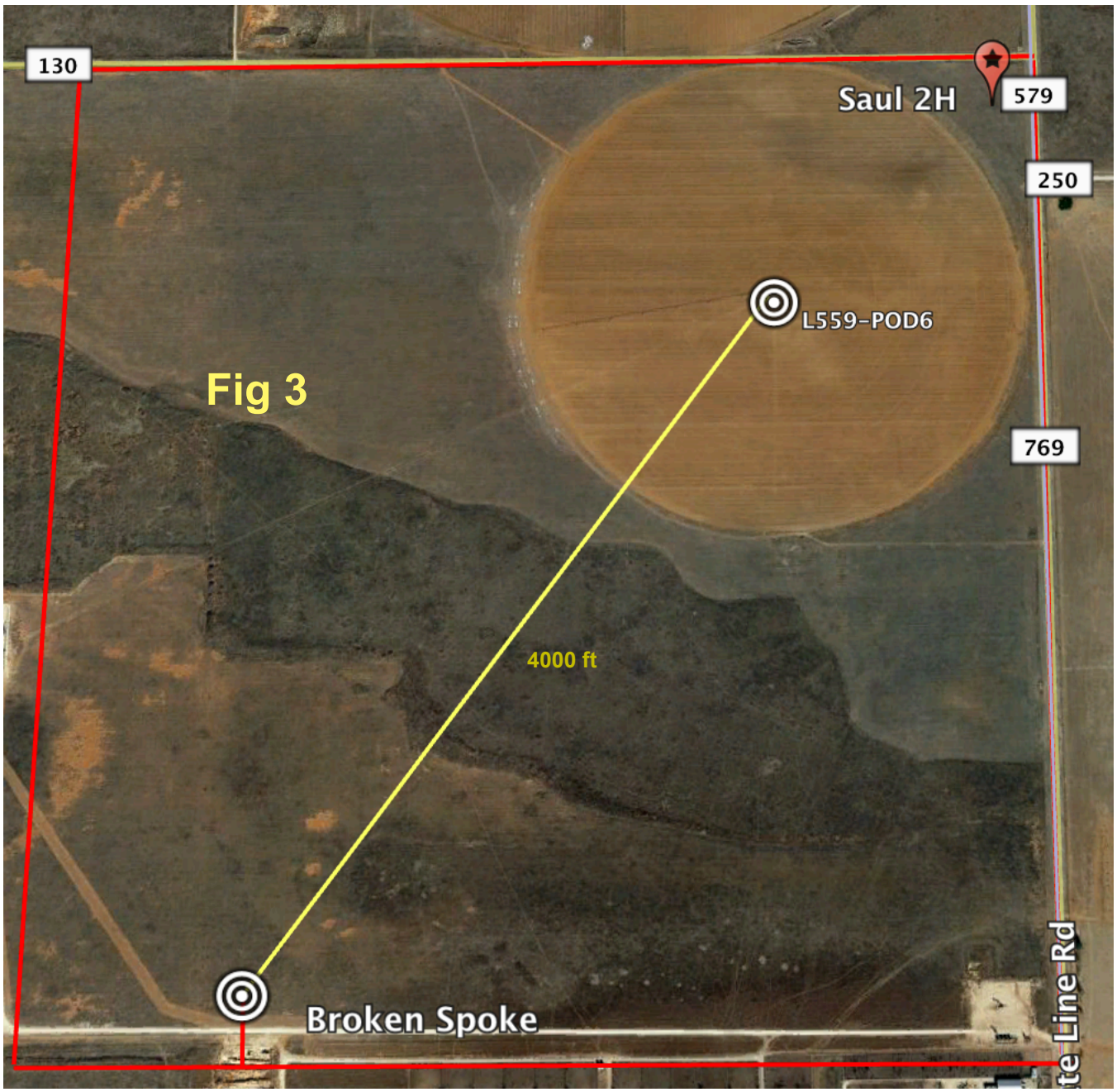

130
Saul 2H
579
250
L559-POD6
Fig 3
769
4000 ft
Broken Spoke
te Line Rd

**Fig 4**

Revised June 1972

STATE ENGINEER OFFICE

WELL RECORD

#561800

POD6

Section 1. GENERAL INFORMATION

(A) Owner of well Nathan Lowe Owner's Well No. L-559 (T)

Street or Post Office Address 2313 Broadway

City and State Lubbock, Tx 79401

Well was drilled under Permit No. L-559 (T) and is located in the:

a. CTR ¼ NE ¼ ¼ ¼ of Section 2 Township 14S Range 39E N.M.P.M.

b. Tract No. ____ of Map No. ____ of the 33 08 345

c. Lot No. ____ of Block No. ____ of the 103 04 016
Subdivision, recorded in Lea County.

d. X= ____ feet, Y= ____ feet, N.M. Coordinate System ____ Zone in the ____ Grant.

(B) Drilling Contractor DURAN DRILLING License No. WD-1607

Address Po Box 1561 Seminole Tx 79360

Drilling Began 5/13/11 Completed 5/17/11 Type tools Cable Tool Size of hole 14 in.

Elevation of land surface or ____ at well is ____ ft. Total depth of well 253 ft.

Completed well is ☒ shallow ☐ artesian.

Depth to water upon completion of well 110 ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

| Depth in Feet From | Depth in Feet To | Thickness in Feet | Description of Water-Bearing Formation | Estimated Yield (gallons per minute) |
|---|---|---|---|---|
| 175 | 185 | 10 | Sand | 50 |
| 210 | 225 | 15 | Lime Stone | 50 |
| 225 | 250 | 25 | Sand & Gravel | 200 |
| | | | | |

Section 3. RECORD OF CASING

| Diameter (inches) | Pounds per foot | Threads per in. | Depth in Feet Top | Depth in Feet Bottom | Length (feet) | Type of Shoe | Perforations From | Perforations To |
|---|---|---|---|---|---|---|---|---|
| 10 | 28 | | 0 | 253 | 253 | —— | 133 | 253 |
| | | | | | | | | |
| | | | | | | | | |

Section 4. RECORD OF MUDDING AND CEMENTING

| Depth in Feet From | Depth in Feet To | Hole Diameter | Sacks of Mud | Cubic Feet of Cement | Method of Placement |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |

Section 5. PLUGGING RECORD

Plugging Contractor ____

Address ____

Plugging Method ____

Date Well Plugged ____

Plugging approved by:

____
State Engineer Representative

| No. | Depth in Feet Top | Depth in Feet Bottom | Cubic Feet of Cement |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |

FOR USE OF STATE ENGINEER ONLY

Date Received

Quad ____ FWL ____ FSL ____

File No. ____ Use Repair Deepen Location No. ____

RECEIVED MAY 25 AM 8

| Depth in Feet | | Thickness in Feet | Color and Type of Material Encountered |
|---|---|---|---|
| From | To | | |
| 0 | 175 | | Open Hole |
| 175 | 185 | | Sand |
| 185 | 210 | | Blue Lime |
| 210 | 225 | | Lime Stone |
| 225 | 250 | | Sand & Gravel |
| 250 | 253 | | Red Bed |

Section 7. REMARKS AND ADDITIONAL INFORMATION

e undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above
orined hole.

Luis B. Dosan.

Date

TRUCTIONS. This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office
he State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible
ed, repaired or deepened. When this form

STEWARD ENERGY

Mailed 01/22/2019
Certified Return Receipt # 7017-2620-0000-3197-3602

January 22, 2019

To: El Ray Salt Co.
2313 Broadway
Lubbock, Tx 79401

From: Steward Energy II LLC
2600 N Dallas Pkwy Suite 400
Frisco, Tx 75034

Reference: Broken Spoke State Com 5H Well
UL M Section 2-Ts 14S-R38E

Please note Steward Energy II is planning on drilling a well located on your private land at the location referenced above. The planned drilling of this well will commence in February of 2019 with an anticipated spud date of February 21, 2019.

In order to improve and have better control of the well, Steward is planning on using what's called Slit Pits (i.e. trenches). These trenches will be 150 ft x 20 ft x 12 ft (deep). There will be one for fresh water drilling and one for drilling with brine-laden mud. They will not be co-mingled.

The trenches will be lined with a protection fabric and two 30-mil string reinforced polyethylene heavy duty liner. The closure of the pits will consist of making sure the contents of the pit meets OCD closure standards and the liner will be folded over the pit contents and then another liner will be placed over the pits. The rule requires we provide a minimum of four feet virgin soils over the entire pit to ensure that you may farm the area if every anticipated. Actual re-seeding of the site will not occur until the well site is deemed closed.

Per the New Mexico State rules administered by the Oil Conservation Division (19.15.17) requires Steward to make notification to the landowner. In addition, Steward is required to provide you and the OCD a pre-notification of a minimum of 72 hours, but not more than a week, before the pit closure begins. So we will notify you again when this occurs.

In addition, the State requires that we file a deed with the county clerk specifying the exact location of the pit burier and place an on-site marker and file a plat with OCD.

If you have any questions please do not hesitate to call me at 214-297-0520 or feel free to contact the Hobbs OCD office at 575-393-6161 x102.

Sincerely,

Taylor Warren
Steward Energy Landman

STEWARD
ENERGY II
2600 North Dallas Parkway, Suite 400
Frisco, Texas 75034

CERTIFIED MAIL®

7017 2620 0000 3197 3602

El Ray Salt Co.
2313 Broadway
Lubbock, TX 79401

UNITED STATES POSTAGE
PITNEY BOWES
02 1P 000090413 8
$ 006.67 0
JAN 22 2019
MAILED FROM ZIP CODE 75034

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT
OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

**SENDER: *COMPLETE THIS SECTION***

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

El Ray Salt Co.
2313 Broadway
Lubbock TX 79401

9590 9402 4669 8323 9361 08

2. Article Number *(Transfer from service label)*

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☐ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PS 7017 2620 0000 3197 3602 Return Receipt

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

El Ray Salt Co.
2313 Broadway
Lubbock TX 79401

9590 9402 4669 8323 9361 08

2. Article Number *(Transfer from service label)* 7017 2620 0000 3197 3602

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature
X
☐ Agent
☐ Addressee

B. Received by *(Printed Name)*

C. Date of Delivery
2-12-19

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☐ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PS ... Return Receipt

# DURA♦SKRIM® J30BD

SCRIM REINFORCED POLYETHYLENE

RAVEN

## PRODUCT DESCRIPTION

DURA♦SKRIM® J30BD is a linear-low-density polyethylene geomembrane with an encapsulated polyester scrim reinforcement. In addition to excellent dimensional stability the tri-directional reinforcement provides exceptional tear and puncture resistance.

DURA♦SKRIM® J30BD is a versatile black/gray geomembrane. The gray outer layer minimizes thermal expansion while providing a cooler working surface. The black layer includes carbon black and thermal stabilizers to assure exposed longevity. Contrasting colors also provide a vital function for ease of damage detection during installation.

## PRODUCT USE

DURA♦SKRIM® J30BD is used in applications that demand high tear strength and resistance to thermal expansion.

DURA♦SKRIM®J30BD is manufactured from a chemically-resistant, linear-low-density polyethylene with excellent environmental stress crack resistance.

## SIZE & PACKAGING

DURA♦SKRIM® J30BD is available in a variety of widths and lengths to meet the project requirements. Large diameter mill rolls are available to assure an efficient seaming process. Factory welded panels are produced in a quality controlled environment and are accordion folded and tightly rolled on a heavy-duty core for ease of handling and time saving installation.

DURA♦SKRIM®

Irrigation Canal Liner

| PRODUCT | PART # |
|---|---|
| DURA♦SKRIM | J30BD |

## APPLICATIONS

- Waste Lagoon Liners
- Floating Covers
- Daily Landfill Covers
- Modular Tank Liners
- Tunnel Liners
- Remediation Liners
- Earthen Liners
- Interim Landfill Covers
- Remediation Covers
- Erosion Control Covers
- Canal Liners
- Disposal Pit Liners
- Water Containment Ponds
- Heap Leach Liners

# DURA♦SKRIM® J30BD

SCRIM REINFORCED POLYETHYLENE

| | | DURA♦SKRIM® J30BD | |
|---|---|---|---|
| | | TYPICAL | |
| PROPERTIES | TEST METHOD | IMPERIAL | METRIC |
| Appearance | | Black/Gray | |
| Thickness, Nominal | ASTM D5994 | 30 Mil | 0.76 mm |
| Weight | ASTM D751 | 125 lbs/MSF | 610 g/m$^2$ |
| Construction | | Extrusion laminated with scrim reinforcement | |
| [2] Grab Tensile Strength | ASTM D7004 | 150 lbs | 667 N |
| [2] Grab Tensile Elongation | ASTM D7004 | 50 % | 50 % |
| [3] Tongue Tear | ASTM D5884 | 50 lbs | 222 N |
| CBR Puncture Resistance | ASTM D6241 | 375 lbs | 1668 N |
| WVTR | ASTM E96 | 0.011 grains/ft$^2$•hr | 0.184 g/m$^2$•day |
| Perm Rating | ASTM E96 | 0.027 Perms | 0.018 g/m$^2$•day•mm Hg |
| Hydraulic Conductivity | ASTM E96 | 2.2x10$^{-10}$ cm/sec | |
| Maximum Static Use Temperature | | 180° F | 82° C |
| Minimum Static Use Temperature | | -70° F | -57° C |

[2] Tests are an average of primary reinforcement directions.
[3] Tests are an average of machine and transverse directions.

DURA♦SKRIM® J30BD is a linear-low-density polyethylene geomembrane with an encapsulated polyester scrim reinforcement. In addition to excellent dimensional stability the tri-directional reinforcement provides exceptional tear and puncture resistance.

DURA♦SKRIM® J30BD is a versatile black/gray geomembrane. The gray outer layer minimizes thermal expansion while providing a cooler working surface. The black layer includes carbon black and thermal stabilizers to assure exposed longevity. Contrasting colors also provide a vital function for ease of damage detection during installation.

Scan QR Code to download technical data sheets.



**RAVEN ENGINEERED FILMS**
P.O. Box 5107 Sioux Falls, SD 57117-5107
Ph: +1 (605) 335-0174 • TF: +1 (800) 635-3456

efdsales@ravenind.com
www.ravenefd.com