AE Order Number Banner

Report Description

This report shows an AE Order Number in Barcode format for purposes of scanning. The Barcode format is Code 39.

App Number: pCS1824032854

3RF - 26

JUNIPER RESOURCES EXPLORATION COMPANY, LLC

8/28/2018

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-147
Revised April 3, 2017

Recycling Facility and/or Recycling Containment

SRF-26

Type of Facility: ☐ Recycling Facility ☑ Recycling Containment*

Type of action: ☐ Permit ☑ Registration ☐ Modification ☐ Extension ☐ Closure ☐ Other (explain) _____

*** At the time C-147 is submitted to the division for a Recycling Containment, a copy shall be provided to the surface owner.**

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: Juniper Resources Exploration Company, LLC (For multiple operators attach page with information) OGRID #: _____
Address: 3624 Oak Lawn Ave Ste 222, Dallas, TX 75219
Facility or well name (include API# if associated with a well): Pinon Unit 306H API# 3004535638
OCD Permit Number: _____ (For new facilities the permit number will be assigned by the district office)
U/L or Qtr/Qtr SWSW Section 16 Township 24N Range 10W County: San Juan
Surface Owner: ☑ Federal ☐ State ☐ Private ☐ Tribal Trust or Indian Allotment

NMOCD
AUG 18 2018
DISTRICT III

2.
☐ **Recycling Facility:**
Location of recycling facility (if applicable): Latitude _____ Longitude _____ NAD83
Proposed Use: ☐ Drilling* ☐ Completion* ☐ Production* ☐ Plugging *
The re-use of produced water may NOT be used until fresh water zones are cased and cemented
☐ Other, ***requires permit for other uses. Describe use, process, testing, volume of produced water and ensure there will be no adverse impact on groundwater or surface water.***
☐ Fluid Storage
☐ Above ground tanks ☐ Recycling containment ☐ Activity permitted under 19.15.17 NMAC explain type _____
☐ Activity permitted under 19.15.36 NMAC explain type: _____ ☐ Other explain _____
☐ For multiple or additional recycling containments, attach design and location information of each containment
☐ **Closure Report (required within 60 days of closure completion):** ☐ Recycling Facility Closure Completion Date: _____

3.
☑ **Recycling Containment:**
☐ Annual Extension after initial 5 years (attach summary of monthly leak detection inspections for previous year)
Center of Recycling Containment (if applicable): Latitude 36.30957 Longitude 107.90929 NAD83
☐ For multiple or additional recycling containments, attach design and location information of each containment
☑ Lined ☐ Liner type: Thickness 45 mil ☑ LLDPE ☐ HDPE ☐ PVC ☐ Other _____
☑ String-Reinforced
Liner Seams: ☑ Welded ☑ Factory ☐ Other _____ Volume: 27,500 bbl Dimensions: L 80' x W _____ x D 170'
☐ Recycling Containment Closure Completion Date: _____

36

4.

Bonding:

☑ Covered under bonding pursuant to 19.15.8 NMAC per 19.15.34.15(A)(2) NMAC **(These containments are limited to only the wells owned or operated by the owners of the containment.)**

☐ Bonding in accordance with 19.15.34.15(A)(1). Amount of bond $_____ **(work on these facilities cannot commence until bonding amounts are approved)**

☐ Attach closure cost estimate and documentation on how the closure cost was calculated.

5.

Fencing:

☑ Four foot height, four strands of barbed wire evenly spaced between one and four feet

☐ Alternate. Please specify_____

6.

Signs:

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

☑ Signed in compliance with 19.15.16.8 NMAC

7.

Variances:

Justifications and/or demonstrations that the proposed variance will afford reasonable protection against contamination of fresh water, human health, and the environment.

Check the below box only if a variance is requested:

☑ Variance(s): Requests must be submitted to the appropriate division district for consideration of approval. If a Variance is requested, include the variance information on a separate page and attach it to the C-147 as part of the application.

If a Variance is requested, it must be approved prior to implementation.

8.

Siting Criteria for Recycling Containment

Instructions: The applicant must provide attachments that demonstrate compliance for each siting criteria below as part of the application. Potential examples of the siting attachment source material are provided below under each criteria.

General siting

Ground water is less than 50 feet below the bottom of the Recycling Containment. 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. - Written confirmation or verification from the municipality; written approval obtained from the municipality	☐ Yes ☑ No ☐ NA
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Minerals 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
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; visual inspection (certification) of the proposed site	☐ Yes ☑ No
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; aerial photo; satellite image	☐ Yes ☑ No
Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; visual inspection (certification) of the proposed site	☐ Yes ☑ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; topographic map; visual inspection (certification) of the proposed site	☐ Yes ☑ No

9.
Recycling Facility and/or Containment Checklist:
Instructions: Each of the following items must be attached to the application. Indicate, by a check mark in the box, that the documents are attached.

- ☑ Design Plan - based upon the appropriate requirements.
- ☑ Operating and Maintenance Plan - based upon the appropriate requirements.
- ☑ Closure Plan - based upon the appropriate requirements.
- ☑ Site Specific Groundwater Data -
- ☑ Siting Criteria Compliance Demonstrations –
- ☑ **Certify that notice of the C-147 (only) has been sent to the surface owner(s)**

10.
Operator Application Certification:
I hereby certify that the information and attachments submitted with this application are true, accurate and complete to the best of my knowledge and belief.

Name (Print): Adam Martinez Title: Operations Superintendent

Signature: Adam Martinez Date: 8/8/2018

e-mail address: adam.martinez@jnpresources.com Telephone: (505) 320-6112

11.
OCD Representative Signature: _____ **Approval Date:** _____

Title: _____ **OCD Permit Number:** 3RF- 26

☒ OCD Conditions Place Barriers Between Loading/Unload zone from vehicles.
☐ Additional OCD Conditions on Attachment

C-147 Registration Package

Prepared for

Juniper Resources Exploration Company, LLC
3333 Lee Parkway, Suite 210
Dallas, TX 75219
(214) 443-0007

Developed by

479 Wolverine Drive
Bayfield, Colorado 81122
Phone: (970) 881-4080

Table of Contents

1. Introduction

Applicant	Juniper Resources Exploration Company, LLC
Project Name	Pinon Unit 306H (API# 3004535638)
Project Type	Recycling Containment Registration
Legal Location	UL - M, 1277' FSL & 318' FWL, Section 16, T24N, R10W
Lease Number(s)	NMNM-101058

In accordance with NMAC 19.15.34, Juniper Resources Exploration Company, LLC (Juniper) requests the registration of the proposed Recycling Containment through the approval of this C-147 registration package. The facility and containments will be used to treat and recycle produced water for re-use in Juniper Resources Exploration Company, LLC completion activities.

This package contains the C-147 form and associated documents for registration of the Pinon Unit 306H Recycling Containment.

A copy of the C-147 has been submitted to the land owner, the Bureau of Land Management.

2. Variance Explanation

All requested variance provide equal or better protection of fresh water, public health, and the environment.

C-147 #3: Recycling Containment

19.15.34.12.A(2) NMAC states "The operator shall construct the containment in a levee with an inside grade no steeper than two horizontal feet to one vertical foot (2H:1V). The levee shall have an outside grade no steeper than three horizontal feet to one vertical foot (3H:1V). The top of the levee shall be wide enough to install an anchor trench and provide adequate room for inspection and maintenance."

Juniper proposes to install one above ground storage containment using metal walls to create a steel tank to contain the primary liner. Juniper will not be constructing a levee. The steel walls will be vertical and there will not be an anchor trench.

C-147 #5 Fencing

19.15.34.12.D(1) NMAC states "Recycling containments shall be fenced with a four foot fence that has at least four strands of barbed wire evenly spaced in the interval between one foot and four feet above ground level."

Juniper shall remove the access ladders from the containment to deter unauthorized wildlife and human access when personnel are not present or the site is left unattended.

3. Siting Criteria

3.1. Distance to Groundwater

The NM State Engineers Office iWaters Database shows a water well within section 29 of township 24N and range 10W. The elevation of the iWaters Data Point SJ03141 is approximately 6,590' with a groundwater depth of 595'. The Pinon Unit 306H has an elevation of 6732' which is an increase of 142' establishing the estimated groundwater depth for the Pinon Unit 306H to be greater than 500'. 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. The BLM designated the yellow line marked on the Aerial and Topo maps as non-jurisdictional in the NEPA document of the Application for Permit to Drill.

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.

3.6. Distance to Subsurface Mines

The recycling containment is not located in an "unstable" area. The location is not over a mine and is not on the side of a hill. The location of the excavated surface material will not be located within 100 feet of a continuously flowing or significant watercourse. According to the NM EMNRD Mining and Mineral Divisions database there are no subsurface mines in Section 16, Township 24N, Range 10W of San Juan County.

3.7 Distance to 100-Year Floodplain

The Pinon Unit 306H proposed recycling containment is not located within a 100-year floodplain as demonstrated on the FEMA Map.

4. Design and Construction Plan

In accordance with Rule 19.15.34 the following information describes the design and construction of the recycling containment on Juniper's locations.

The Juniper Design and Construction Plan assists Juniper personnel in ensuring compliance with the minimum design and construction requirements for recycling containments as defined by the NMOCD outlined in 19.15.34.12 NMAC. The plan applies to any Juniper Employee(s) and subcontractor(s) whose job requires them to assist with the design and construction of the recycling facility. The plan is designed to ensure compliance with the minimum design and construction requirements for recycling facilities as defined by the NMOCD outlined in 19.15.34.12 NMAC.

Juniper shall design and construct a recycling containment in accordance with the following specifications.

4.1. Foundation Construction

The well pad has already been cleared from drilling operations occurring in 2017. Topsoil is stacked on the perimeter and no further foundation prep work will be needed on the existing well pad.

The recycling containment will have a properly constructed foundation and interior slopes consisting of a firm, unyielding base, smooth and free of rocks, debris, sharp edges or irregularities to prevent the liner's rupture or tear. The containment will ensure confinement of produced water, to prevent releases and to prevent overtopping due to wave action or rainfall. A geotextile under the liner will be used, if needed, to reduce the localized stress-strain or protuberances that otherwise may compromise the liner's integrity.

The containment will consist of 12' high walls and shall prevent the run-on of surface water.

4.2. Liner Construction

Juniper's recycling containment shall incorporate, a primary (upper) liner and a secondary (lower) liner with a leak detection system. The primary (upper) liner will be a geomembrane liner composed of an impervious, synthetic material that is resistant to ultraviolet light, petroleum hydrocarbons, salts and acidic and alkaline solutions. The primary liner will be a 45-mil LLDPE string reinforced liner. The secondary liner will be a 30-mil LLDPE string reinforced liner.

Juniper shall ensure the subcontractor installing the recycling containment minimized liner seams and orient them up and down, not across, a slope of the levee. Juniper shall ensure that factory welded seams shall be used where possible. Juniper shall ensure the subcontractor installing the recycling containment ensures field seams in the geosynthetic material are thermally seamed and that prior to any field seaming, the installer overlaps the liners four to six inches. The subcontractor installing the liner shall minimize the number of field seams and corners and irregularly shaped areas. Juniper will only hire qualified personnel to perform field welding and testing.

Juniper shall ensure that the liner is protected from excessive hydrostatic force and mechanical damage at the points of discharge into or suction from the recycling containment. Additionally, Juniper shall ensure external discharge or suction lines shall not penetrate the liner. Juniper shall accomplish both of these by the installation of an up and over "candy cane" shaped ridged piping that has a steal diverter plate to distribute the water minimizing hydrostatic forces.

4.3. Leak Detection System

Juniper shall place a leak detection system between the upper and lower geomembrane liners that shall consist of a 200-mil genet to facilitate drainage. The leak detection system shall consist of a properly designed drainage and collection and removal system placed above the lower geomembrane liner in depressions and sloped to facilitate the earliest possible leak detection. A 3 foot wide by 3 foot long by 2 foot deep depression will be contracted to allow for collection of any leaking liquid. A 2 inch PVC liner will be installed in between the primary and secondary liners from the top of the tank to the depression to allow for detection and removal of liquid.

4.4. Signage

Juniper will sign the containment with an upright sign no less than 12" by 24" with lettering not less than 2" in height in a conspicuous place near the containment. Juniper will provide the operator's name, location of the containment by quarter-quarter or unit letter, Section, Township, Range and emergency telephone numbers.

4.5. Entrance Protection

Juniper shall remove the access ladders from the containment to deter unauthorized wildlife and human access when personnel are not present or the site is left unattended.

4.6. Wildlife Protection

Juniper shall ensure that the containment is screened, netted or otherwise protective of wildlife, including migratory birds. Juniper shall install an electronic deterrent system as approved by the BLM to deter wildlife and migratory birds. Juniper personnel shall on a monthly basis inspect for and, within 30 days of discovery, report any dead migratory birds or other wildlife to the appropriate agency and to the division district office in order to facilitate assessment and implementation of measures to prevent incidents from reoccurring.

5. Maintenance and Operating Plan

In accordance with Rule 19.15.34 the following information describes the operation and maintenance of recycling containments on Juniper's locations.

5.1. Inspection Timing

Juniper shall inspect the recycling containment and associated leak detection systems weekly while it contains fluids. A current log of inspections will be maintained and the log will be made available for review upon division request.

5.2. Maintenance

1. Juniper shall maintain and operate the recycling containment as follows:
   A. Removing any visible lay of oil from the surface of the containment.
   B. Maintaining at least 3' of freeboard at each containment
   C. The injection or withdrawal of fluids from the containment shall be accomplished through a header, diverter or other hardware that prevents damage to the liner by erosion, fluid jets, or impact from installation and removal of hoses and pipes
   D. If the containment's primary liner is compromised above the fluid's surface, Juniper will repair the damage or initiate replacement of the primary liner within 48 hours of discovery or seek an extension from the division district office.
   E. If the primary liner is compromised below the fluid's surface, Juniper will remove all fluid above the damage or leak within 48 hours of discovery, notify the divisions distraction office and repair the damage or replace the primary liner.
   F. The containment will be operated to prevent the collection of surface water run-on with containment walls of 9.5' height.
   G. Juniper will install, or maintain on site, an oil absorbent boom or other device to contain an unanticipated release.
   H. Juniper will not store or discharge any hazardous waste at the facility or within the containment.

5.3. Cessation of Operations

Juniper will report the cessation of operations or if less than 20% of the total fluid capacity is used every six months following the first withdrawal of produced water for use to the appropriate division district office.

6. Closure Plan

In accordance with Rule 19.15.34 the following information describes the closure requirements of recycling containments on Juniper's locations.

All closure activities will include proper documentation and be available for review upon request and will be submitted to the OCD within 60 days of closure. Closure report will be filed on C-147 and incorporate the following:

- Details on capping and covering, where applicable
- Inspection Reports
- Sampling Results

Once Juniper has ceased operations, all fluids will be removed within 60 days and the containment shall be closed within six months.

6.1 Fluid Removal

The containment will be closed by first removing all fluids, contents and synthetic liners and disposed of in a division-approved facility or recycle, reuse or reclaim the liquids in a manner that the appropriate division district office approves.

6.2 Soil Sampling

Juniper will test the soils beneath the containment for contamination with a five-point composite sample which includes stained or wet soils, if any, and that sample shall be analyzed for the constituents listed in Table I below:

Components	Test Method	51' - 100' GW Depth Limit (mg/kg)	>100' GW Depth Limit (mg/kg)
Chloride	EPA 300.0	10,000	20,000
TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	2,500	2,500
GRO + DRO	EPA SW-846 Method 8015M	1,000	1,000
BTEX	EPA SW-846 Method 8021B or 8260B	50	50
Benzene	EPA SW-846 Method 8021B or 8260B	10	10

a. If any containment concentration is higher than the parameters listed in Table I, Juniper will receive approval before proceeding with closures as the division may required additional delineation upon review of the results.
b. If all contaminant concentrations are less than or equal to the parameters listed in Table I then Juniper will proceed to backfill with non-waste containing, uncontaminated, earthen material.

6.3 Reclamation

Juniper's proposed containment is located on an active well pad. As a result, the area will remain an active working area once the containment is closed and removed in accordance with Rule 19.15.34. Juniper will reclaim the location as outlined in the Reclamation Plan for the existing well location. Reclamation of the site where pit footprint is contained will be reclaimed during interim reclamation after drilling final APDs on site. Juniper will fully reclaim the containment's location upon plug and abandonment of the location due to the containment being placed on an existing operational well pad that will remain operational until the end of the wells life at which time reclamation and re-vegetation will take place.

Juniper will reclaim the containment's location once the recycling containment is closed to a safe and stable condition that blends with the surrounding undisturbed area. Topsoils and subsoils shall be replaced to their original relative positions and contoured so as to achieve erosion

control, long-term stability and preservation of surface water flow patterns. Juniper shall reside the disturbed area in the first favorable growing season following the containment closure.

Juniper will notify the division when reclamation and re-vegetation are completed. Reclamation of all disturbed areas no longer in use shall be considered complete when all ground surface disturbed activities at the site have been completed, and a uniform vegetative cover has been established that reflects a life-form ration of plus or minus 50% of pre-disturbance levels and a total percent plant cover of a least 70% of pre-disturbance levels, excluding noxious weeds. The re-vegetation and reclamation obligations imposed by federal, state trust land or tribal agencies on lands managed by those agencies shall supersede these provisions and govern the obligations of Juniper subject to those provisions.

ATTACHMENT A - iWATERS REPORT

New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

(R=POD has been replaced, O=orphaned, C=the file is closed)

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

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
SJ 01713		SJ	SJ		4	4	33	24N	10W	239936	4017203*	373		
SJ 01714		SJ	SJ		3	4	36	24N	10W	244334	4017107*	442	284	158
SJ 03141		SJ	SJ	3	2	1	29	24N	10W	237520	4019956*	640	595	45

Average Depth to Water: **439 feet**

Minimum Depth: **284 feet**

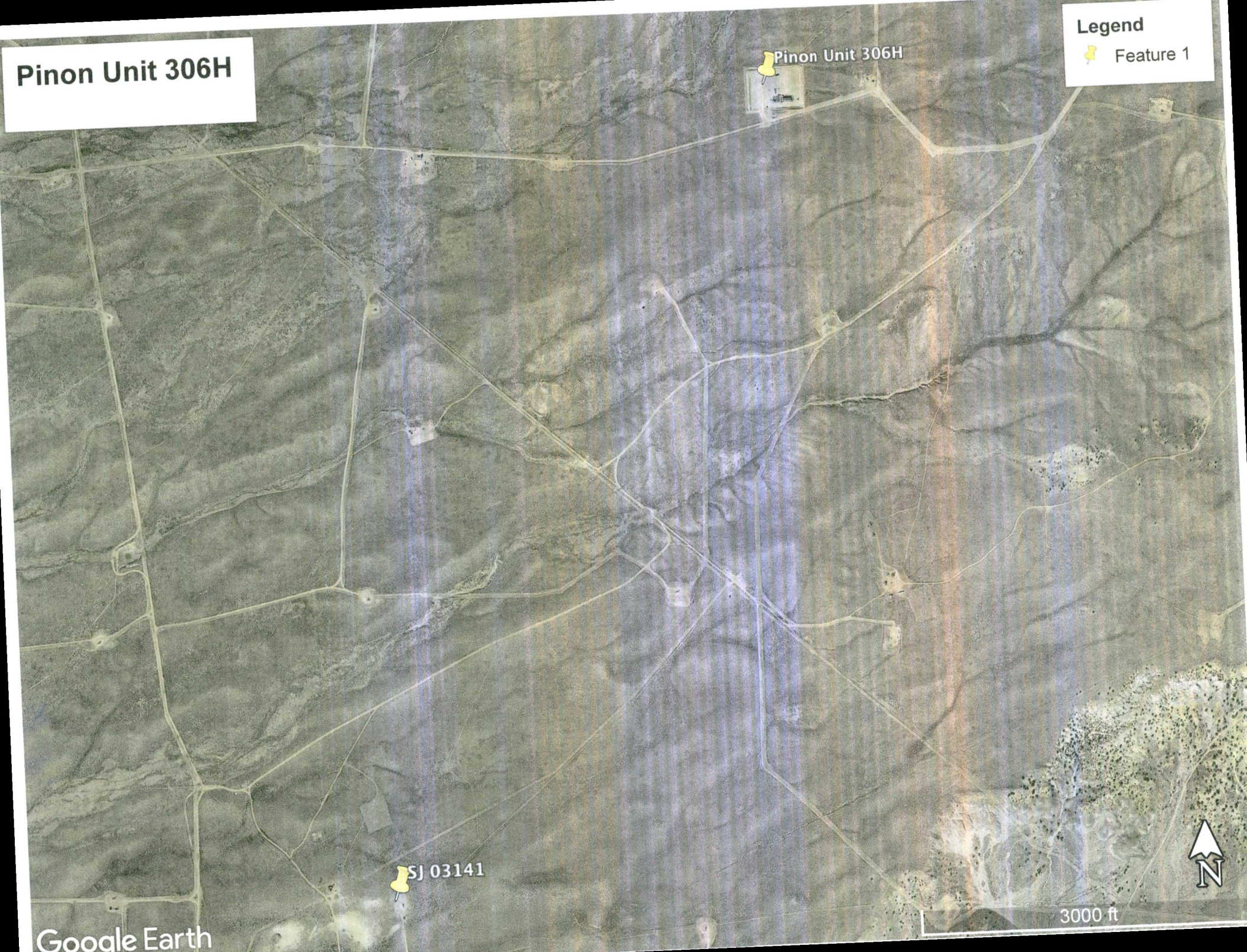
Maximum Depth: **595 feet**

Record Count: 3

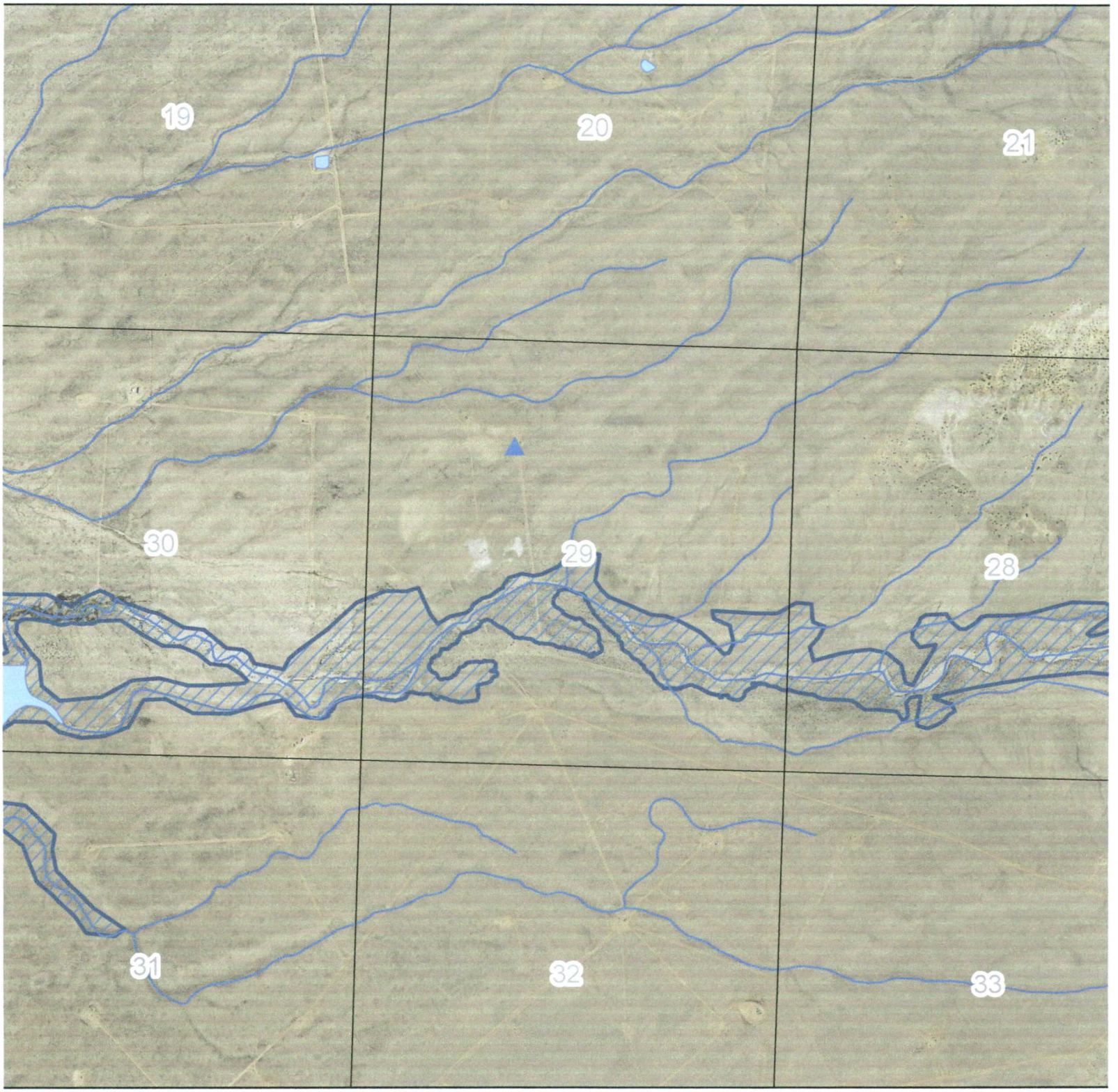
PLSS Search:

Township: 24N **Range:** 10W

***UTM location was derived from PLSS - see Help**


Pinon Unit 306H
Legend
Feature 1
Pinon Unit 306H
SJ 03141
N
3000 ft
Google Earth

Ground Water Data



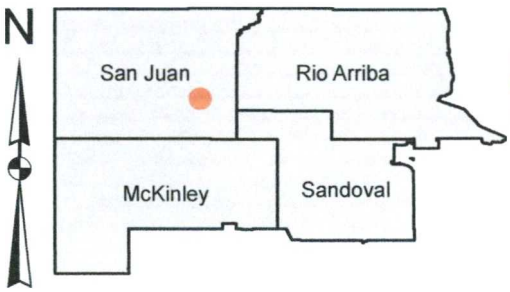
Legend

- Points of Diversion
- NHD Water Bodies
- USGS Water Courses

FEMA Flood Zone

- A- High Risk Area

0 1,300 2,600 5,200 Feet



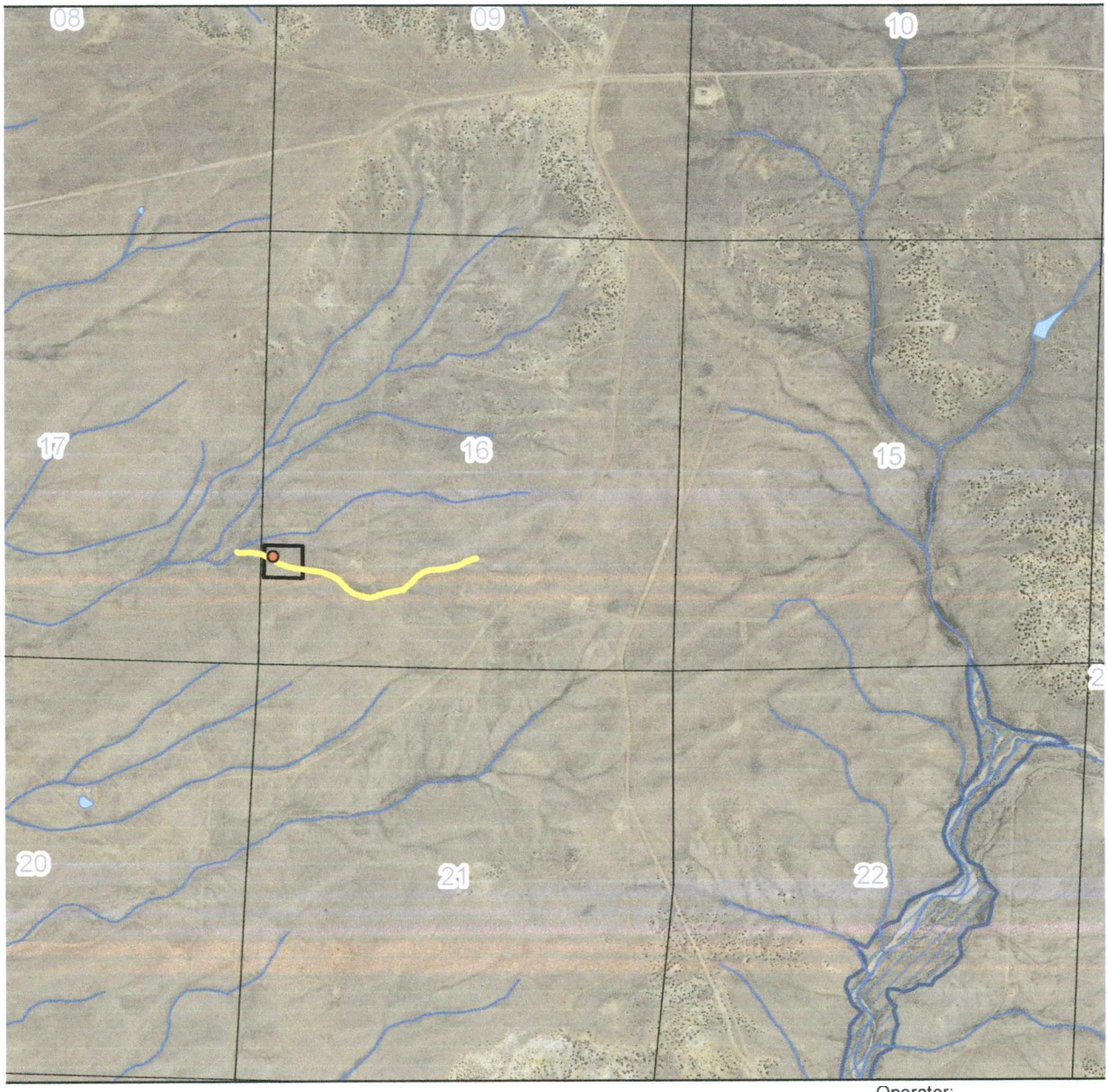
Operator: JUNIPER RESOURCES

Contractor: EIS Energy Inspection Service

NAD 1983 UTM Zone 13N	Author: TK (EIS LLC)	Date: 8/2/2018

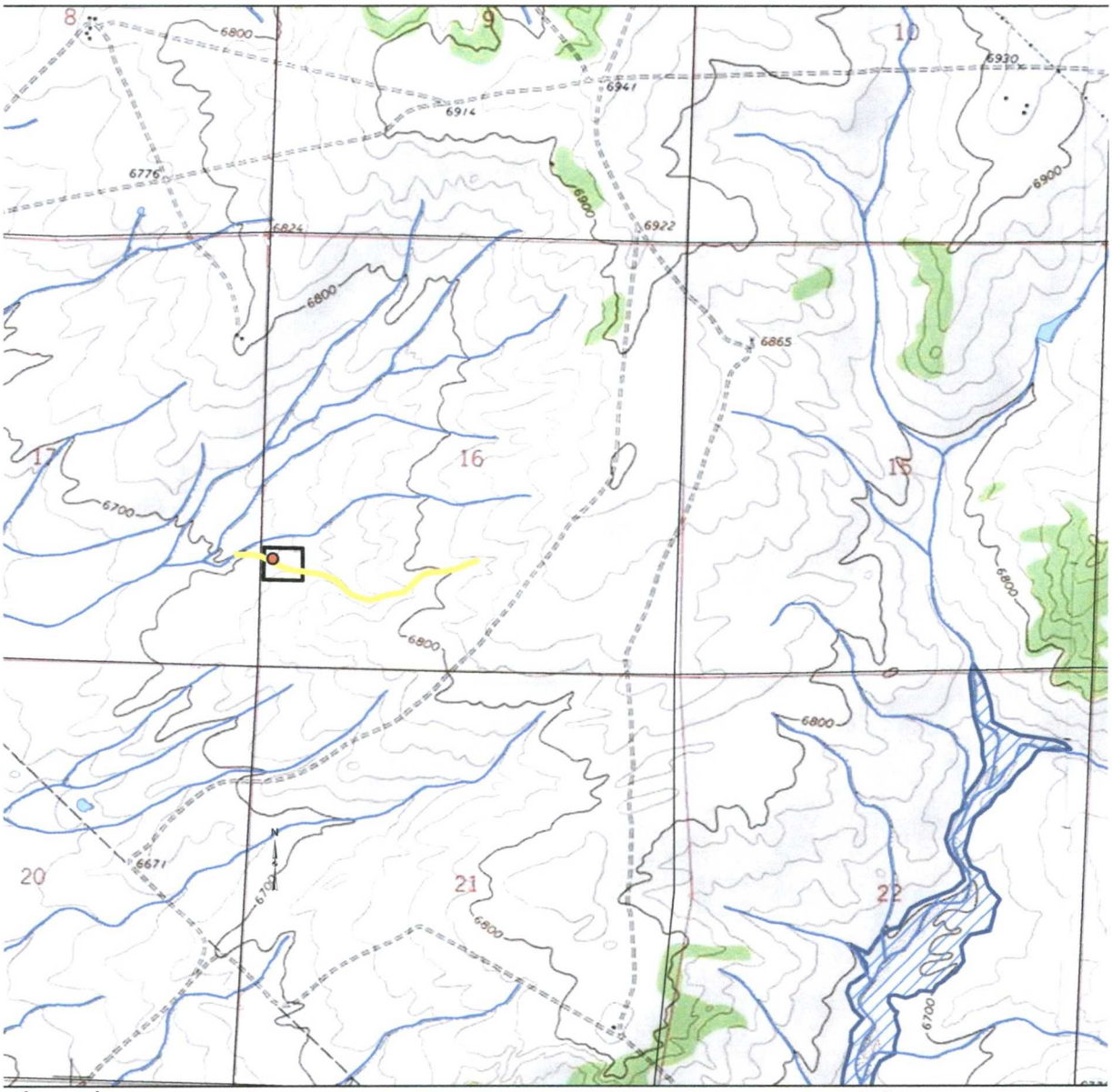
ATTACHMENT B - AERIAL MAP

Recycling Containment



ATTACHMENT C - TOPO MAP

Recycling Containment



ATTACHMENT D - PINON UNIT 306H C-102

OIL CONS. DIV DIST. 3

JUL 20 2017

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, N.M. 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, N.M. 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

AS-DRILLED

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-045-35638	98102	PINON UNIT HZ (OIL)

[4] Property Code	[5] Property Name	[6] Well Number
~~314246~~ 317565	PINON UNIT	306H

[7] OGRID No.	[8] Operator Name	[9] Elevation
371654	JUNIPER RESOURCES EXPLORATION CO. LLC.	6732

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	16	24 N	10 W		1277	SOUTH	318	WEST	SAN JUAN

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	28	24 N	10 W		450	NORTH	689	EAST	SAN JUAN

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
PENETRATED SPACING UNITS: S/2 SEC. 16, ALL OF SEC. 21, N/2 SEC. 28, T24N, R10W, 1280 ACRES 8005.44 ACRES-W/2 SEC. 4, ALL SEC. 5-10, 15-18 & 21, N/2 SEC. 22 & 28, T24N, R10W - UNDIVIDED UNIT			R-13857A (8005.44 ACRES)

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

Total acres 1280

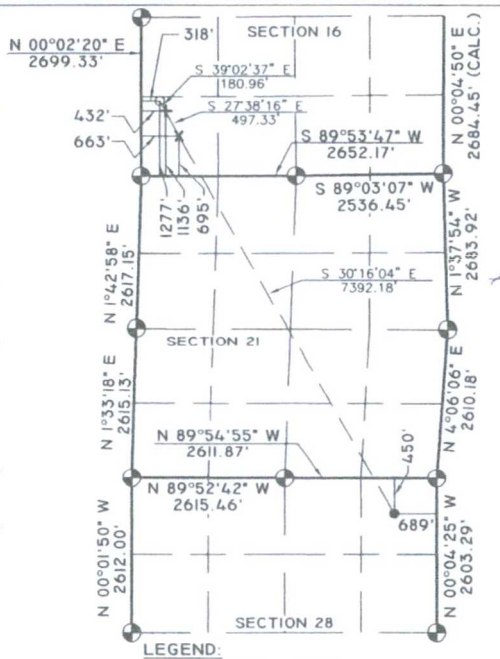
[16]

SURFACE
SEC. 16, T24N, R10W
1277' FSL, 318' FWL
LAT: 36.309413° N
LONG: 107.908740° W
NAD 83
LAT: 36.309402° N
LONG: 107.908121° W
NAD 27

POINT OF ENTRY
SEC. 16, T24N, R10W
1136' FSL, 432' FWL
LAT: 36.309027° N
LONG: 107.908353° W
NAD 83
LAT: 36.309016° N
LONG: 107.907734° W
NAD 27

LANDING POINT
SEC. 16, T24N, R10W
695' FSL, 663' FWL
LAT: 36.307817° N
LONG: 107.907569° W
NAD 83
LAT: 36.307806° N
LONG: 107.906950° W
NAD 27

BOTTOM HOLE
SEC. 28, T24N, R10W
450' FNL, 689' FEL
LAT: 36.290286° N
LONG: 107.894910° W
NAD 83
LAT: 36.290275° N
LONG: 107.894292° W
NAD 27



LEGEND:
○ = SURFACE LOCATION
+ = POINT OF ENTRY
● = BOTTOM HOLE LOCATION
X = LANDING POINT
◔ = FOUND 1932 U.S.G.L.O. BRASS CAP

[17] OPERATOR CERTIFICATION

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

Signature — Date: 7/18/17

Matt Strickler
Printed Name

mstrickler@jrnresources.com
E-mail Address

[18] SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

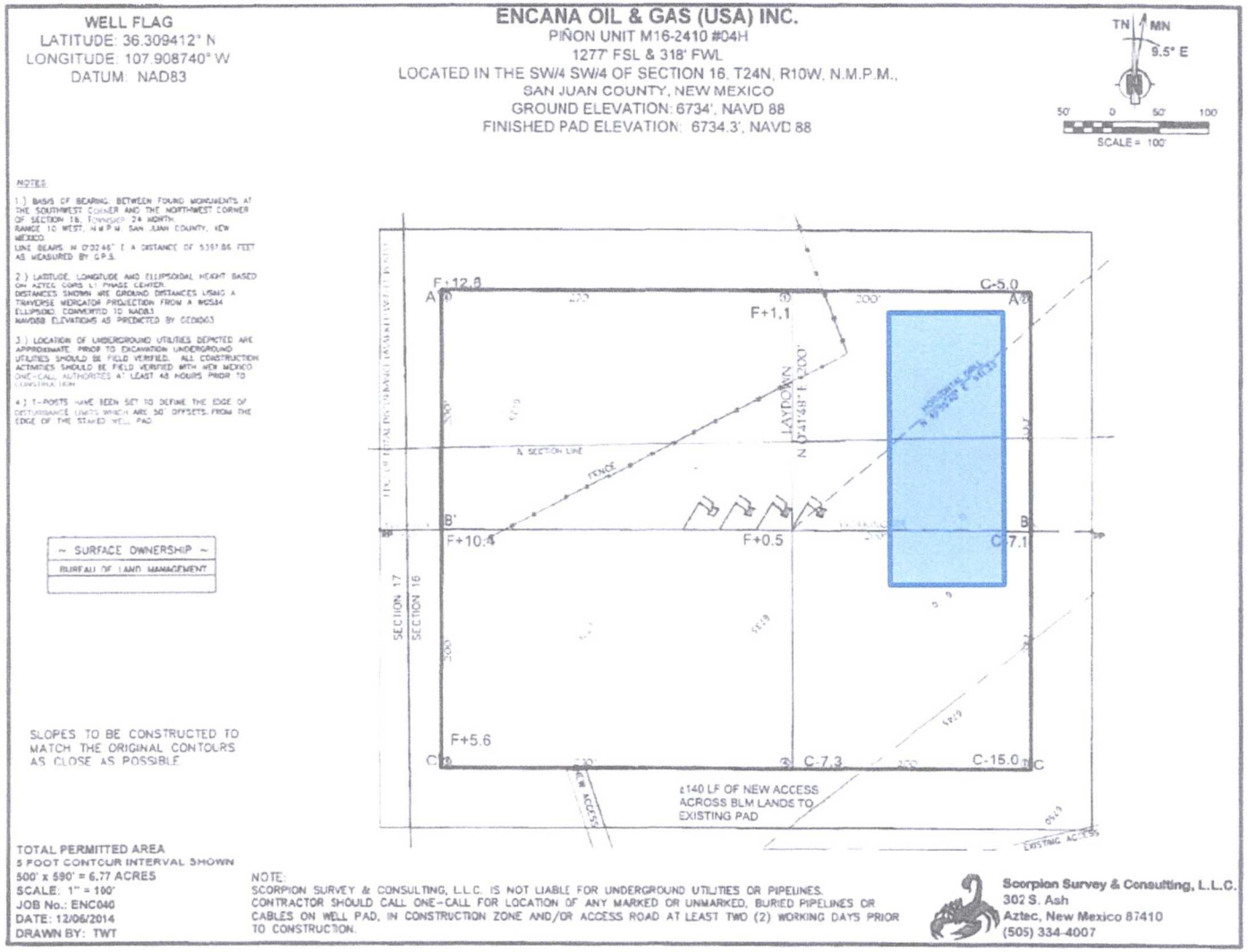
3-20-17
Date of Survey

Signature and Seal of Professional Surveyor

MARSHALL W. LINDEN
NEW MEXICO
17078
7-17-17
PROFESSIONAL SURVEYOR

17078
Certificate Number

Pinon Unit 306H ST Pad – Preliminary Water Storage Siting



JUNIPER RESOURCES

ATTACHMENT E - MINES MAP

Active Mines in New Mexico

8/2/2018, 4:25:39 PM

1:1,155,581

0 5 10 20 mi

0 12.5 25 50 km

Registered Mines

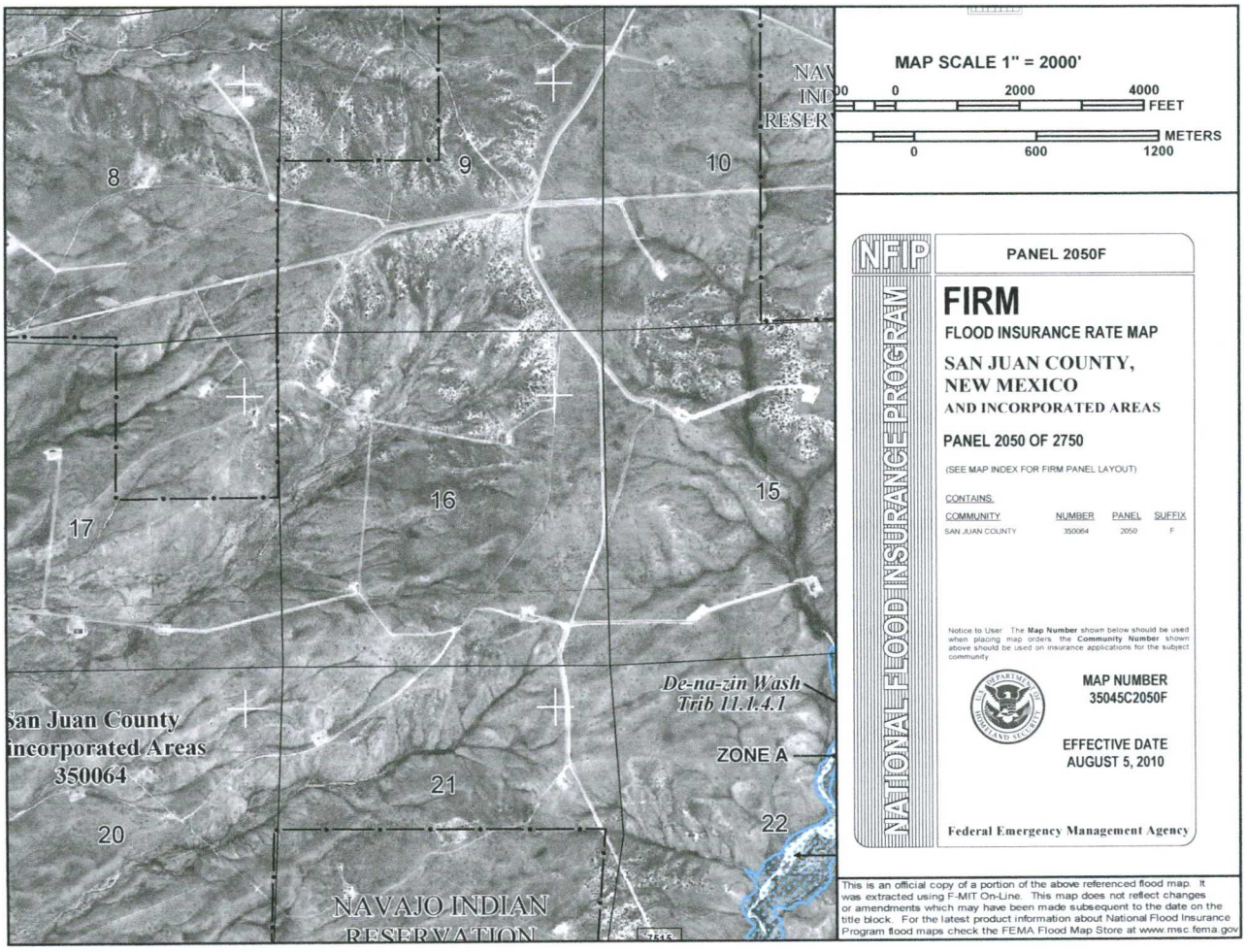
- Aggregate, Stone etc.
- Aggregate, Stone etc.
- Aggregate, Stone etc.
- Aggregate, Stone etc.
- Coal
- Humate
- Metals
- Red Dog, Scoria
- Red Dog, Scoria
- Uranium

Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS

EMNRD MMD GIS Coordinator

NM Energy, Minerals and Natural Resources Department (http://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=1b5e577974664d689b47790897ca2795)

ATTACHMENT F - FEMA MAP



ATTACHMENT G - HYDROLOGY REPORT

Hydrogeological Report for Pinon Unit 306H

Regional Geological context:

The Nacimiento Formation is of Paleocene age (Baltz, 1967, p. 35). It crops out in a broad band inside the southern and western margins of the central basin and in a narrow band along the west face of the Nacimiento Uplift. The Nacimiento is a nonresistant unit and typically erodes to low, rounded hills or forms badland topography.
The Nacimiento Formation occurs in approximately only the southern two-thirds of the San Juan Basin where it conformably overlies and intertongues with the Ojo Alamo Sandstone (Fassett, 1974, p. 229). The Nacimiento Formation grades laterally into the main part of the Animas Formation (Fassett and Hinds, 1971, p. 34); thus, in this area, the two formations occupy the same stratigraphic interval.
Strata of the Nacimiento Formation were deposited in lakebeds in the central basin area with lesser deposition in stream channels (Brimhall, 1973, p. 201). In general, the Nacimiento consists of drab, interbedded black and gray shale with discontinuous, white, medium- to very coarse grained arkosic sandstone (Stone e al., 1983, p.30). Stone et al. indicated that the formation may contain more sandstone than commonly reported because some investigators assume the slope-forming strata in the unit area shales, whereas in many places the strata actually are poorly consolidated sandstones. Total thickness of the Nacimiento Formation ranges from about 500 to 1,300 feet. The unit generally thickens from the basin margins toward the basin center (Steven et al., 1974). The sandstone deposits within the Nacimiento Formation are much thinner than the total thickness of the formation because their environment of deposition was localized stream channels (Brimhall, 1973, p. 201). The thickness of the combined San Jose, Animas, and Nacimiento Formations ranges from 500 to more than 3.500 feet.

Hydraulic Properties:

Reported well yields for 53 wells completed in either the Animas or Nacimiento Formations range from 2 to 90 gallons per minute and the median yield is 7.5 gallons per minute. The primary use of water from Nacimiento and Animas Formations is domestic and livestock supplies. There are no known aquifer tests for the Animas or Nacimiento Formations, but specific capacities reported for six wells range from 0.24 to 2.30 gallons per minute per foot of drawdown (Levings et al., 1990).
The Animas and Nacimiento Formations are in many ways hydrologically similar to the San Jose Formation because sands in both units produce approximately the same quantities of water. However, the greater percentage of fine materials in the Animas and Nacimiento Formations may restrict downward vertical leakage to the Ojo Alamo Sandstone or Kirtland Shale. The poorly cemented fine material is highly erodible, forms a badland terrain, and supports only spotty vegetation. These conditions are more conductive to runoff than retention of precipitation.

References:

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

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

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

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

Levings, G.W., Craigg, S.d., Dam, W.L., Kernodle, J.M., and Thorn, C.R., 1990, Hydrogeology of the San Jose, Nacimiento, and Animas Formations in the San Juan structural basin, New Mexico, Colorado, Arizona, and Utah: USGS Hydrologic Investigations Atlas HA-720-A, 2 sheets.

Stone, W.J., Lyford, F.P., Frenzel, P.F., Mizell, N.H., and Padgett, E.T., 1983, Hydrogeology and water resources of San Juan Basin, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Hydrologic Report 6.

DURA•SKRIM® N45B

RAVEN

SCRIM REINFORCED POLYETHYLENE – NSF/ANSI STANDARD 61 CERTIFIED

PRODUCT DESCRIPTION

DURA♦SKRIM® N45B is a flexible geomembrane, reinforced with a closely knit 9x9 weft inserted polyester scrim fully encapsulated between two layers of highly UV stabilized linear low density polyethylene. Exceptional toughness, high tensile and puncture strength is achieved with the combination of premium high strength LLDPE and dense scrim reinforcement. A highly stabilized formulation consisting of antioxidants, UV stabilizers and carbon black provide excellent protection for long-term exposed or barrier applications. DURA♦SKRIM® N-Series geomembranes are produced in the color black as standard, and are available in other custom manufactured colors with minimum order quantity requirements.

PRODUCT USE

DURA♦SKRIM® N45B is used in applications that require exceptional outdoor life requiring up to 20 years of exposure depending upon the geographical location. Applications requiring high tear properties, exceptional tensile strength and puncture resistance utilize N45B to meet these demands. DURA♦SKRIM® N-Series is manufactured from a chemical-resistant, linear-low-density polyethylene with excellent cold crack performance and resistance to thermal expansion.

DURA♦SKRIM® N45B meets the physical property values as stated in GRI test method GM25, and is certified under the NSF/ANSI Standard 61, Drinking Water System Components – Health Effects.

SIZE & PACKAGING

DURA♦SKRIM® N45B 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 controlled environment and are accordion folded and tightly rolled on a heavy-duty core for ease of handling and time saving installation.

DURA•SKRIM®

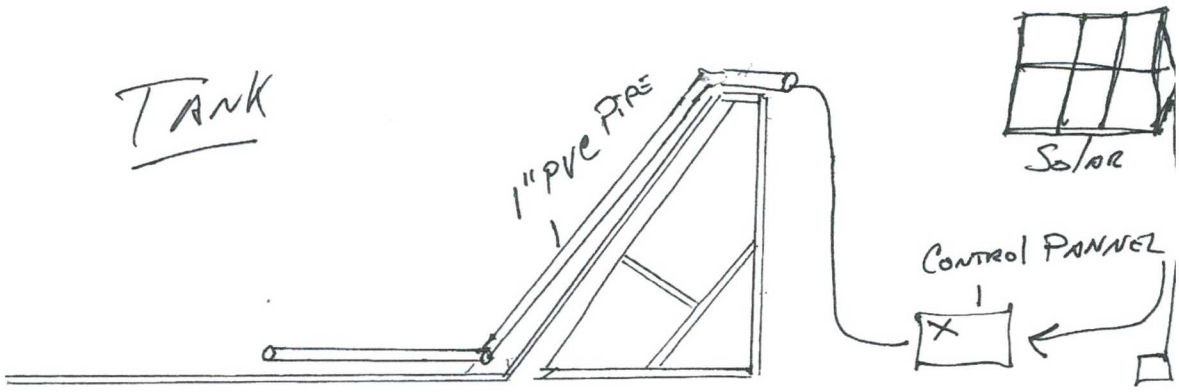
Bio Cell Liner

PRODUCT	PART #
DURA♦SKRIM	N45B

APPLICATIONS

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

ATTACHMENT I - FASTFLO LEAK DETECTION DIAGRAM



WATER SENSITIVE WIRE INSIDE 1" PVC PIPE BETWEEN LINERS. GEO FABRIC ABOVE + BELOW PIPE TO CONTROL CONDENSATION. PROVEN SYSTEM, COMPANY IN BUSINESS FOR YEARS.

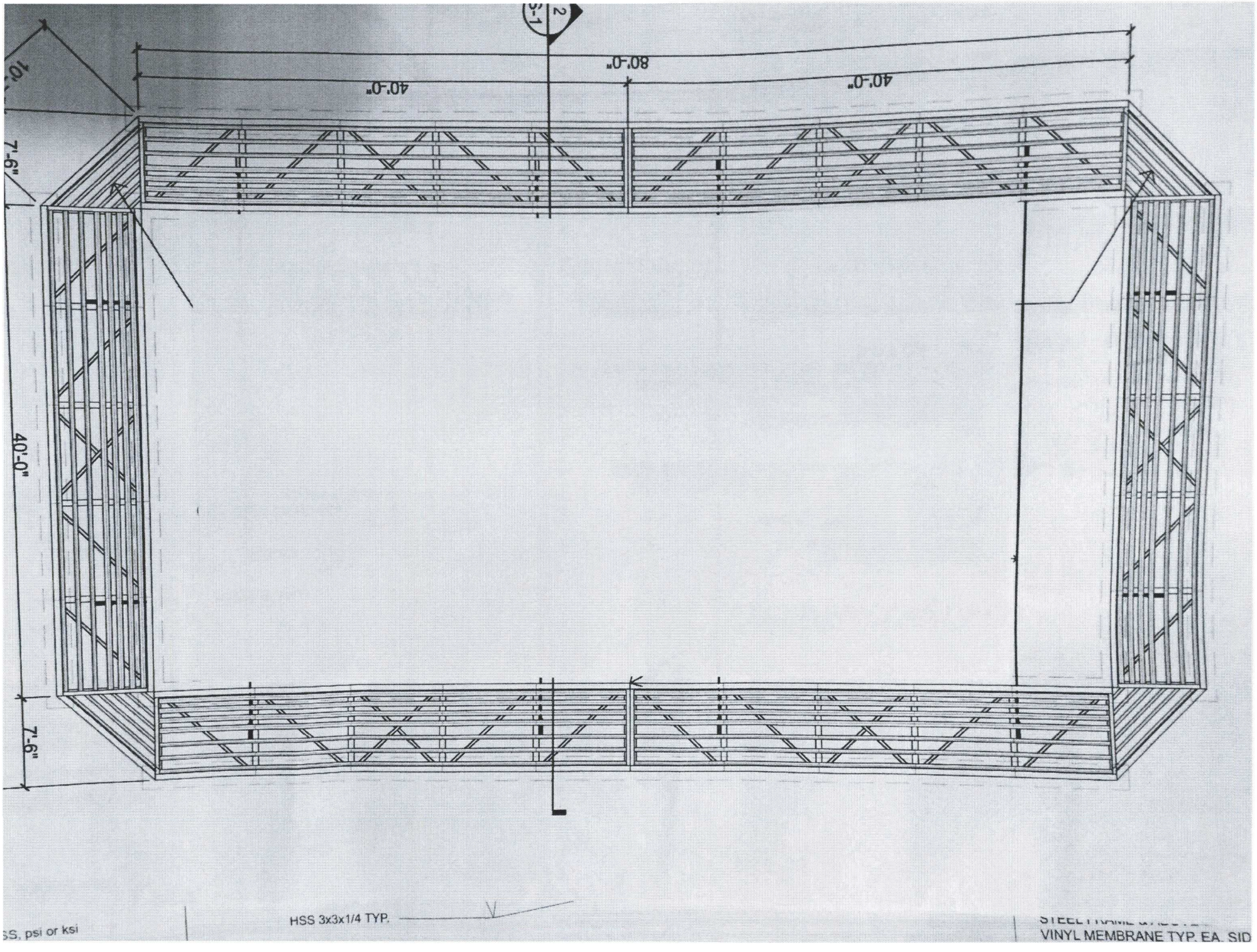
Above Ground Water Containment Specs

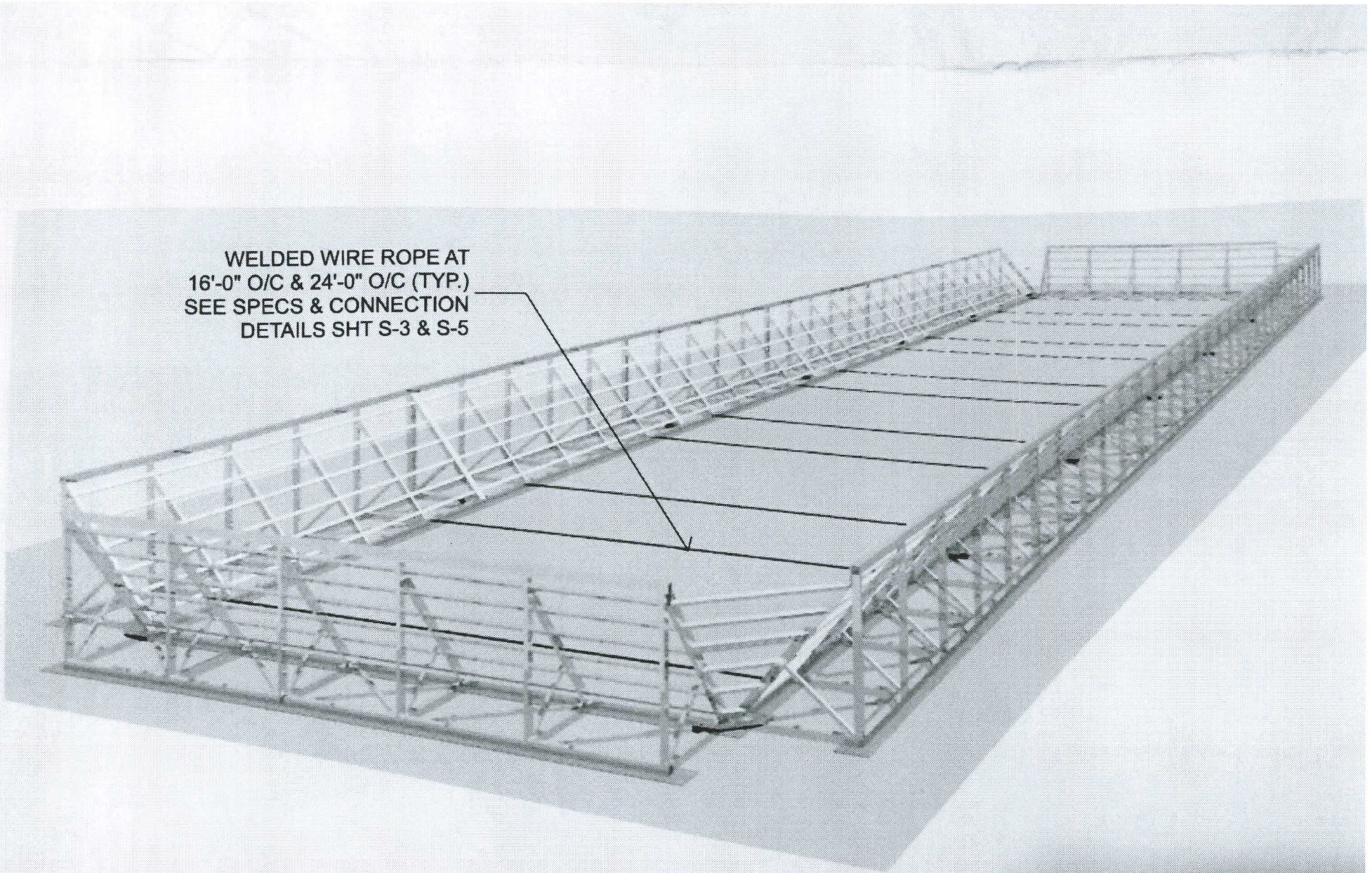
FASTFLO ABOVE GROUND WATER CONTAINMENT SYSTEM

- 80' x 170' TANK (100' X 190' TOTAL FOOTPRINT)
- 27,500 BBL
- TRANSPORT IN/ OUT
- SET UP / TEAR DOWN / CLEAN UP
- 30-40 DAY WATER STORAGE
- 20 DAY FRAC

Water Sources

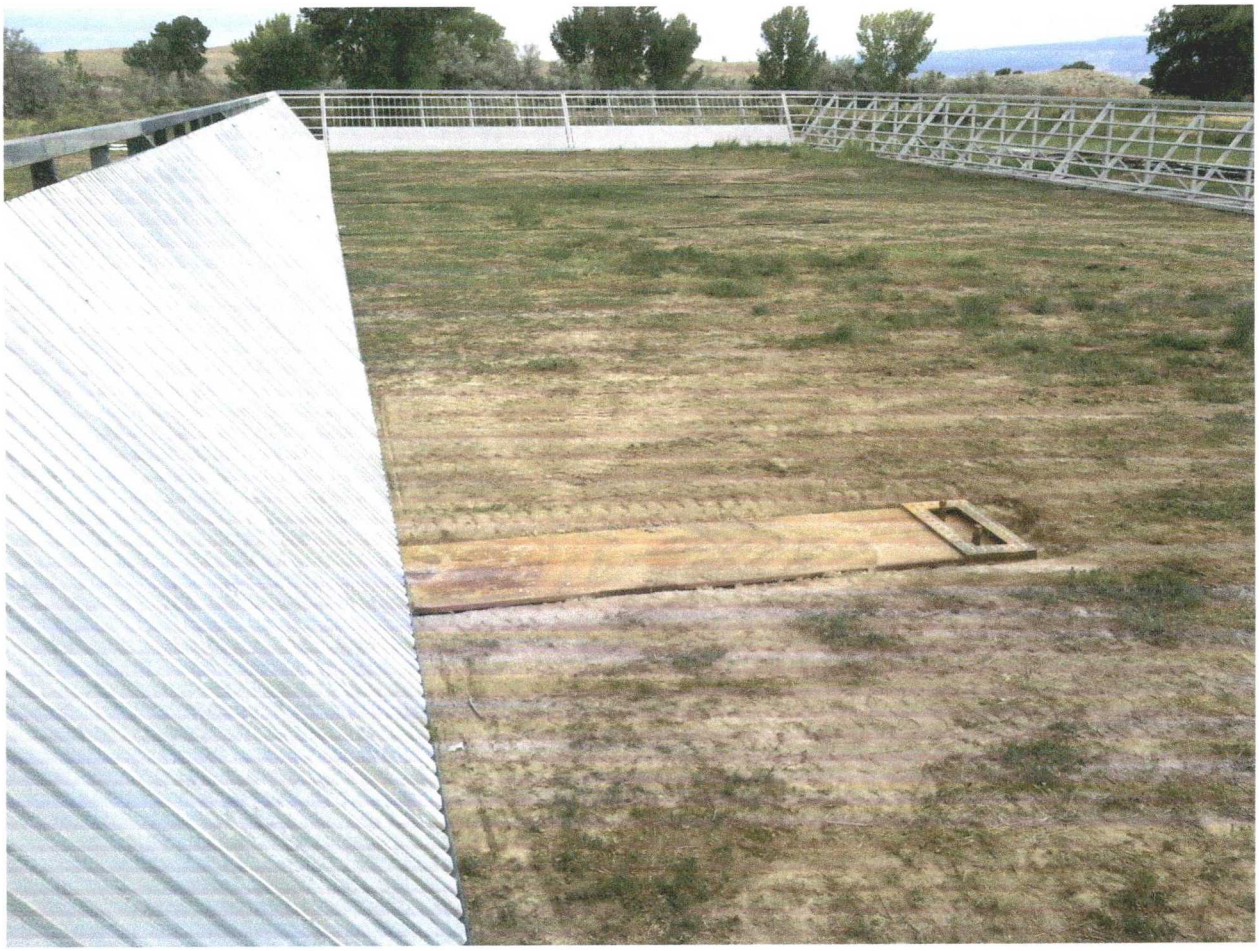
- Primary Water Source: Produced Fruitland Coal Water from Juniper and Juniper West coal fields
  - Produced Water analysis provided in appendix (Note analysis is prior to injection filtration)
  - Produced Water will be undergo additional filtration at above ground storage site
- Supplemental Water Source: Fresh Water from Blanco Trading Post

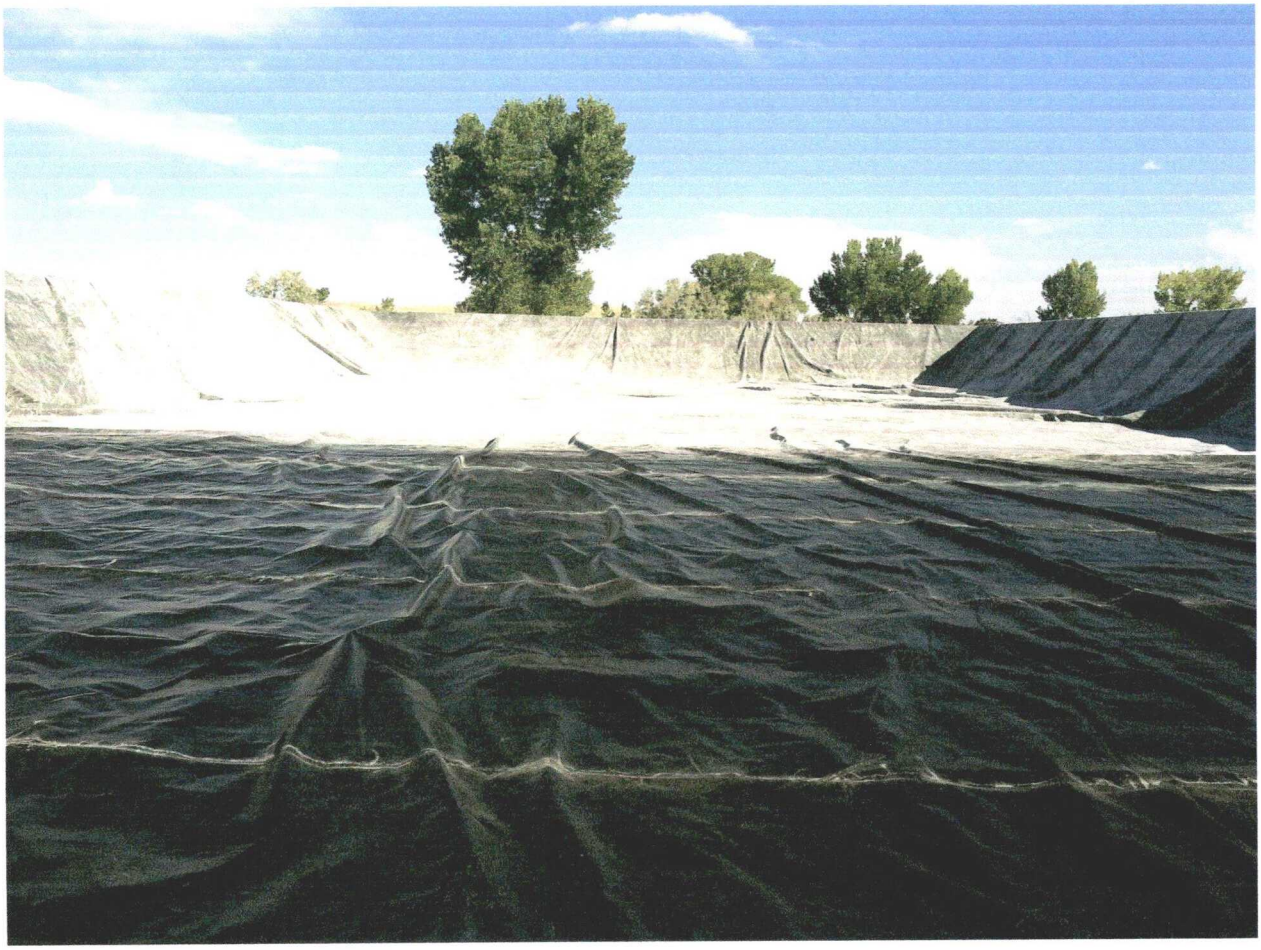

40'-0"
80'-0"
40'-0"
7'-6"
40'-0"
7'-6"
HSS 3x3x1/4 TYP.
VINYL MEMBRANE TYP. EA. SID

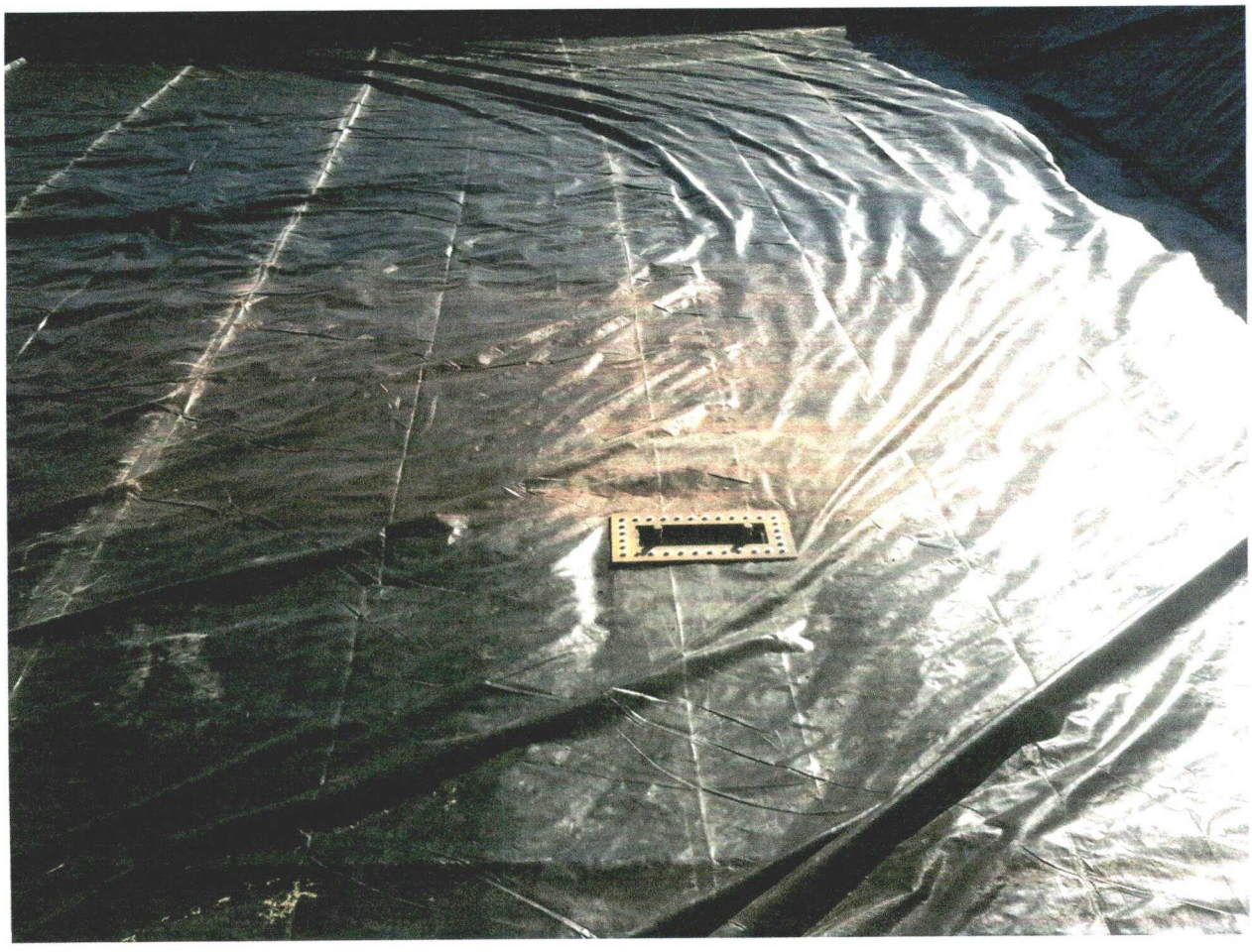


1 OVERALL STEEL FRAMING OF BASIN

NOT TO SCALE







United States Department of the Interior
Bureau of Land Management

Environmental Assessment DOI-BLM-NM-F010-2015-0066

Piñon Unit M16-2410 Nos. 01H, 02H, 03H, and 04H Oil Wells Project

February 2015

U.S. Department of the Interior
Bureau of Land Management
Farmington District
Farmington Field Office
6251 N. College Blvd., Ste. A
Farmington, NM 87402
Phone: (505) 564-7600
FAX: (505) 564-7608

New Mexico • Farmington Field Office

TABLE OF CONTENTS

1. PURPOSE AND NEED FOR ACTION

1.1. Background

Encana Oil & Gas (USA) Inc. (Encana) has submitted four Applications for Permit to Drill (APDs) to the Bureau of Land Management – Farmington Field Office (BLM-FFO) for the Piñon Unit M16-2410 Nos. 01H, 02H, 03H, and 04H (Piñon Unit M16) oil wells project. The proposed project would consist of a total of four wells and associated facilities. The proposed action is the approval of the APDs by the BLM-FFO.

The proposed project would involve the horizontal drilling, possible production, and final abandonment of four wells that would be drilled to State of New Mexico, Navajo Allotted, and BLM-FFO-managed minerals from the Piñon Unit HZ (oil) formation (Lease No. NMNM 133481X). Each of the four wells would be permitted under an approved APD issued by the BLM-FFO. The proposed project would involve the construction, usage, and reclamation of a 6.8 acre well pad (including construction zone), a 140-foot-long access road, pullout areas, and a 10,788-foot well-connect pipeline (all of which would parallel the proposed access road and existing roads with the exception of 415-foot portion that would travel cross country). These project features would all be permitted under the aforementioned, approved APDs.

Oil and natural gas, vital components of the nation's energy supply, account for approximately 36 and 25 percent of total energy consumed in the U.S., respectively. These energy sources are used in residential and commercial buildings, in transportation, and by industry (U.S. Energy Information Administration 2012). Common uses for natural gas include space heating, water heating, cooling, cooking, waste treatment and incineration, metals preheating, drying and humidification, glass melting, food processing, fueling industrial boilers, vehicle fueling, and electricity generation. Gases such as butane, ethane, and propane can be extracted from natural gas to be used for products such as fertilizers and pharmaceuticals. Natural gas can also be used to create methanol, which is utilized in the production of formaldehyde, acetic acid, fuel cell sources, and additives for cleaner burning gasoline (Natural Gas Supply Association 2010). Most oil goes into fuels, including gasoline, jet fuel, and home-heating oil. Additionally, non-fuel compounds extracted from oil are used to develop lubricants; asphalt for roads; tar for roofing; waxes for food wrapping; solvents for paints; cosmetics and dry-cleaning products; plastics; and foams (U.S. Energy Information Administration 2012).

Approximately 84 percent of natural gas and 55 percent of oil consumed in the U.S. is produced in the U.S. Additionally, U.S.-produced oil and natural gas is also exported to other countries (U.S. Department of Energy 2011). Within the U.S., oil and natural gas reserves are concentrated within distinct fields. The BLM-FFO management area is within the San Juan Basin, one of the most prolific gas-producing basins in the country. Currently, the San Juan Basin produces small amounts of oil (BLM 2003a, 3-9).

Taxes and royalties on oil, natural gas, and carbon dioxide production contribute approximately 25 percent of New Mexico's general fund, and the oil and gas industry is one of the largest private sector employers in the State of New Mexico (State; New Mexico Bureau of Geology and Mineral Resources 2012). Additionally, the Federal government receives royalties, or a share of the production income, for extracted Federal minerals. In 2011, Federal natural gas royalties totaled over 2 billion dollars (Office of Natural Resources Revenue 2012).

The proposed project area is located within the San Juan Basin in San Juan County, New Mexico. The proposed project area is approximately 28 miles south of the town of Bloomfield, New Mexico, 9 miles northwest of the community of Nageezi, and 5 miles southwest of the Blanco Trading Post (see Figure A.1, Appendix A).

1.2. Purpose and Need for Action

The purpose of the proposed action is to allow Encana reasonable access to BLM-managed lands to develop their Federal and non-Federal mineral leases.

1.5.1. Clean Water Act

The proposed action is in conformance with the Clean Water Act, as amended (CWA; 33 USC 1251 et seq.).

Section 401

Under Section 401 of the CWA, an applicant for a Federal license or permit to conduct an activity that may result in a discharge into a water of the U.S. must provide the Federal agency with a Section 401 certification declaring that the discharge would comply with the CWA. The certification would be granted by the New Mexico Environment Department (NMED).

Section 402

Under Section 402 of the CWA, the U.S. Environmental Protection Agency (EPA) regulates storm water discharges from industrial and construction activities under the National Pollution Discharge Elimination System program. Permits are required if discharge results in a reportable quantity for which notification is required (pursuant to 40 CFR 117.21, 40 CFR 302.6, or 40 CFR 110.6) or if the discharge contributes to a violation of a water quality standard.

Section 404

Under Section 404 of the CWA, the EPA regulates the discharge of dredged or fill material into waters of the U.S., including wetlands. The Section 404 program is administered by the EPA and U.S. Army Corps of Engineers (USACE). Under the CWA, the USACE has jurisdiction over waters of the U.S. Waters of the U.S. are considered jurisdictional because they have a "significant nexus" to traditional navigable waters. The BLM-FFO and USACE - Durango Regulatory Office have determined that jurisdictional waters (i.e., waters of the U.S.) within the BLM-FFO planning area may include U.S. Geological Survey (USGS) watercourses (i.e., "blue lines" on USGS 1:24,000 topographic maps) and potentially tributaries to these USGS watercourses.

The proposed well-connect pipeline corridor would cross one USGS watercourse in two separate locations. This watercourse also travels through the proposed well pad from the southeast corner (corner 3) to the northwest corner (corner 6). It was determined by the BLM-FFO that this watercourse is not considered jurisdictional by the USACE.

1.5.2. National Historic Preservation Act

Section 106 of the National Historic Preservation Act of 1966 (NHPA; 16 USC 470) requires Federal agencies to take into account the effects of their actions on historic properties, and allow the Advisory Council on Historic Preservation a reasonable opportunity to comment. Compliance with the requirements of the NHPA is met by following the Protocol Agreement between the New Mexico BLM and New Mexico State Historic Preservation Officer, which is authorized by the Programmatic Agreement among the BLM, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers (1997).

1.5.3. Clean Air Act

The Clean Air Act of 1972, as amended (CAA; 42 USC 7401 et seq.), establishes national ambient air quality standards (NAAQS) to control air pollution. In New Mexico, the NMED has adopted most of the CAA into the New Mexico Administrative Code (NMAC). The NMED issues construction and operating permits for air quality and enforces air quality regulations and permit conditions.

1.5.4. New Mexico State Regulations

The New Mexico Oil Conservation Division (NMOCD), which is in the New Mexico Energy, Minerals, and Natural Resources Department (EMNRD), regulates oil and gas operations in New Mexico. The NMOCD has the responsibility of gathering production data, permitting new wells, establishing pool rules and