

Initial Application Part I

Received: 12/09/2019

This application is placed in file for record. It MAY or MAY NOT have been reviewed to be determined Administratively Complete

LONQUIST & CO. LLC

PETROLEUM
ENGINEERS

ENERGY
ADVISORS

AUSTIN · HOUSTON · WICHITA · DENVER · CALGARY

December 9, 2019

New Mexico Energy, Minerals, and Natural Resources Department
Oil Conservation Division District IV
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
(505) 476-3440

RE: RAGIN RUTLEY SWD NO. 1 AUTHORIZATION TO INJECT

To Whom It May Concern:

Attached for your review is Form C-108, Application for Authorization to Inject, and its supplemental documents prepared for Solaris Water Midstream's (Solaris) Ragin Rutley SWD No. 1. In addition, Forms C-101 and C-102 have also been included with this package. Notices have been sent to offset, operators, leaseholders and the surface owner. Proof of notice will be sent to the OCD upon receipt.

Any questions should be directed towards Solaris', LLC's agent Lonquist & Co., LLC.

Regards,



Ramona K. Hovey
Sr. Petroleum Engineer
Lonquist & Co., LLC

(512) 600-1777
ramona@lonquist.com

XWDO6-191209-C-1080

Revised March 23, 2017

RECEIVED: 12/9/19	REVIEWER: BLL	TYPE: SWD	APP NO: pBL1934360855
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ABOVE THIS TABLE FOR OCD DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
 - Geological & Engineering Bureau -
 1220 South St. Francis Drive, Santa Fe, NM 87505

**ADMINISTRATIVE APPLICATION CHECKLIST**

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND
 REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Applicant: Solaris Water Midstream, LLC _____ **OGRID Number:** 371643 _____
Well Name: Ragin Rutley SWD No. 1 _____ **API:** _____
Pool: SWD: Devonian-Silurian _____ **Pool Code:** 97869 _____

**SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION
 INDICATED BELOW**

1) TYPE OF APPLICATION: Check those which apply for [A]

A. Location – Spacing Unit – Simultaneous Dedication

☐ NSL☐ NSP (PROJECT AREA)☐ NSP (PRORATION UNIT)☐ SD

SWD-2347

B. Check one only for [I] or [II]

[I] Commingling – Storage – Measurement

☐ DHC☐ CTB☐ PLC☐ PC☐ OLS☐ OLM

[II] Injection – Disposal – Pressure Increase – Enhanced Oil Recovery

☐ WFX☐ PMX☒ SWD☐ IPI☐ EOR☐ PPR**2) NOTIFICATION REQUIRED TO:** Check those which apply.A. ☒ Offset operators or lease holdersB. ☐ Royalty, overriding royalty owners, revenue ownersC. ☒ Application requires published noticeD. ☐ Notification and/or concurrent approval by SLOE. ☐ Notification and/or concurrent approval by BLMF. ☒ Surface ownerG. ☒ For all of the above, proof of notification or publication is attached, and/or,H. ☐ No notice required**FOR OCD ONLY**☐ Notice Complete☐ Application
Content
Complete

- 3) CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Ramona K. Hovey – Agent of Solaris Water Midstream

Print or Type Name

Ramona K Hovey

 Signature

December 9, 2019

Date

(512) 600-1777

Phone Number

ramona@lonquist.com


e-mail Address

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL
RESOURCES DEPARTMENT

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: _____ Secondary Recovery _____ Pressure Maintenance _____ ☒ Disposal _____ Storage
Application qualifies for administrative approval? _____ ☒ Yes _____ No
- II. OPERATOR: Solaris Water Midstream, LLC
ADDRESS: 701 Tradewinds Blvd., Suite C, Midland, TX 79706
CONTACT PARTY: Whitney McKee PHONE: 432-203-9020
- III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.
Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? _____ Yes _____ ☒ No
If yes, give the Division order number authorizing the project: _____
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- *VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- *X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
- *XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- NAME: Ramona Hovey TITLE: Consulting Engineer – Agent for Solaris Water Midstream
SIGNATURE:  DATE: 12/9/2019
E-MAIL ADDRESS: ramona@lonquist.com
- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted.
Please show the date and circumstances of the earlier submittal: _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

Side 2

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates and pressures; and,
- (4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

Side 1

INJECTION WELL DATA SHEET

OPERATOR: Solaris Water Midstream, LLC

WELL NAME & NUMBER: Ragin’ Rutley SWD No. 1

WELL LOCATION:	<u>857’ FSL 228’ FEL</u>	<u>LOT 16</u>	<u>14</u>	<u>20S</u>	<u>32E</u>
	FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: <u>26”</u>	Casing Size: <u>20”</u>
Cemented with: <u>953 sx.</u>	<i>or</i> _____ ft ³
Top of Cement: <u>surface</u>	Method Determined: <u>circulation</u>

Intermediate 1 Casing

Hole Size: <u>18.125”</u>	Casing Size: <u>16”</u>
Cemented with: <u>1,357 sx.</u>	<i>or</i> _____ ft ³
Top of Cement: <u>surface</u>	Method Determined: <u>circulation</u>

Intermediate 2 Casing

Hole Size: <u>14.75”</u>	Casing Size: <u>13.375”</u>
Cemented with: <u>1,048 sx.</u>	<i>or</i> _____ ft ³
Top of Cement: <u>surface</u>	Method Determined: <u>circulation</u>

Production Casing

Hole Size: 12.250"

Casing Size: 9.625"

Cemented with: 2,668 sx.

or _____ ft³

Top of Cement: surface

Method Determined: circulation

Liner

Hole Size: 8.500"

Casing Size: 7.625"

Cemented with: 422 sx.

or _____ ft³

Top of Cement: 10,625'

Method Determined: logging

Total Depth: 16,263'

Injection Interval

14,463 feet to 16,263 feet

(Open Hole)

Side 2

INJECTION WELL DATA SHEETTubing Size: 5.5", 20 lb/ft, HCL-80, BTC from 0' – 10,425' and 5", 18 lb/ft, HCL-80, LTC from 10,425' – 14,413'Lining Material: DuolineType of Packer: 7-5/8" X 5" Permanent Packer with High Temp Elastomer and Full Inconel 925 trimPacker Setting Depth: 14,413'

Other Type of Tubing/Casing Seal (if applicable): _____

Additional Data

1. Is this a new well drilled for injection? X Yes No

If no, for what purpose was the well originally drilled?

2. Name of the Injection Formation: Devonian, Fusselman

3. Name of Field or Pool (if applicable): SWD; Devonian-Silurian 97869

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used.

No, new drill.

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:

Delaware: 5,049'Strawn: 11,918'Atoka: 12,290'Morrow: 12,917'



Solaris Water Midstream, LLC

Ragin Rutley SWD No. 1

FORM C-108 Supplemental Information

III. Well Data

A. Wellbore Information

1.

Well information	
Lease Name	Ragin Rutley SWD
Well No.	1
Location	S-14 T-20S R-32E
Footage Location	857' FSL & 228' FEL

2.

a. Wellbore Description

		Casing Information			
Type	Surface	Intermediate 1	Intermediate 2	Production	Liner
OD	20"	16"	13.375"	9.625"	7.625"
WT	0.500"	0.656"	0.480"	0.545"	0.500"
ID	19.000"	14.688"	12.347"	8.535"	6.625"
Drift ID	18.936"	15.062"	12.559"	8.379"	6.500"
COD	21.000"	17.000"	13.375"	10.625"	7.625"
Weight	106.5 lb/ft	109 lb/ft	72 lb/ft	53.5 lb/ft	39 lb/ft
Grade	J-55 BTC	J-55 BTC	HCL-80 FJ	HCP-110 BTC	Q-125 EZ-GO FJ3
Hole Size	26"	18.125"	14.75"	12.25"	8.5"
Depth Set	1,385'	2,844'	4,932'	10,825'	10,625' – 14,463'

b. Cementing Program

Casing String	Surface	Intermediate 1	Intermediate 2	Production	Liner
Lead Cement	HALCEM™	HALCEM™	HALCEM™	HALCEM™	NeoCem™
Lead Cement Volume (sacks)	642	700	817	Stage 1: 1,604 Stage 2: 262	421
Lead Cement Yield (ft3/sack)	1.664	1.664	1.664	Stage 1: 2.731 Stage 2: 1.336	1.223
Tail Cement	HALCEM™	HALCEM™	HALCEM™	HALCEM™	-
Tail Cement Volume (sacks)	311	657	231	Stage 1: 623 Stage 2: 178	-
Tail Cement Yield (ft3/sack)	1.332	1.332	1.332	Stage 1: 1.056 Stage 2: 1.336	-
Cement Excess	100%	100%	100%	100%	50%
Total Sacks	953	1,357	1,048	2,668	421
TOC	Surface	Surface	Surface	Surface	10,625'
Method	Circulate to Surface	Circulate to Surface	Circulate to Surface	Circulate to Surface	Logged

3. Tubing Description

Tubing Information	
OD	5.5"
	5.0"
WT	0.361"
	0.362"
ID	4.778"
	4.276"
Drift ID	4.653"
	4.151"
COD	6.050"
	5.563"
Weight	20 lb/ft
	18 lb/ft
Grade	HCL-80 BTC
	HCL-80 LTC
Depth Set	0-'10,425'
	10,425-11,413'

Tubing will be lined with Duoline.

4. Packer Description

7-5/8" x 5" TCPC Permanent Packer with High Temp Elastomer and Full Inconel 925 trim

B. Completion Information

1. Injection Formation: Devonian
2. Gross Injection Interval: 14,463' – 16,263'

Completion Type: Open Hole

3. Drilled for injection.
4. See the attached wellbore schematic.
5. Oil and Gas Bearing Zones within area of well:

Formation	Depth
Delaware	5,049'
Wolfcamp	10,725'
Strawn	11,918'
Atoka	12,290'
Morrow	12,917'

VI. Area of Review

No wells within the area of review penetrate the proposed injection zone.

VII. Proposed Operation Data

1. Proposed Daily Rate of Fluids to be Injected:

Average Volume: 30,000 BPD

Maximum Volume: 40,000 BPD

2. Closed System

3. Anticipated Injection Pressure:

Average Injection Pressure: 2,169 PSI (surface pressure)

Maximum Injection Pressure: 2,892 PSI (surface pressure)

4. The injection fluid is to be locally produced water. Attached are produced water sample analyses taken from the closest wells that feature samples from the Artesia, Bone Spring, Delaware, Morrow, Pennsylvanian, Strawn, and Wolfcamp formations.

5. The disposal interval is non-productive. No water samples are available from the surrounding area.

VIII. Geological Data

Devonian Formation Lithology:

The Devonian formation is a dolomitic ramp carbonate that occurs below the Woodford shale and above the Fusselman formation. Strata found in the Devonian formation include two major groups, the Wristen Buildups and the Thirtyone Deepwater Chert, with the Wristen being more abundant. The Wristen Groups is composed of mixed limestone and dolomites with mudstone to grainstone and boundstone textures. Porosity in the Wristen group is a result of both primary and secondary development. Present are moldic, vugular, karstic (including collapse breccia) features that allow for higher porosities and permeabilities. The Thirtyone Formation contains two end-member reservoir facies, skeletal packstones/grainstones and spiculitic chert, with most of the porosity and permeability found in the coarsely crystalline cherty dolomite. These particular characteristics allow for this formation to be a tremendous Salt Water Disposal horizon.

Fusselman Formation Lithology:

The Silurian/Ordovician Fusselman Formation is stratigraphically below the Wristen Group and is above and separated from the Montoya Formation by the Sylvan Shale. The Sylvan Shale is the lower confining layer for the proposed Texas Ranger SWD No. 1 well. Fusselman facies include a laminated skeletal wackestone in the upper part and a buildup complex in the lower part composed of ooid and bryozoan grainstones. These grainstones can also be potentially prolific zones for disposal.

A. Injection Zone: Devonian-Silurian Formation

Formation	Depth
Rustler	1,079'
Salado	1,375'
Capitan Reef Top	2,834'
Capitan Reef Base	4,922'
Delaware Mountain Group	5,049'
Wolfcamp	10,725'
Strawn	11,918'
Atoka	12,290'
Morrow	12,917'
Barnett	13,433'
Mississippian Lime	13,758'
Woodford	14,318'
Devonian	14,463'
Fusselman	15,315'

B. Underground Sources of Drinking Water

Seven (7) water wells exist within one-mile of the proposed well. Across the area, fresh water wells are usually drilled at an average depth of 388'. Average water depth in this region is approximately 239'. The Rustler exists in this area at a depth of 1,079' and will be protected by setting 20" surface casing 10' past the Rustler formation into the Salado salt at approximately 1,385'

The proposed well is located within the Capitan Reef Complex; thus, the proposed wellbore design is a 4-string design that is intended to protect the Capitan Reef from any potential contamination while drilling. The first intermediate casing string will be set approximately 10' into the top of the Capitan Reef at 2,844'. The second intermediate casing will isolate the Capitan Reef by setting a second intermediate casing string approximately 10' past the base of the Capitan Reef. A depiction of the 4-string casing design is included in this application.

IX. Proposed Stimulation Program

50,000 gallon acid job

X. Logging and Test Data on the Well

There are no logs or test data on the well. During the process of drilling and completion resistivity, gamma ray, and density logs will be run.

XI. Chemical Analysis of Fresh Water Wells

Attached is a map of the seven (7) water wells that exist within one-mile of the well location. A 3rd party is currently attempting to identify active wells and obtain sample. If samples can be obtained, analysis results will be provided as soon as possible.

District I1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720**District II**811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720**District III**1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170**District IV**1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462**State of New Mexico**Form C-101
Revised July 18, 2013**Energy Minerals and Natural Resources****Oil Conservation Division**☐ AMENDED REPORT**1220 South St. Francis Dr.****Santa Fe, NM 87505****APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE**

¹ Operator Name and Address SOLARIS WATER MIDSTREAM, LLC 701 TRADEWINDS BLVD., SUITE C MIDLAND, TX 79706		² OGRID Number 371643
		³ API Number TBD
⁴ Property Code	⁵ Property Name RAGIN' RUTLEY SWD	⁶ Well No. 1

⁷ Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
LOT 16	14	20S	32E		857	S	228	E	LEA

⁸ Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
-	-	-	-	-	-	-	-	-	-

⁹ Pool Information

Pool Name SWD; Devonian-Silurian	Pool Code 97869
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Additional Well Information

¹¹ Work Type N	¹² Well Type SWD	¹³ Cable/Rotary R	¹⁴ Lease Type Private	¹⁵ Ground Level Elevation 3,531'
¹⁶ Multiple N	¹⁷ Proposed Depth 16,263'	¹⁸ Formation Silurian-Devonian	¹⁹ Contractor TBD	²⁰ Spud Date ASAP
Depth to Ground water 239'	Distance from nearest fresh water well 3,282'		Distance to nearest surface water >1 mile	

☒ We will be using a closed-loop system in lieu of lined pits**²¹ Proposed Casing and Cement Program**

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surface	26"	20"	106.5 lb/ft	1,385'	953	Surface
Intermediate 1	18.125"	16"	109 lb/ft	2,844'	1,357	Surface
Intermediate 2	14.75"	13.375"	72 lb/ft	4,932'	1,048	Surface
Production	12.25"	9.625"	53.5 lb/ft	10,825'	2,668	Surface
Liner	8.5"	7.625"	39 lb/ft	10,625' - 14,463'	422	10,625'
Tubing		5.5" & 5"	20 lb/ft & 18 lb/ft	0'-10,425' & 10,425'-14,413'	N/A	

Casing/Cement Program: Additional Comments

See attached schematic.

²² Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Hydraulic/Blinds, Pipe	8,000 psi	10,000 psi	TBD - Schaffer/Cameron

²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief.I further certify that I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☒ if applicable.

Signature:

Printed name: Ramona Hovey

Title: Consulting Engineer

E-mail Address: ramona@lonquist.com

Date: December 9, 2019

Phone: 512-600-1777

OIL CONSERVATION DIVISION

Approved By:

Title:

Approved Date:

Expiration Date:

Conditions of Approval Attached

District I1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720District II811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720District III1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170District IV1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102

Revised August 1, 2011

Submit one copy to appropriate
District Office☐ AMENDED REPORT**WELL LOCATION AND ACREAGE DEDICATION PLAT**

¹ API Number	² Pool Code 97869	³ Pool Name DEVONIAN-SILURIAN
⁴ Property Code	⁵ Property Name RAGIN' RUTLEY SWD	⁶ Well Number 1
⁷ OGRID No. 371643	⁸ Operator Name SOLARIS WATER MIDSTREAM, LLC	⁹ Elevation 3,531'

¹⁰ Surface Location

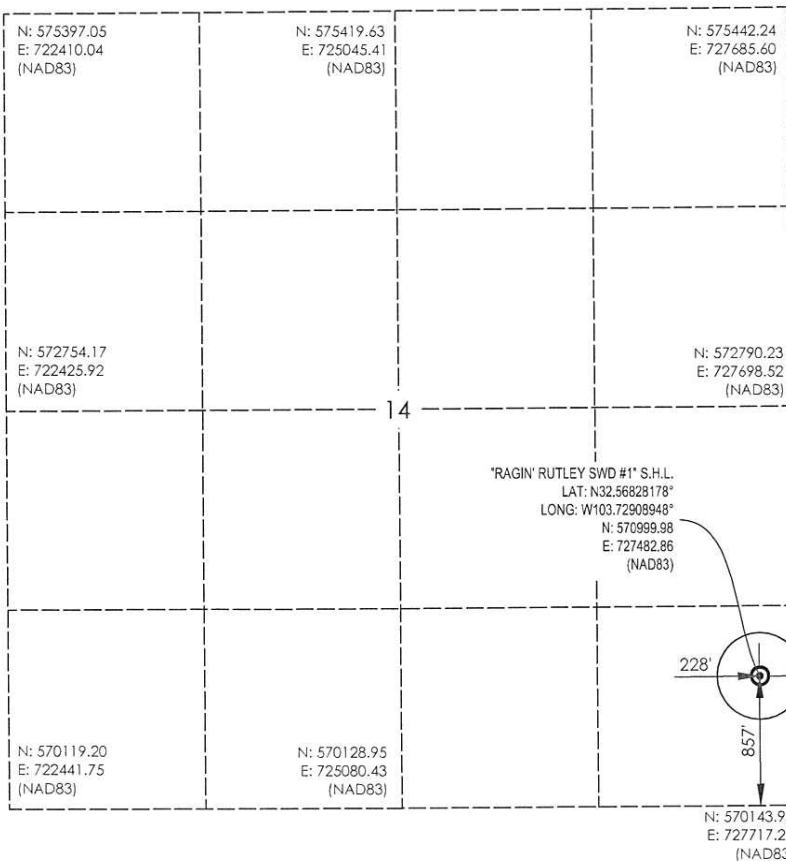
U.I. or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
16	14	20 S	32 E		857'	SOUTH	228'	EAST	LEA

¹¹ Bottom Hole Location If Different From Surface

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

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.

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

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.

Ramona K. Hovey 12/9/19
Signature Date

Ramona K. Hovey
Printed Name

ramona@longquist.com
E-mail Address

¹⁸ SURVEYOR CERTIFICATION

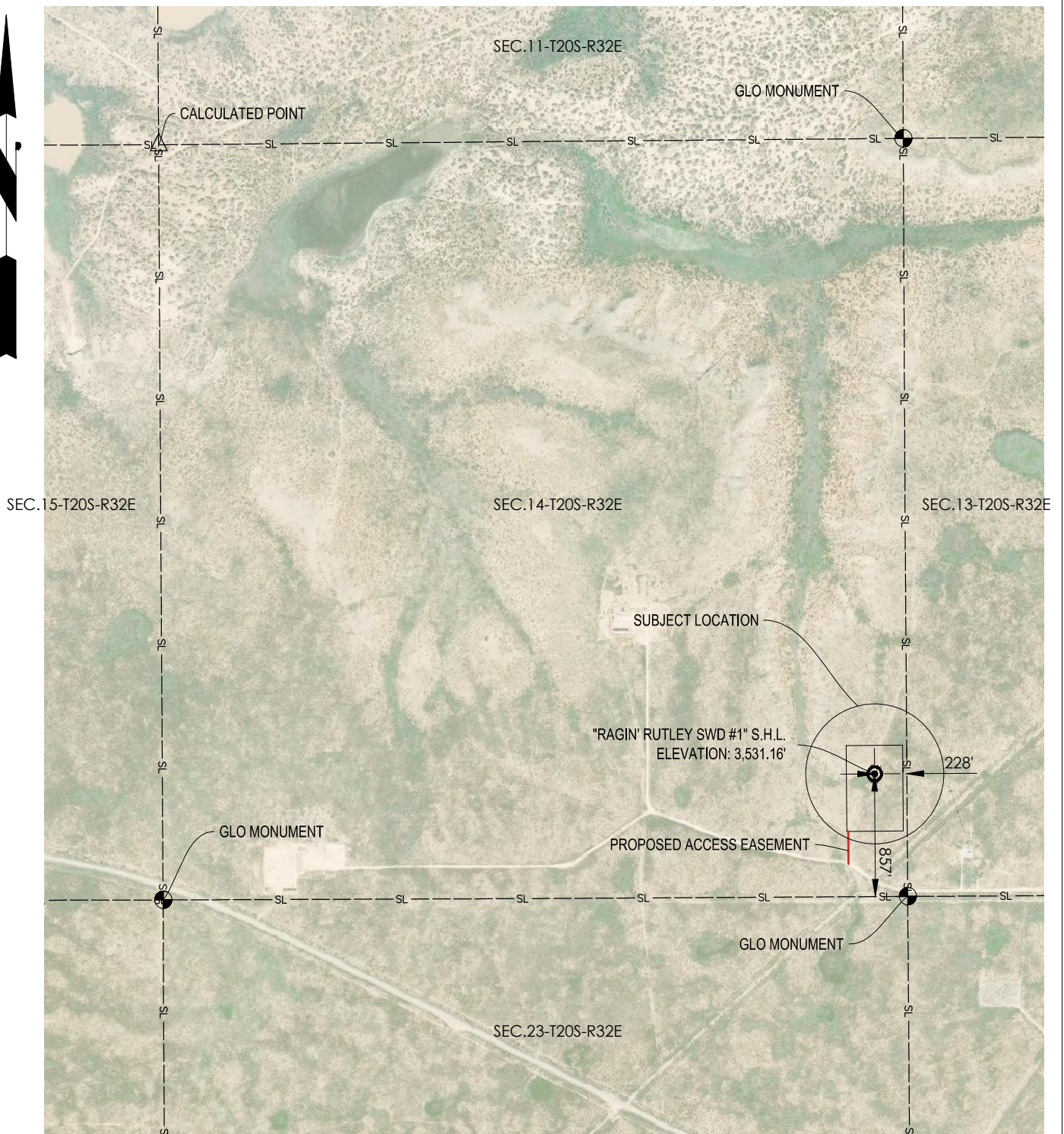
I hereby certify that the well location shown on this plat was plotted from ~~actual~~ actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge.

Shannon D. Longquist
Date of Survey 23783
Signature and Seal of Professional Surveyor

Shannon D. Longquist
10/30/2019
Certificate Number



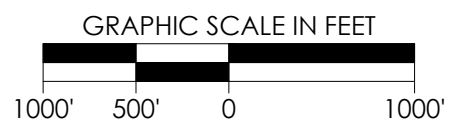
GRID NORTH (NAD 83)
NEW MEXICO - EAST ZONE




REFERENCE	ELEVATION	NAD83 (1986)		NAD27	
	NAVD 88	STATE PLANE NEW MEXICO EAST	GEOGRAPHIC	STATE PLANE NEW MEXICO EAST	GEOGRAPHIC
S. H. L.	3,531.16'	N: 570999.98 E: 727482.86	LAT: 32.56828178° LONG: -103.72908948°	N: 570937.81 E: 686302.41	LAT: 32.56816009° LONG: -103.72859362°

S.H.L.	857' FSL, 228' FEL (SEC.14)
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FROM HWY JCT OR TOWN: ± 0.9 MILES NORTHEAST OF THE INTERSECTION OF HWY 243 & HWY 62
FROM THE INTERSECTION OF HWY 243 & HWY 62, HEAD NORTH ON HWY 243 FOR ± 0.7 MILES, TURN
RIGHT ONTO A LEASE ROAD AND HEAD EAST FOR ± 0.5 MILES, TURN LEFT ONTO HYDRA LANE AND
HEAD NORTH FOR ± 280 FEET, TURN RIGHT ONTO THE PROPOSED LEASE ROAD, HEAD NORTH FOR
 ± 230 FEET TO LOCATION.



REVISION		"RAGIN' RUTLEY SWD #1"		
		PROPOSED PAD AND ACCESS EASEMENT SURVEY BUREAU OF LAND MANAGEMENT SEC.14-T20S-R32E LEA COUNTY, NEW MEXICO		
		SCALE: 1" = 1000'	CHECKED BY: JWB	APPROVED BY: J.PARKER
		PLOT DATE: 10-30-2019	DRAWN BY: L.DOW	SHEET NO.: 1 OF 4



Crafton Tull
surveying

1000 LedgeLawn Dr
Conway, Arkansas 72034

501.328.3316 f 501.328.3325 f
www.craftontull.com

**PROPOSED PAD
(5.51 ACRES)**

---SL---

---R---

---OHE---

---F---

---EOR---

---CLPAE---

---EPEAE---

---EPD---

P.O.C.

P.O.B.

P.O.T.

LF

⊙

⊙

⊙

LEGEND

SECTION LINE

PROPERTY LINE

EXISTING PIPELINE ROUTE

OVERHEAD ELECTRIC

FENCE

EDGE OF EXISTING ROAD

CL OF PROPOSED ACCESS EASEMENT

EDGE OF PROPOSED ACCESS EASEMENT

EDGE OF PROPOSED PAD

POINT OF COMMENCEMENT

POINT OF BEGINNING

POINT OF TERMINATION

LINEAR FEET

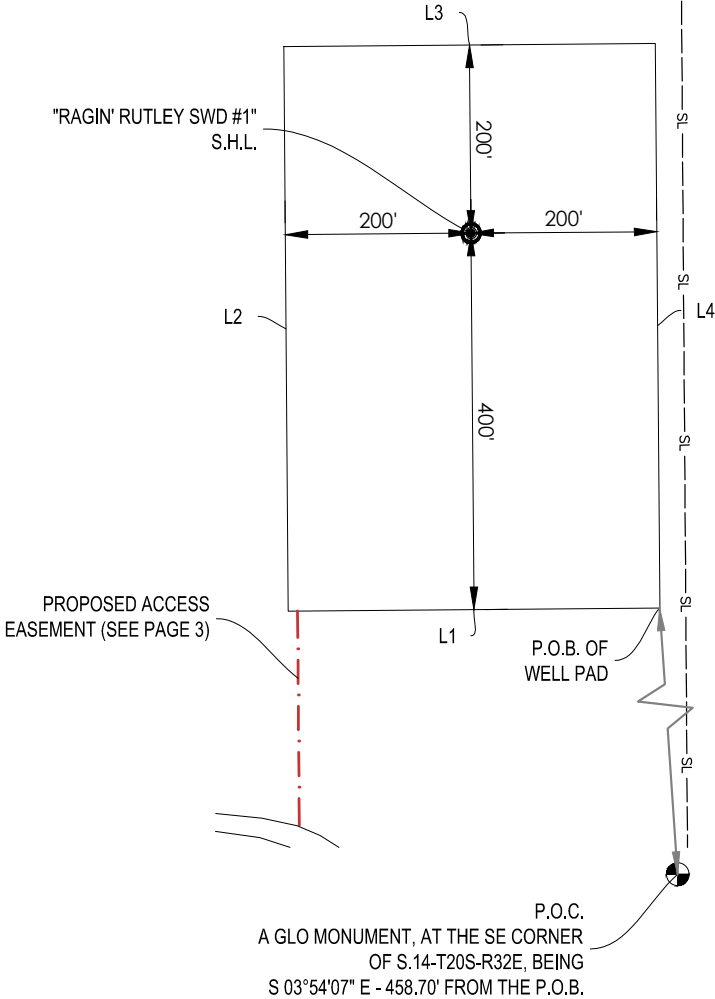
POWER POLE

PROPOSED WELL LOCATION

EXISTING WELL LOCATION

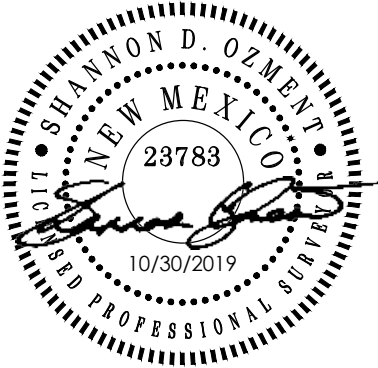
FOUND MONUMENT (AS NOTED)

BUREAU OF LAND MANAGEMENT
SEC.14-T20S-R32E
(240,000 SQ. FT. OR 5.51 ACRES)



LINE #	BEARING	DISTANCE
L1	S 89°32'35" W	400'
L2	N 00°27'25" W	600'
L3	N 89°32'35" E	400'
L4	S 00°27'25" E	600'

SECTION 14
SE1/4 SE1/4 ±5.51 ACRES




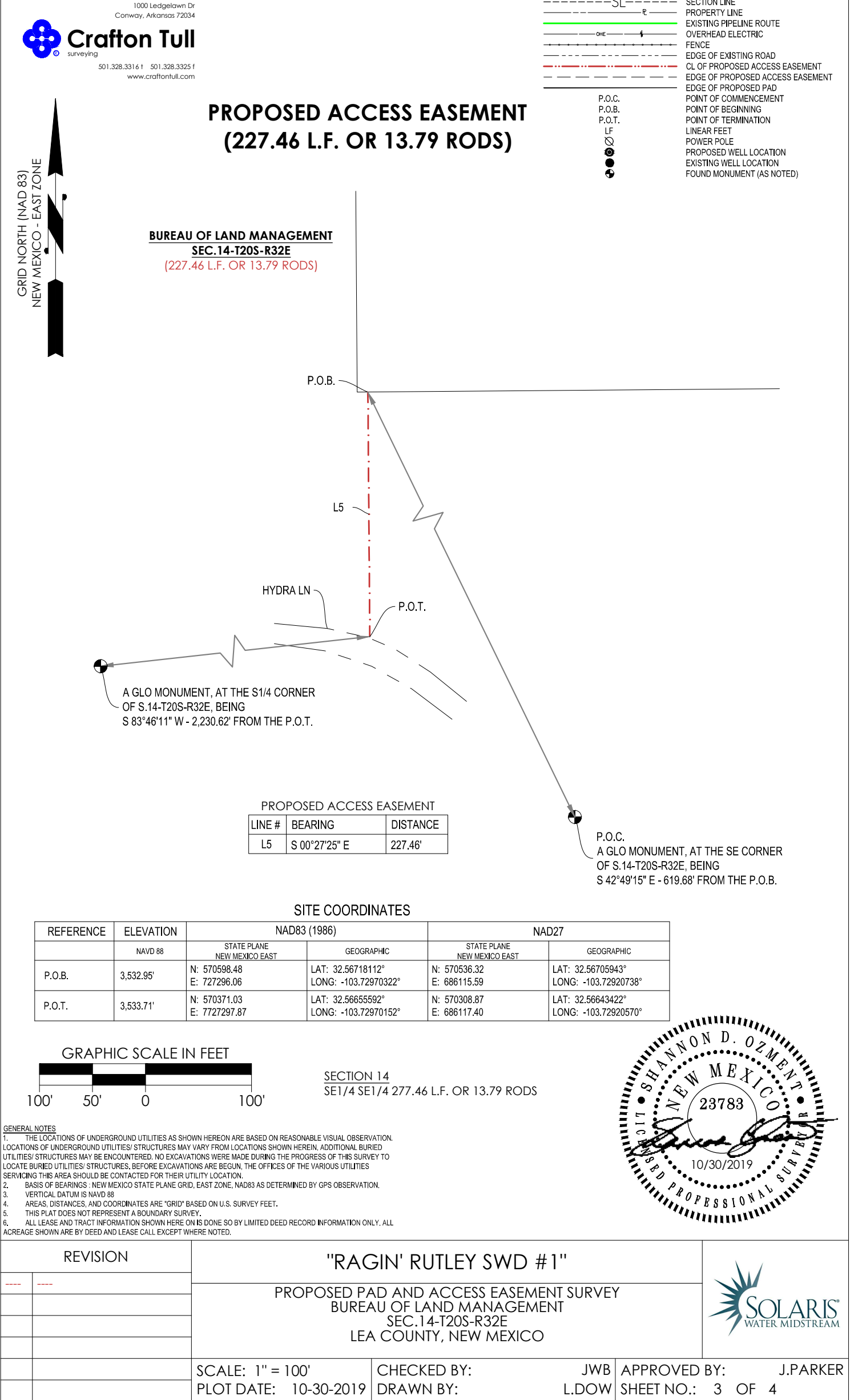
GENERAL NOTES

- THE LOCATIONS OF UNDERGROUND UTILITIES AS SHOWN HEREON ARE BASED ON REASONABLE VISUAL OBSERVATION. LOCATIONS OF UNDERGROUND UTILITIES/ STRUCTURES MAY VARY FROM LOCATIONS SHOWN HEREIN. ADDITIONAL BURIED UTILITIES/ STRUCTURES MAY BE ENCOUNTERED. NO EXCAVATIONS WERE MADE DURING THE PROGRESS OF THIS SURVEY TO LOCATE BURIED UTILITIES/ STRUCTURES. BEFORE EXCAVATIONS ARE BEGUN, THE OFFICES OF THE VARIOUS UTILITIES SERVICING THIS AREA SHOULD BE CONTACTED FOR THEIR UTILITY LOCATION.
- BASIS OF BEARINGS : NEW MEXICO STATE PLANE GRID, EAST ZONE, NAD83 AS DETERMINED BY GPS OBSERVATION.
- VERTICAL DATUM IS NAVD 88
- AREAS, DISTANCES, AND COORDINATES ARE "GRID" BASED ON U.S. SURVEY FEET.
- THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY.
- ALL LEASE AND TRACT INFORMATION SHOWN HERE ON IS DONE SO BY LIMITED DEED RECORD INFORMATION ONLY. ALL ACREAGE SHOWN ARE BY DEED AND LEASE CALL EXCEPT WHERE NOTED.

GRAPHIC SCALE IN FEET



REVISION		"RAGIN' RUTLEY SWD #1"		
		PROPOSED PAD AND ACCESS EASEMENT SURVEY BUREAU OF LAND MANAGEMENT SEC.14-T20S-R32E LEA COUNTY, NEW MEXICO		
		SCALE: 1" = 200'	CHECKED BY: JWB	APPROVED BY: J.PARKER
		PLOT DATE: 10-30-2019	DRAWN BY: L.DOW	SHEET NO.: 2 OF 4





LEGAL DESCRIPTIONS

"RAGIN' RUTLEY SWD #1 PROPOSED WELL PAD":

A METES AND BOUNDS DESCRIPTION OF A PROPOSED WELL PAD BEING OUT OF SECTION 14, TOWNSHIP 20 SOUTH, RANGE 32 EAST, LEA COUNTY, NEW MEXICO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A GLO MONUMENT, AT THE SOUTHEAST CORNER OF SAID SECTION 14; THENCE N 03°54'07" W A DISTANCE OF 458.70 FEET TO THE POINT OF BEGINNING;

THENCE S 89°32'35" W A DISTANCE OF 400 FEET TO A POINT;
THENCE N 00°27'25" W A DISTANCE OF 600 FEET TO A POINT;
THENCE N 89°32'35" E A DISTANCE OF 400 FEET TO A POINT;
THENCE S 00°27'25" E A DISTANCE OF 600 FEET TO THE POINT OF BEGINNING.

THE ABOVE DESCRIBED WELL PAD HAS A TOTAL OF 240,000 SQUARE FEET OR 5.51 ACRES, MORE OR LESS.

"RAGIN' RUTLEY SWD #1 PROPOSED ACCESS EASEMENT":

A CENTERLINE DESCRIPTION OF A PROPOSED ACCESS EASEMENT IN, OVER, ACROSS, AND THROUGH SECTION 14, TOWNSHIP 20 SOUTH, RANGE 32 EAST, LEA COUNTY, NEW MEXICO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A GLO MONUMENT, AT THE SOUTHEAST CORNER OF SAID SECTION 14; THENCE N 42°49'15" W A DISTANCE OF 619.68 FEET TO THE POINT OF BEGINNING OF THE FOLLOWING DESCRIBED CENTERLINE;


THENCE S 00°27'25" E A DISTANCE OF 227.46 FEET THE POINT OF TERMINATION, SAID POINT BEING N 83°46'11" E A DISTANCE OF 2,230.62 FEET FROM A GLO MONUMENT, AT THE SOUTH QUARTER CORNER OF SAID SECTION 14.

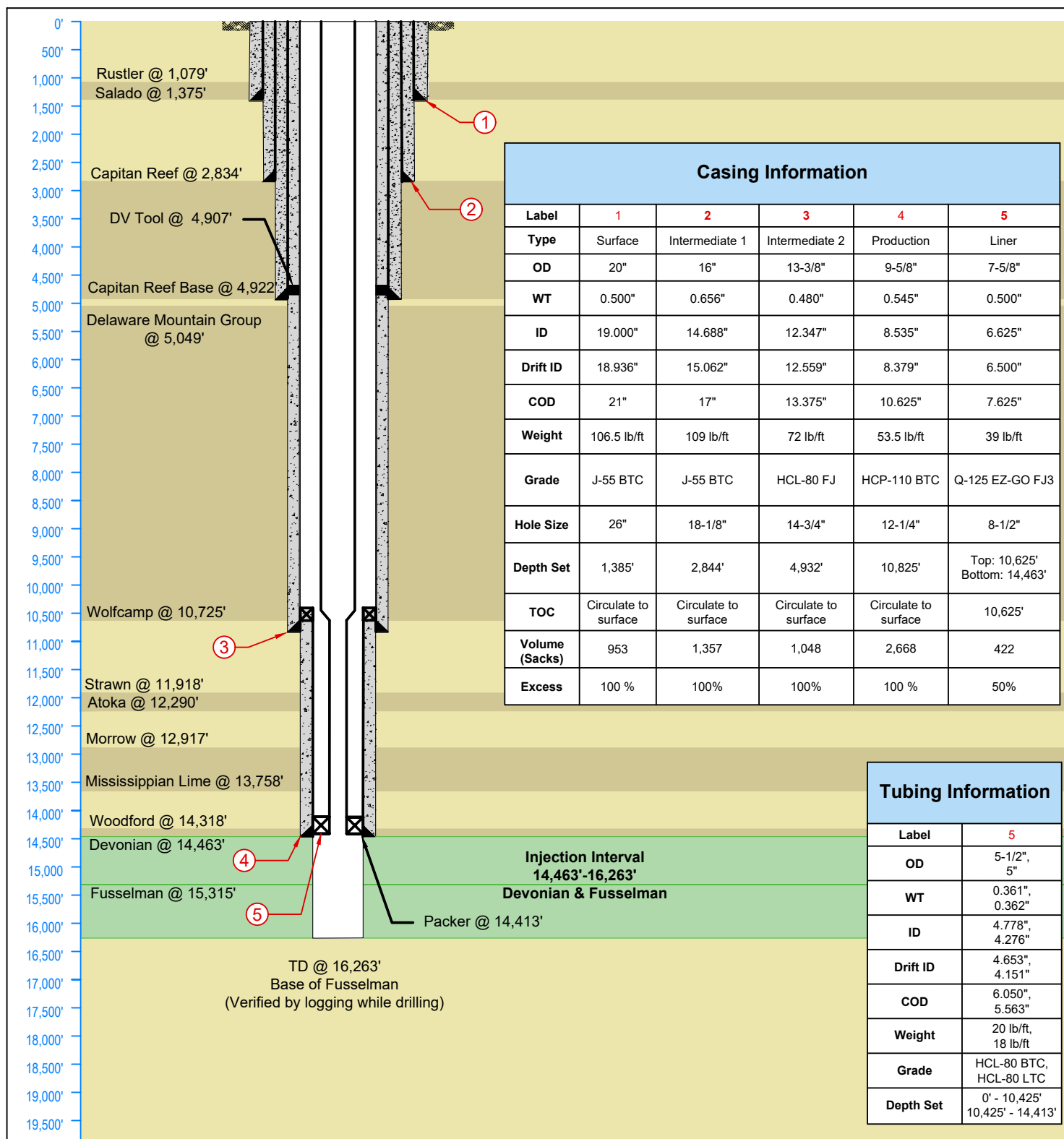
THE ABOVE DESCRIBED CENTERLINE HAS A TOTAL LENGTH OF 227.46 FEET OR 13.79 RODS, MORE OR LESS.

BASIS OF BEARINGS: NEW MEXICO STATE PLANE GRID, EAST ZONE, NAD83 AS DETERMINED BY GPS OBSERVATION.

ALL DISTANCES ARE GRID DISTANCES BASED ON U.S. SURVEY FEET
THIS LEGAL DESCRIPTION ACCOMPANIES A SKETCH PREPARED FOR THIS TRACT OF LAND.



REVISION		"RAGIN' RUTLEY SWD #1"				
----	----					
		PROPOSED PAD AND ACCESS EASEMENT SURVEY BUREAU OF LAND MANAGEMENT SEC.14-T20S-R32E LEA COUNTY, NEW MEXICO				
		PLOT DATE: 10-30-2019	CHECKED BY:	JWB	APPROVED BY:	J.PARKER
			DRAWN BY:	L.DOW	SHEET NO.:	4 OF 4



<div>LONQUIST & CO. LLC</div> <div><div>PETROLEUM ENGINEERS</div><div>ENERGY ADVISORS</div></div> <div><div>HOUSTON CALGARY</div><div>AUSTIN WICHITA DENVER</div></div>	Solaris Water Midstream, LLC		Ragin' Rutley SWD No. 1	
	Country: USA	State/Province: New Mexico	County/Parish: Lea	
	Location:	Site: 857' FSL, 228' FEL	Survey: S14-T20S-R32E	
	API No: NA	Field: Silurian-Devonian (Code: 97869)	Well Type/Status: SWD	
	Texas License F-9147	NMOCD District No: 2	Project No: 2241	Date: 12/05/2019
12912 Hill Country Blvd. Ste F-200 Austin, Texas 78738 Tel: 512.732.9812 Fax: 512.732.9816	Drawn: KAS	Reviewed: TFM	Approved: TFM	
	Rev No:	Notes:		



SOLARIS WATER MIDSTREAM, LLC

Ragin Rutley SWD No. 1

Section 14-T20S-R32E

857' FSL & 228' FEL

Lea County, New Mexico

GEOLOGICAL PROGNOSIS

12/2/2019

GL: 3,531'

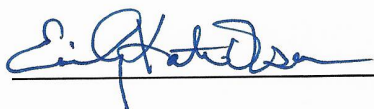
KB: 3,551' (Depth Reference)

Proposed Injection Interval: 14,463' – 16,263'

<u>Tops</u>	<u>Depths (est.)</u>	<u>Subsea (est.)</u>
Rustler	1,079'	+2,472'
Salado	1,375'	+2,176'
Capitan Reef Top	2,834'	+717'
Capitan Reef Base	4,922'	-1,371'
Bell Canyon	5,049'	-1,498'
Cherry Canyon	5,745'	-2,194'
Brushy Canyon	7,080'	-3,529'
Bone Spring	7,809'	-4,258'
Wolfcamp	10,725'	-7,154'
Strawn	11,918'	-8,367'
Atoka	12,290'	-8,739'
Morrow	12,917'	-9,366'
Mississippian Lime	13,758'	-10,207'
Woodford	14,318'	-10,767'
Devonian	14,463'	-10,912'
Fusselman	15,315'	-11,764'

LONQUIST & CO. LLC**PETROLEUM
ENGINEERS****ENERGY
ADVISORS****AUSTIN · HOUSTON · WICHITA · DENVER · CALGARY****INJECTION INTERVAL CONFINING LAYERS – RAGIN RUTLEY SWD NO. 1**

The Devonian-Silurian injection interval for the proposed Ragin Rutley SWD No. 1 is contained by upper and lower confining layers. The upper confining layer is the Woodford Shale, which is approximately 145 feet thick on top of the Devonian Formation. The lower confining layer is the Sylvan Shale equivalent, which serves as a boundary between the Montoya and Fusselman. This shale layer provides a basal region for the injection interval of the Devonian and Fusselman formations. The low permeability nature of both the Woodford and Sylvan Shale equivalent would provide the Devonian and Fusselman formations appropriate confinement for saltwater disposal during the life of the well.



Emily Olson

Geologist

Lonquist & Co., LLC

December 9, 2019

Project: Solaris Water Midstream
 Ragin Rutley SWD No. 1

LONQUIST & CO. LLC

PETROLEUM
ENGINEERS

ENERGY
ADVISORS

AUSTIN · HOUSTON · WICHITA · DENVER · CALGARY

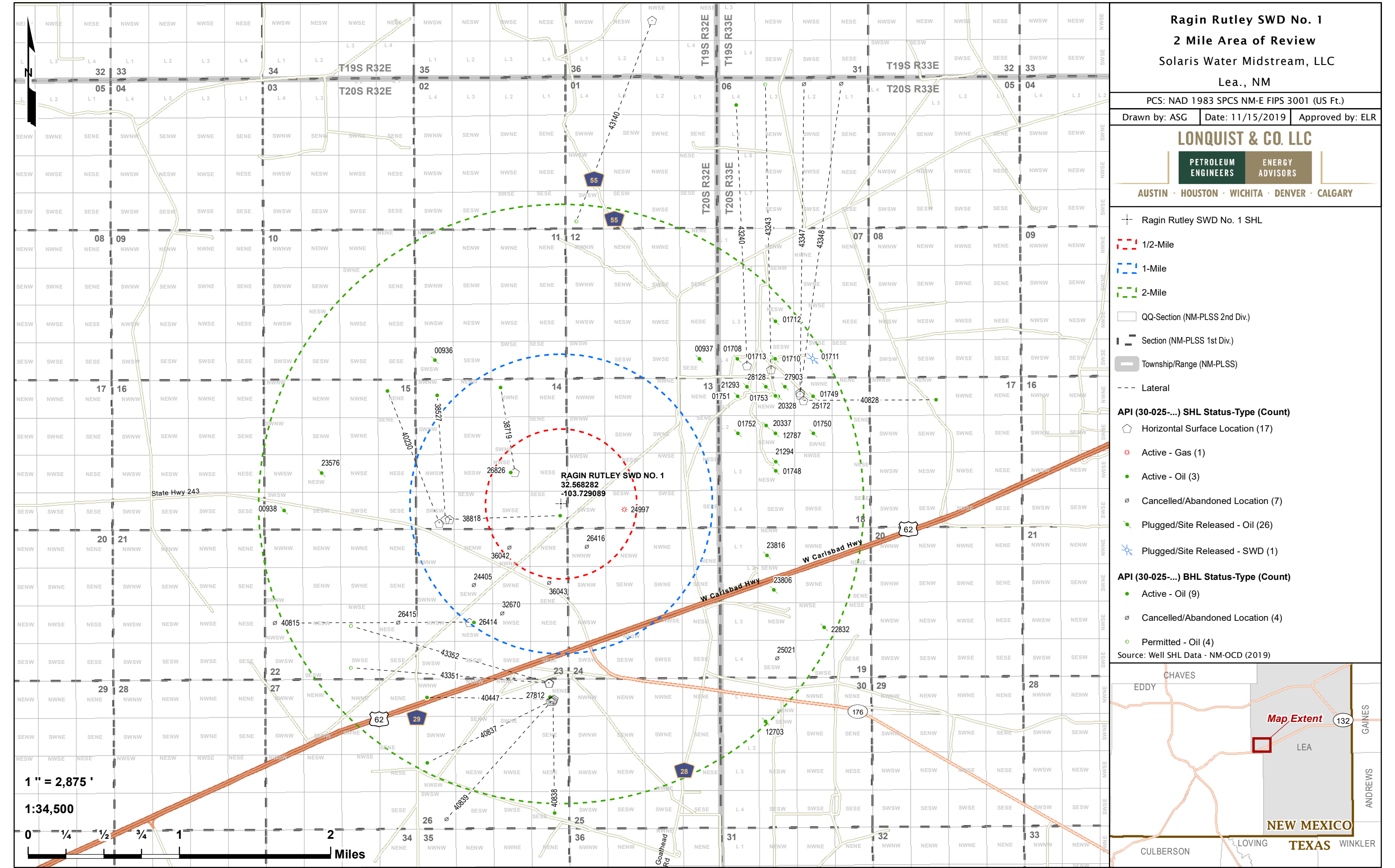
GEOLOGIC AFFIRMATION

I have examined available geologic and engineering data and have found no evidence of open faults or other hydrologic connection between the disposal interval and underground sources of drinking water.



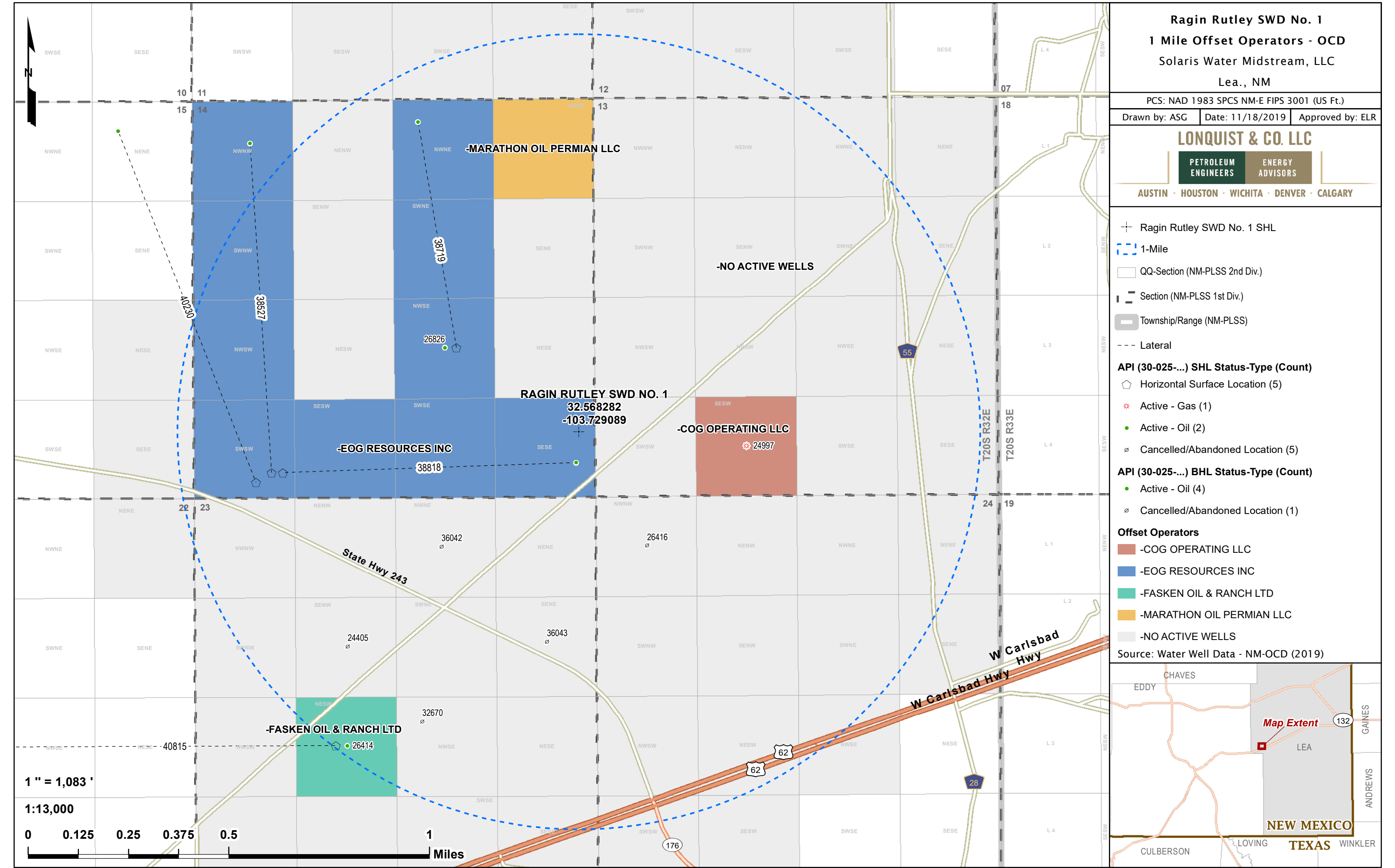
Emily Olson
Geologist

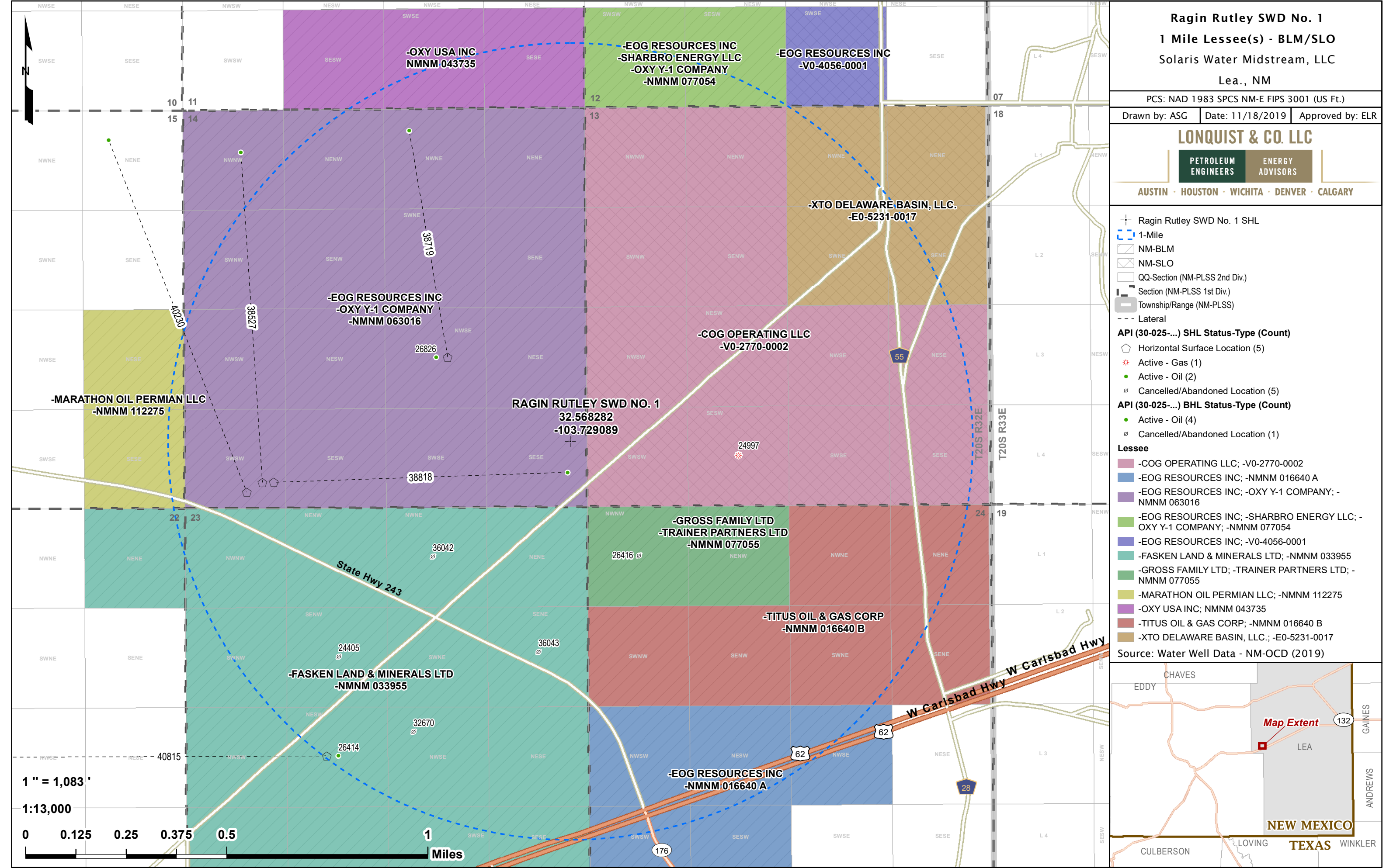
Project: Solaris Water Midstream, LLC
Ragin Rutley SWD No. 1

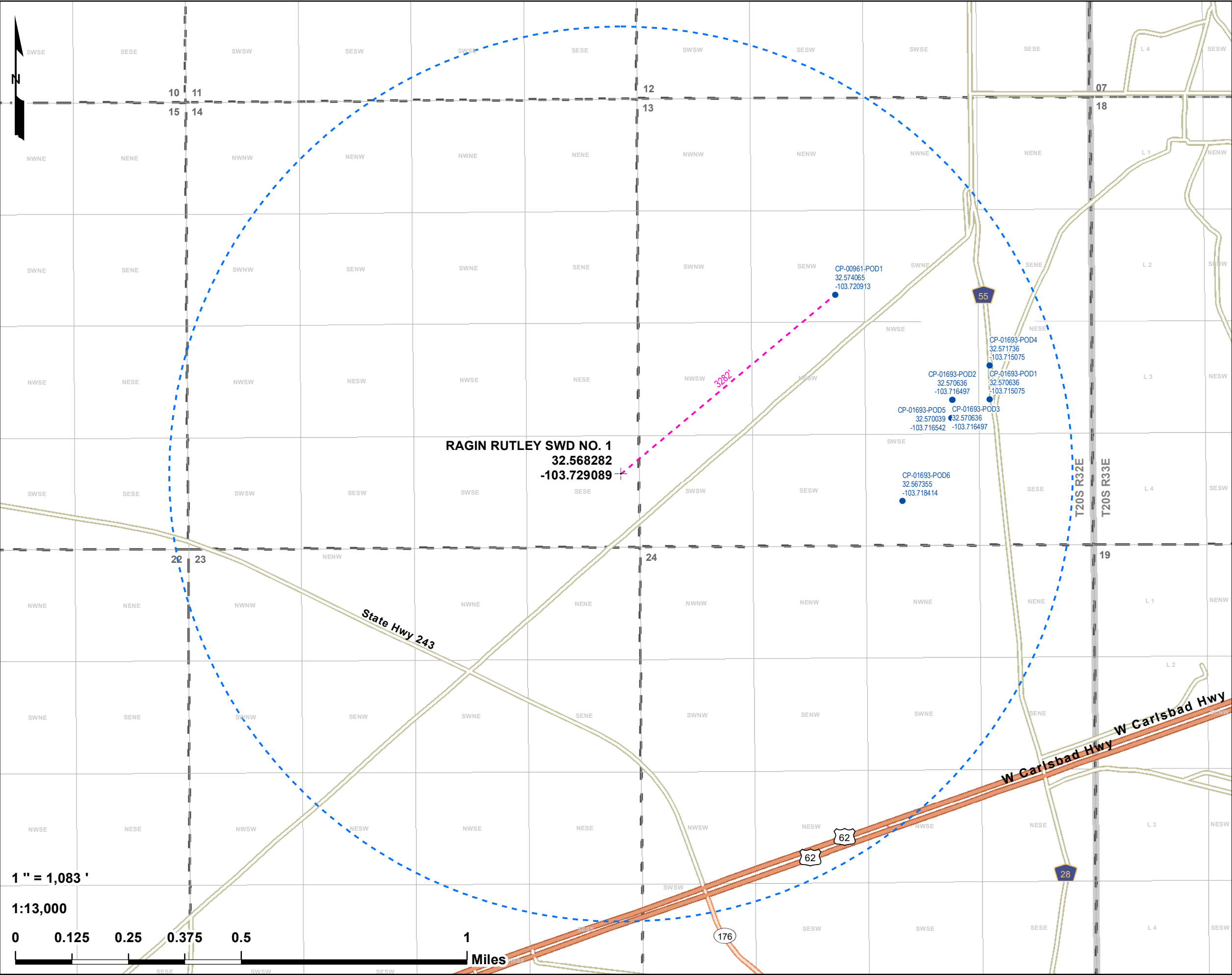


Ragin Rutley SWD No. 1
1 Mile Area of Review List

API (30-025-...)	WELL NAME	WELL TYPE	STATUS	OPERATOR	TVD (FT.)	LATITUDE (NAD83 DD)	LONGITUDE (NAD83 DD)	SPUD DATE	FIELD
24405	PRE-ONGARD WELL #001	O	C	PRE-ONGARD WELL OPERATOR	0	32.5604924446	-103.739016415	-	-
24997	HANSON STATE #001	G	A	COG OPERATING LLC	13363	32.5677414000	-103.721931500	8/10/1975	[53560] SALT LAKE, BONE SPRING; [96041] WILDCAT, GROUP 10; [96049] WC, ATOKA DO NOT USE; [96070] WC, MORROW (GAS); [96344] SALT LAKE, ATOKA (GAS); [96345] SALT LAKE, MORROW (GAS)
26414	BAETZ 23 FEDERAL #001	O	A	FASKEN OIL & RANCH LTD	13640	32.5568771000	-103.739051800	8/25/1975	[53560] SALT LAKE, BONE SPRING
26416	PRE-ONGARD WELL #001	O	C	PRE-ONGARD WELL OPERATOR	0	32.5641141820	-103.726202357	-	-
26826	BELCO AIA FEDERAL #001	O	A	EOG RESOURCES INC	13250	32.5713806000	-103.734787000	2/15/1991	[53565] SALT LAKE, DELAWARE
32670	BAETZ 23 #002	O	C	BARBARA FASKEN	0	32.5577398901	-103.735845650	-	-
36042	BAETZ 23 FEDERAL #003C	O	C	FASKEN OIL & RANCH LTD	0	32.5641164586	-103.734975129	-	-
36043	BAETZ 23 FEDERAL #009	O	C	FASKEN OIL & RANCH LTD	0	32.5606242796	-103.730501700	-	-
38527	BELCO AIA FEDERAL #002H	O	A	EOG RESOURCES INC	5057	32.56685260000	-103.74221800000	12/5/2006	[53565] SALT LAKE, DELAWARE
38719	BELCO AIA FEDERAL #003H	O	A	EOG RESOURCES INC	4855	32.5713806000	-103.734298700	2/19/2008	[53565] SALT LAKE, DELAWARE
38818	BELCO AIA FEDERAL #004H	O	A	EOG RESOURCES INC	5083	32.56685260000	-103.74173740000	4/3/2008	[53565] SALT LAKE, DELAWARE
40230	QUEENIE 15 FEDERAL #001H	O	A	MARATHON OIL PERMIAN LLC	5032	32.5664978000	-103.742889400	10/4/2011	[53565] SALT LAKE, DELAWARE
40815	BAETZ 23 FEDERAL #002C	O	C	FASKEN OIL & RANCH LTD	0	32.5568771000	-103.739540100	-	[53560] SALT LAKE, BONE SPRING







Ragin Rutley SWD No. 1

1 Mile Water Wells - OSE

Solaris Water Midstream, LLC

Lea., NM

PCS: NAD 1983 SPCS NM-E FIPS 3001 (US Ft.)

Drawn by: ASG | Date: 11/15/2019 | Approved by: ELR

LONQUIST & CO. LLC

PETROLEUM ENGINEERS | ENERGY ADVISORS

AUSTIN · HOUSTON · WICHITA · DENVER · CALGARY

✚ Ragin Rutley SWD No. 1 SHL

● Water Well (7) [NM-OSE 2019]

⬡ 1-Mile

□ QQ-Section (NM-PLSS 2nd Div.)

▬ Section (NM-PLSS 1st Div.)

▭ Township/Range (NM-PLSS)

Source: Water Well Data - NM-OCD (2019)

Lat/Long Coordinates: NAD 83

The inset map shows the state of New Mexico with county boundaries. A red square indicates the 'Map Extent' in Lea County. Surrounding counties include Chaves, Eddy, Gains, Andrews, Winkler, Loving, and Culberson. The state names 'NEW MEXICO' and 'TEXAS' are also shown.




New Mexico Office of the State Engineer

Water Right Summary



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WR File Number: CP 00961 Subbasin: CP Cross Reference: -
 Primary Purpose: MON MONITORING WELL
 Primary Status: PMT PERMIT
 Total Acres: 0 Subfile: - Header: -
 Total Diversion: 0 Cause/Case: -
 Owner: GLOBAL NUCLEAR ENERGY PTP

Documents on File

Trn #	Doc	File/Act	Status		Transaction Desc.	From/	Acres	Diversion	Consumptive
			1	2		To			
	601878	EXPL	2007-03-07	PMT	APR	CP 00961	T	0	0

Current Points of Diversion

POD Number	Well Tag	Source	Q (NAD83 UTM in meters)						Other Location Desc		
			64	Q16	Q4	Sec	Tws	Rng		X	Y
CP 00961	POD1		4	4	1	13	20S	32E	620062	3604791*	

An () after northing value indicates UTM location was derived from PLSS - see Help

Source

Acres	Diversion	CU	Use	Priority	Source	Description
0	0		MON		GW	

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

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WATER RIGHT SUMMARY



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 Primary Status: PMT PERMIT
 Total Acres: 0 Subfile: - Header: -
 Total Diversion: 0 Cause/Case: -
 Owner: GLOBAL NUCLEAR ENERGY PTP

Documents on File

Trn #	Doc	File/Act	Status		Transaction Desc.	From/		Acres	Diversion	Consumptive
			1	2		To				
	601878	EXPL	2007-03-07	PMT	APR CP 00961	T		0	0	

Current Points of Diversion

			(NAD83 UTM in meters)								
POD Number	Well Tag	Source	Q						X	Y	Other Location Desc
			64	Q16	Q4	Sec	Tws	Rng			
CP 00961	POD1		4	4	1	13	20S	32E	620062	3604791*	

An () after northing value indicates UTM location was derived from PLSS - see Help

Source

Acres	Diversion	CU	Use	Priority	Source	Description
0	0		MON		GW	

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 Primary Status: PMT PERMIT
 Total Acres: Subfile: - Header: -
 Total Diversion: 0 Cause/Case: -
 Agent: GEOMECHANICS SOUTHWEST INC
 Contact: BRANDEN SANDERS

Documents on File

Trn #	Doc	File/Act	Status		Transaction Desc.	From/To		Acres	Diversion	Consumptive
			1	2						
	get images	615074_EXPL_2017-10-16	PMT	APR	CP 01693	T		0	0	

Current Points of Diversion

POD Number	Well Tag	Source	Q						(NAD83 UTM in meters)		Other Location Desc
			64	Q16	Q4	Sec	Tws	Rng	X	Y	
CP 01693 POD1	NA		3	2	4	13	20S	32E	620615	3604417	B101
CP 01693 POD2	NA		4	1	4	13	20S	32E	620481	3604415	B105
CP 01693 POD3	NA		2	1	4	13	20S	32E	620481	3604415	B106
CP 01693 POD4	NA		1	2	4	13	20S	32E	620613	3604539	B107
CP 01693 POD5	NA		4	1	4	13	20S	32E	620478	3604349	B108
CP 01693 POD6	NA		3	3	4	13	20S	32E	620306	3604049	B109

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 Total Acres: Subfile: - Header: -
 Total Diversion: 0 Cause/Case: -
 Agent: GEOMECHANICS SOUTHWEST INC
 Contact: BRANDEN SANDERS

Documents on File

Trn #	Doc	File/Act	Status		Transaction Desc.	From/To		Acres	Diversion	Consumptive
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Current Points of Diversion

POD Number	Well Tag	Source	Q						(NAD83 UTM in meters)		Other Location Desc
			64	Q16	Q4	Sec	Tws	Rng	X	Y	
CP 01693 POD1	NA		3	2	4	13	20S	32E	620615	3604417	B101
CP 01693 POD2	NA		4	1	4	13	20S	32E	620481	3604415	B105
CP 01693 POD3	NA		2	1	4	13	20S	32E	620481	3604415	B106
CP 01693 POD4	NA		1	2	4	13	20S	32E	620613	3604539	B107
CP 01693 POD5	NA		4	1	4	13	20S	32E	620478	3604349	B108
CP 01693 POD6	NA		3	3	4	13	20S	32E	620306	3604049	B109

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 Primary Status: PMT PERMIT
 Total Acres: Subfile: - Header: -
 Total Diversion: 0 Cause/Case: -
 Agent: GEOMECHANICS SOUTHWEST INC
 Contact: BRANDEN SANDERS

Documents on File

Trn #	Doc	File/Act	Status		Transaction Desc.	From/To		Acres	Diversion	Consumptive
			1	2						
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Current Points of Diversion

POD Number	Well Tag	Source	Q						(NAD83 UTM in meters)		Other Location Desc
			64	Q16	Q4	Sec	Tws	Rng	X	Y	
CP 01693 POD1	NA		3	2	4	13	20S	32E	620615	3604417	B101
CP 01693 POD2	NA		4	1	4	13	20S	32E	620481	3604415	B105
CP 01693 POD3	NA		2	1	4	13	20S	32E	620481	3604415	B106
CP 01693 POD4	NA		1	2	4	13	20S	32E	620613	3604539	B107
CP 01693 POD5	NA		4	1	4	13	20S	32E	620478	3604349	B108
CP 01693 POD6	NA		3	3	4	13	20S	32E	620306	3604049	B109

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 Primary Purpose: MON MONITORING WELL
 Primary Status: PMT PERMIT
 Total Acres: Subfile: - Header: -
 Total Diversion: 0 Cause/Case: -
 Agent: GEOMECHANICS SOUTHWEST INC
 Contact: BRANDEN SANDERS

Documents on File

Trn #	Doc	File/Act	Status		Transaction Desc.	From/To		Acres	Diversion	Consumptive
			1	2						
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Current Points of Diversion

POD Number	Well Tag	Source	Q						(NAD83 UTM in meters)		Other Location Desc
			64	Q16	Q4	Sec	Tws	Rng	X	Y	
CP 01693 POD1	NA		3	2	4	13	20S	32E	620615	3604417	B101
CP 01693 POD2	NA		4	1	4	13	20S	32E	620481	3604415	B105
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CP 01693 POD5	NA		4	1	4	13	20S	32E	620478	3604349	B108
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WATER RIGHT SUMMARY



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 Primary Purpose: MON MONITORING WELL
 Primary Status: PMT PERMIT
 Total Acres: Subfile: - Header: -
 Total Diversion: 0 Cause/Case: -
 Agent: GEOMECHANICS SOUTHWEST INC
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Documents on File

Trn #	Doc	File/Act	Status		Transaction Desc.	From/To		Acres	Diversion	Consumptive
			1	2						
	get images	615074_EXPL_2017-10-16	PMT	APR	CP 01693	T		0	0	

Current Points of Diversion

POD Number	Well Tag	Source	Q						(NAD83 UTM in meters)		Other Location Desc
			64	Q16	Q4	Sec	Tws	Rng	X	Y	
CP 01693 POD1	NA		3	2	4	13	20S	32E	620615	3604417	 B101
CP 01693 POD2	NA		4	1	4	13	20S	32E	620481	3604415	 B105
CP 01693 POD3	NA		2	1	4	13	20S	32E	620481	3604415	 B106
CP 01693 POD4	NA		1	2	4	13	20S	32E	620613	3604539	 B107
CP 01693 POD5	NA		4	1	4	13	20S	32E	620478	3604349	 B108
CP 01693 POD6	NA		3	3	4	13	20S	32E	620306	3604049	 B109

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

12/5/19 7:14 AM

WATER RIGHT SUMMARY

Ragin' Rutley SWD No. 1 - Offset Produced Water Analysis																			
Wellname	API	Section	Township	Range	Unit	County	Formation	ph	tds_mgl	sodium_mgl	calcium_mgl	iron_mgl	magnesium_mgl	manganese_mgl	chloride_mgl	bicarbonate_mgl	sulfate_mgl	co2_mgl	
LEA 886 STATE #002	3002501744	16	20S	33E	B	LEA	ARTESIA	6.34	133829						82525	785	1427		
LEA 886 STATE #002	3002501744	16	20S	33E	B	LEA	ARTESIA	6.34	133741						82536	851	1427		
ATLANTIC STATE #001	3002501742	16	20S	33E	C	LEA	ARTESIA		13495						7002	1024	609		
LITTLE EDDY UNIT #016	3002521942	16	20S	32E	F	LEA	ARTESIA		30600						15090	608	3947		
WEST TEAS YATES SEVEN RIVERS UNIT #433	3002532032	4	20S	33E	J	LEA	ARTESIA	7.9	17898.7	5960.49	455.85	7.5975	249.198		9682.25	580.449	1093.03		
PLAINS #006	3002520769	21	19S	32E	E	LEA	ARTESIA		135266						84150	144	290		
PLAINS #006	3002520769	21	19S	32E	E	LEA	ARTESIA		137149						84930	290	521		
PLAINS #006	3002520769	21	19S	32E	E	LEA	ARTESIA		163755						101000	195	300		
BONDURANT FEDERAL #001	3002500895	13	19S	32E	I	LEA	ARTESIA		239594						145300	271	820		
BOWMAN FEDERAL #001	3002500923	28	19S	32E	D	LEA	ARTESIA		15821						7812	1502	655		
MAGNOLIA STATE #001	3002501701	32	19S	33E	B	LEA	ARTESIA		8771						4301	1538	180		
NELLIS FEDERAL #003	3002526091	6	19S	33E	F	LEA	ARTESIA	6.8	70660						42600	549	365		
BATE FEDERAL #003	3002522597	35	19S	33E	C	LEA	ARTESIA	7.8	117622						66700	506	5800		
MAHAFFEY ARC FEDERAL #001	3002501735	14	20S	33E	C	LEA	BONE SPRING	7.03	28079						14810	791	1885		
MAHAFFEY ARC FEDERAL #001	3002501735	14	20S	33E	C	LEA	BONE SPRING	7.03	28696						15136	808	1926		
LUSK 16 STATE #002	3002520904	16	19S	32E	K	LEA	BONE SPRING		148331						91520	188	506		
JENNINGS FEDERAL #001	3002524836	15	19S	32E	F	LEA	BONE SPRING	5.8	164916						101031	452	1308		
NELLIS A FEDERAL #004	3002525912	8	19S	33E	E	LEA	BONE SPRING	6.9	48582						28900	763	160		
MALACHITE 22 FEDERAL #001H	3002540318	22	19S	33E	D	LEA	BONE SPRING 1ST SAND	6.4			73407	1293	33	265	0.26	116995	780	480	250
MALACHITE 22 FEDERAL #001H	3002540318	22	19S	33E	D	LEA	BONE SPRING 1ST SAND	6.3			79136	1414	26	271	0.07	125827	1281	300	330
MALACHITE 22 FEDERAL #002H	3002540389	22	19S	33E	C	LEA	BONE SPRING 1ST SAND	6.65	94146		30411.4	4261	16.3	1102	0.3	56987.2	122	1085	120
MALACHITE 22 FEDERAL #001H	3002540318	22	19S	33E	D	LEA	BONE SPRING 1ST SAND	7	153753.1		57364.9	1261	3.5	277	0.2	91996	732	593	250
TAYLOR DRAW 7 FEDERAL #001H	3002541146	7	19S	32E	I	LEA	BONE SPRING 2ND SAND	5.9			86621	9467	153	1801	1.9	154922	207	840	420
TAYLOR DRAW 7 FEDERAL #001H	3002541146	7	19S	32E	I	LEA	BONE SPRING 2ND SAND	6.6	184810		55567.9	10172.4	36.7	1572.6	2.8	114300	122	0	30
HAWKEYE 7 FEDERAL #001	3002500892	7	19S	32E	M	LEA	BONE SPRING 2ND SAND	6.86	91688.5		34069.7	1168	7.1	246.4	0.21	54987.6	366	560	200
LUSK AHB FEDERAL #006	3002531314	35	19S	32E	A	LEA	DELAWARE	8.04	20582			100	130		61	11997	635	0	
LUSK AHB FEDERAL #002	3002531042	35	19S	32E	G	LEA	DELAWARE	6.05	220235		22044	45	3525		136969	122	450		
LUSK AHB FEDERAL #005	3002531151	35	19S	32E	B	LEA	DELAWARE	6.86	172408		12024	28	1945		104976	146	1800		
LUSK AHB FEDERAL #006	3002531314	35	19S	32E	A	LEA	DELAWARE	6.86	125179		4509	8	1520		74983	220	2900		
LUSK AHB FEDERAL #006	3002531314	35	19S	32E	A	LEA	DELAWARE	7.1	125396		3507	8	912		69984	303	7400		
LUSK AHB FEDERAL #006	3002531314	35	19S	32E	A	LEA	DELAWARE	6.65	124441		2116	0	1284		69984	400	6750		
LUSK AHB FEDERAL #002	3002531042	35	19S	32E	G	LEA	DELAWARE	6.25	248495		29659	15	3890		154965	98	500		
LUSK AHB FEDERAL #005	3002531151	35	19S	32E	B	LEA	DELAWARE	7.31	187800		14028	0	2188		114974	156	1400		
LUSK AHB FEDERAL #006	3002531314	35	19S	32E	A	LEA	DELAWARE	7.65	121459		3006	0	1580		69984	400	5000		
LUSK AHB FEDERAL #006	3002531314	35	19S	32E	A	LEA	DELAWARE	6.65	127100		4409	15	1580		74983	273	3500		
LUSK AHB FEDERAL #002	3002531042	35	19S	32E	G	LEA	DELAWARE	6.21	253165		27054	9	9603		160964	103	150		
LUSK AHB FEDERAL #005	3002531151	35	19S	32E	B	LEA	DELAWARE	6.87	193757		18236	8	6564		121973	137	700		
POLEWSKI FEDERAL #001	3002520161	31	19S	32E	D	LEA	DELAWARE		25908						12546	457	3662		
POLEWSKI FEDERAL #001	3002520161	31	19S	32E	D	LEA	DELAWARE		29793						17950	390	454		
POLEWSKI FEDERAL #001	3002520161	31	19S	32E	D	LEA	DELAWARE		26318										
POLEWSKI FEDERAL #001	3002520161	31	19S	32E	D	LEA	DELAWARE		61165						36500	380	1230		
LUSK AHB FEDERAL #005	3002531151	35	19S	32E	B	LEA	DELAWARE	6.83			13267	0	2086		114974	171	950		
LUSK AHB FEDERAL #006	3002531314	35	19S	32E	A	LEA	DELAWARE	7.23			1769	0	715		59986	415	5000		
LUSK AHB FEDERAL #002	3002531042	35	19S	32E	G	LEA	DELAWARE	5.35			20.1	0	12.2		35.5	61.1	48.8		
PLAINS UNIT FEDERAL #007	3002520770	33	19S	32E	D	LEA	DELAWARE		250653						159500	488	425		
PLAINS FEDERAL UNIT #009	3002523121	33	19S	32E	F	LEA	DELAWARE		257806						162000	0	120		
USA LITTLE EDDY UNIT #001	3002500960	25	20S	32E	P	LEA	MORROW		28815						16160	593	1176		
USA LITTLE EDDY UNIT #001	3002500960	25	20S	32E	P	LEA	MORROW		28550						14320	818	1280		
LITTLE EDDY UNIT #003	3002501770	31	20S	33E	O	LEA	MORROW		195142						120000	142	1350		
LITTLE EDDY UNIT #003	3002501770	31	20S	33E	O	LEA	MORROW		59475						34730	380	1560		
LUSK AHB FEDERAL #001	3002530808	35	19S	32E	B	LEA	MORROW	6.8	128189		2505	93	1216		74983	195	3900		
LUSK AHB FEDERAL #001	3002530808	35	19S	32E	B	LEA	MORROW	6.2	158447		6878	75	1797		91979	303	6100		
LUSK AHB FEDERAL #001	3002530808	35	19S	32E	B	LEA	MORROW	6.96	164047		9018	41	1216		96978	225	4250		
LUSK AHB FEDERAL #001	3002530808	35	19S	32E	B	LEA	MORROW	6.59			4717	0	1311		86980	244	2350		
LUSK AHB FEDERAL #001	3002530808	35	19S	32E	B	LEA	MORROW	6.77			3931	138	2086		74983	259	2800		
INEXCO AHY FEDERAL #001	3002525470	7	19S	33E	H	LEA	PENNSYLVANIAN	6.5			5600	50	975.3		37062	610	12.5		
BUFFALO FEDERAL UNIT #004	3002501661	4	19S	33E	H	LEA	PENNSYLVANIAN		163468						99880	415	848		
BUFFALO FEDERAL UNIT #004	3002501661	4	19S	33E	H	LEA	PENNSYLVANIAN		17108						9398	610	991		
BUFFALO FEDERAL UNIT #004	3002501661	4	19S	33E	H	LEA	PENNSYLVANIAN		21444						11400	881	1537		
BUFFALO FEDERAL UNIT #004	3002501661	4	19S	33E	H	LEA	PENNSYLVANIAN		154414						94260	377	688		
NELLIS FEDERAL #001	3002501663	5	19S	33E	O	LEA	PENNSYLVANIAN		38798						23050	366	360		
NELLIS FEDERAL #001	3002501663	5	19S	33E	O	LEA	PENNSYLVANIAN		67912						40630	398	934		
NELLIS FEDERAL #001	3002501663	5	19S	33E	O	LEA	PENNSYLVANIAN		24440						13420	825	990		
FEDERAL AC #002	3002501675	18	19S	33E	E	LEA	PENNSYLVANIAN		46219						26980	734	850		
FEDERAL AC #002	3002501675	18	19S	33E	E	LEA	PENNSYLVANIAN		1305						140	232	510		
ELLIOTT HALL A #001	3002520104	30	19S	32E	A	LEA	STRAWN		38680						22980	620	310		
MIDDLETON A FEDERAL #001	3002508104	18	19S	32E	H	LEA	STRAWN		147995						93600	300	140		
MIDDLETON A FEDERAL #001	3002508104	18	19S	32E	H	LEA	STRAWN		136947										
MIDDLETON A FEDERAL #001	3002508104	18	19S	32E	H	LEA	STRAWN		146300						92500	320	140		
LAGUNA PLATA FEDERAL #001	3002501678	22	19S	33E	I	LEA	WOLFCAMP		46915						27270	714	1116		

Seismicity and Faults in the Vicinity of the Proposed Solaris Water Midstream, LLC
Ragin Rutley SWD No. 1 Devonian Disposal wells in Lea County, New Mexico

The proposed well is located in Lea County, New Mexico. The proposed Ragin Rutley SWD No.1 well is located in Township 20 South, Range 32 East, Section 14; thirty miles east of Carlsbad. The proposed well is located near the Northwest Shelf of the Delaware Basin.

Seismicity:

Historically, the area near the proposed Devonian disposal wells has not seen any major seismic activity. A search of the USGS Earthquake Hazards Program Earthquake Catalog revealed the nearest event to be located 22 miles south of the proposed location, where a magnitude 3.1 earthquake was recorded on March 18, 2012 at a depth of 5 kilometers. Review of the USGS Earthquake Hazard map indicates a very low risk of seismic activity. The USGS surface geologic map of the area shows no Quaternary-aged faulting, also indicating no recent tectonic activity. In addition to a search of the USGS Earthquake Hazards Program Earthquake Catalog, a seismic event research was conducted on the Bureau of Economic Geology's Seismic Monitoring Program, TexNet. TexNet's seismic history dates from January 1, 2017 to present date. A 15-kilometer radius of investigation detected no seismic events during this time period.

Faulting:

The USGS surface geologic map, a USGS published Devonian structure map, and subscription Geomap regional subsurface structure maps at the Yates, Strawn Lime and Devonian levels were reviewed for faults. The nearest faults mapped at the Devonian level were 10.0 and 17.12 miles northwest and southeast of the proposed locations.

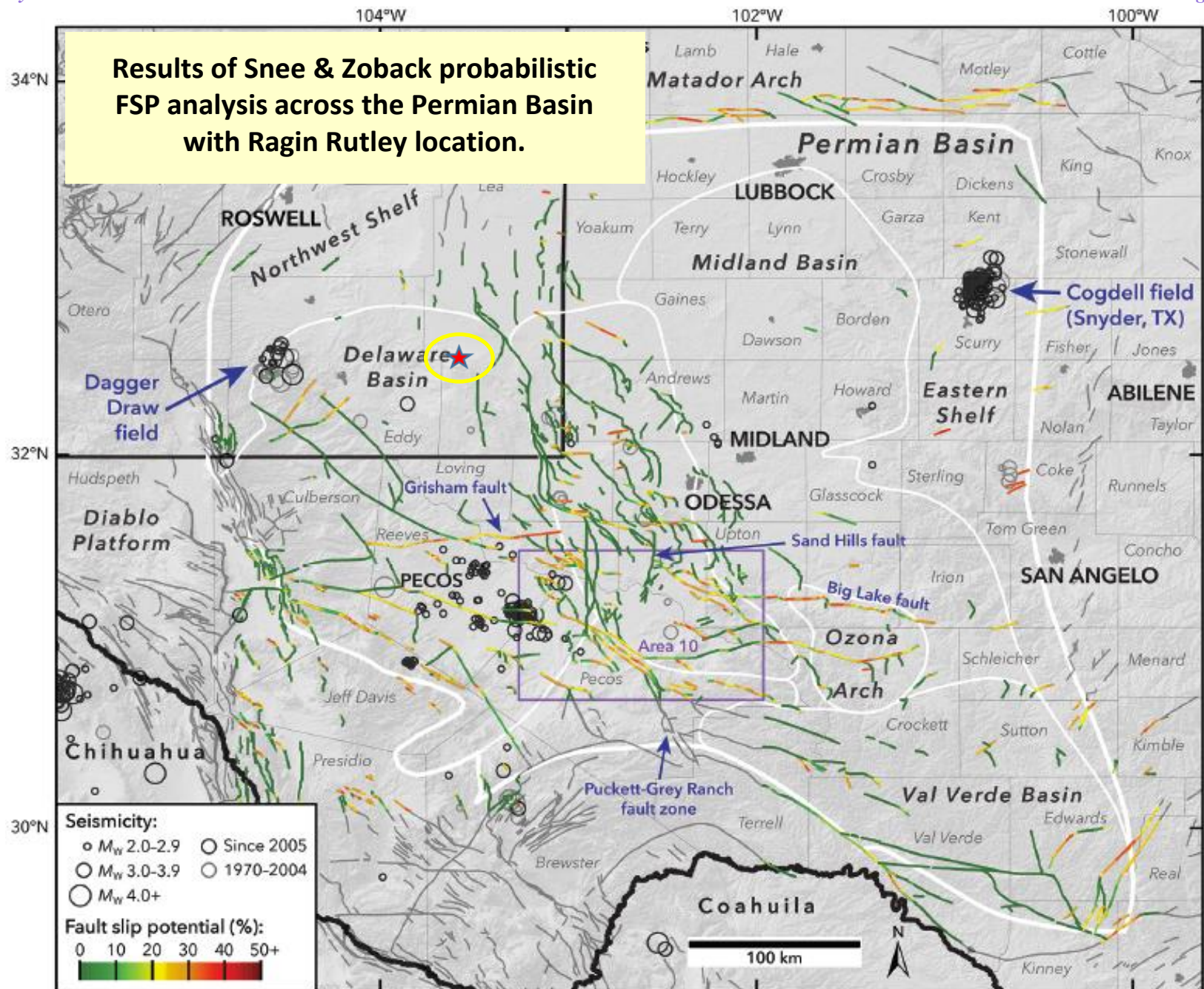
The Snee and Zoback paper "State of Stress in the Permian Basin, Texas and New Mexico: Implications for induced seismicity" was also reviewed to evaluate the presence of faults and fault slip potential risk. These regional maps show no faulting in the area of the proposed wells. Faulting in the New Mexico portion of the Delaware Basin generally shows less than a 10% probability of fault slip movement.

The distance from the proposed wells to the closest mapped faults yields an extremely low probability that the faults will become critically stressed by injection into the referenced wells.



Tyler F. Moehlman

Petroleum Engineer, Lonquist & Co. LLC



Earthquake Catalog

SHOW TABLE

STATION LIST

DOWNLOAD DATA...

AREA OF INTEREST...

CONTACT US

IMPORTANT INFORMATION

Earthquakes

Final

Preliminary

1.5 < Magnitude <= 2.0

2.0 < Magnitude <= 2.5

2.5 < Magnitude <= 3.0

3.0 < Magnitude <= 3.5

3.5 < Magnitude <= 4

4 < Magnitude <= 5.5

Magnitude > 5.5

Stations

TexNet Permanent

TexNet Portable

Temporary

Other Networks

Seismic Regions

Require Focal Mechanism?

Earthquake Magnitude

2.5

6

Lock Magnitude

Date Range

SELECT DATE RANGE...

Manual Area of Interest

Note: Longitude in Texas ranges from approximately -107 degrees to -93 degrees.

Rectangular AOI

Longitude Min

Latitude Max

Longitude Max

Latitude Min

SUBMIT RECTANGLE

Circular AOI

Center Latitude

Center Longitude

Radius

Radius Units

SELECT CIRCLE

Leaflet

Powered by Esri

USGS, NOAA

-  TexNet Permanent
-  TexNet Portable
-  Temporary
-  Other Networks

Seismic Regions



Require Focal Mechanism?

☐

Earthquake Magnitude

2

6

☐ Lock Magnitude

Date Range

SELECT DATE RANGE...

Earliest Date

1/1/2017

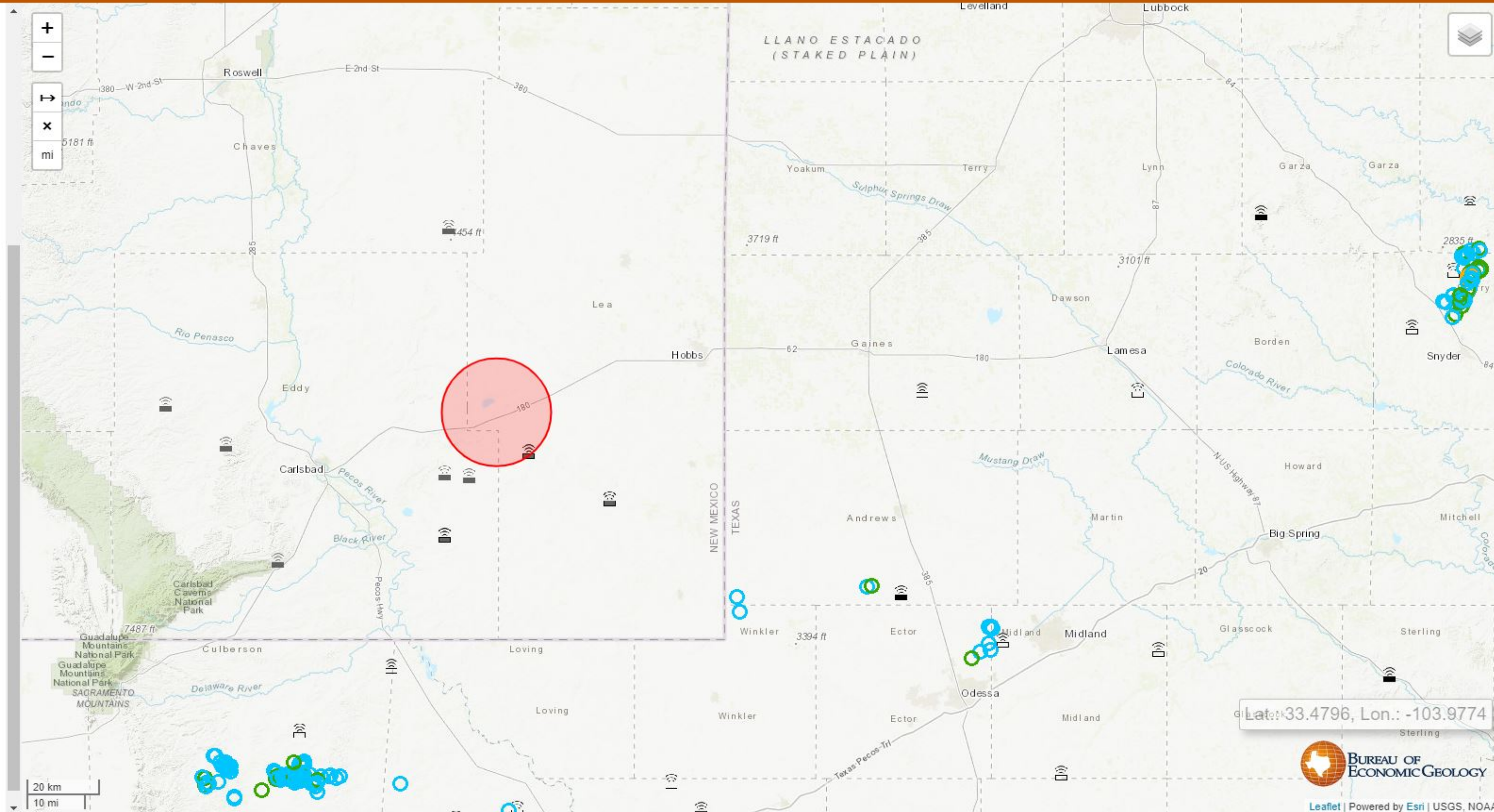
Latest Date

12/7/2019

Did you feel an earthquake? You can report it to USGS [here](#).

Last Earthquake Added: 2019-12-06 21:50:18 (UTC)

Selected Events (Total 0)



☐ 2.5+

☐ 4.5+

☒ Custom

Minimum

Maximum

Rectangular

☐ Past 7 Days

☐ Past 30 Days

☒ Custom

Date & Time

Start (UTC)

End (UTC)

Geographic Region

☐ World

☐ Conterminous U.S.¹

☒ Custom

Custom Circle

- 32.56828178 Latitude
- 103.72908948 Longitude
- 15 Radius (km)

Draw Rectangle on Map

- Advanced Options

Geographic Region

Decimal degree coordinates. North must be greater than South. East must be greater than West.

North

West

East

South

Circle

Center Latitude

Center Longitude

Outer Radius (km)

Depth (km)

Minimum

Maximum

Azimuthal Gap

Minimum

Maximum

Review Status

☒ Any

☐ Automatic

☐ Reviewed

+
-

✓

Didn't find what you were looking for?

- 1

×

Earthquakes happen around the world all the time. Change your options to view more earthquakes.

☐ 2.5+

☐ 4.5+

☒ Custom

Minimum

2

Maximum

Date & Time

☐ Past 7 Days

☐ Past 30 Days

☒ Custom

Start (UTC)

1900-00-00 00:00:00

End (UTC)

2019-12-07 23:59:59

Geographic Region

☐ World

☐ Conterminous U.S.¹

☒ Custom

Custom Circle

- 32.56828178 Latitude
- 103.72908948 Longitude
- 25 Radius (km)

Draw Rectangle on Map

-

Advanced Options

Geographic Region

Decimal degree coordinates. North must be greater than South. East must be greater than West.

North

West

East

South

Circle

Center Latitude

32.56828178

Center Longitude

-103.72908948

Outer Radius (km)

25

Depth (km)

Minimum

Maximum

Azimuthal Gap

Minimum

Maximum

Review Status

☒ Any

☐ Automatic

☐ Reviewed

Search Results

0 of – earthquakes in map area.

Click for more information

There are no events in the current feed.

Didn't find what you were looking for?

Check your [Settings](#).

[Which earthquakes are included on the map and list?](#)

[Felt something not shown – report it here.](#)

+

–

Zoom to...

Caution

The current selection does not currently include any earthquakes.

Earthquakes happen around the world all the time. Change your options to view more earthquakes.

Continue

3000 km

2000 mi

Earthquakes loading

Unavailable

☐ 2.5+

☐ 4.5+

☒ Custom

Minimum

2

Maximum

Date & Time

☐ Past 7 Days

☐ Past 30 Days

☒ Custom

Start (UTC)

1900-00-00 00:00:00

End (UTC)

2019-12-07 23:59:59

Geographic Region

☐ World

☐ Conterminous U.S.¹

☒ Custom

Custom Circle

- 32.56828178 Latitude
- 103.72908948 Longitude
- 50 Radius (km)

Draw Rectangle on Map

- Advanced Options

Geographic Region

Decimal degree coordinates. North must be greater than South. East must be greater than West.

North

West

East

South

Circle

Center Latitude

32.56828178

Center Longitude

-103.72908948

Outer Radius (km)

50

Depth (km)

Minimum

Maximum

Azimuthal Gap

Minimum

Maximum

Review Status

☒ Any

☐ Automatic

☐ Reviewed



Search Results

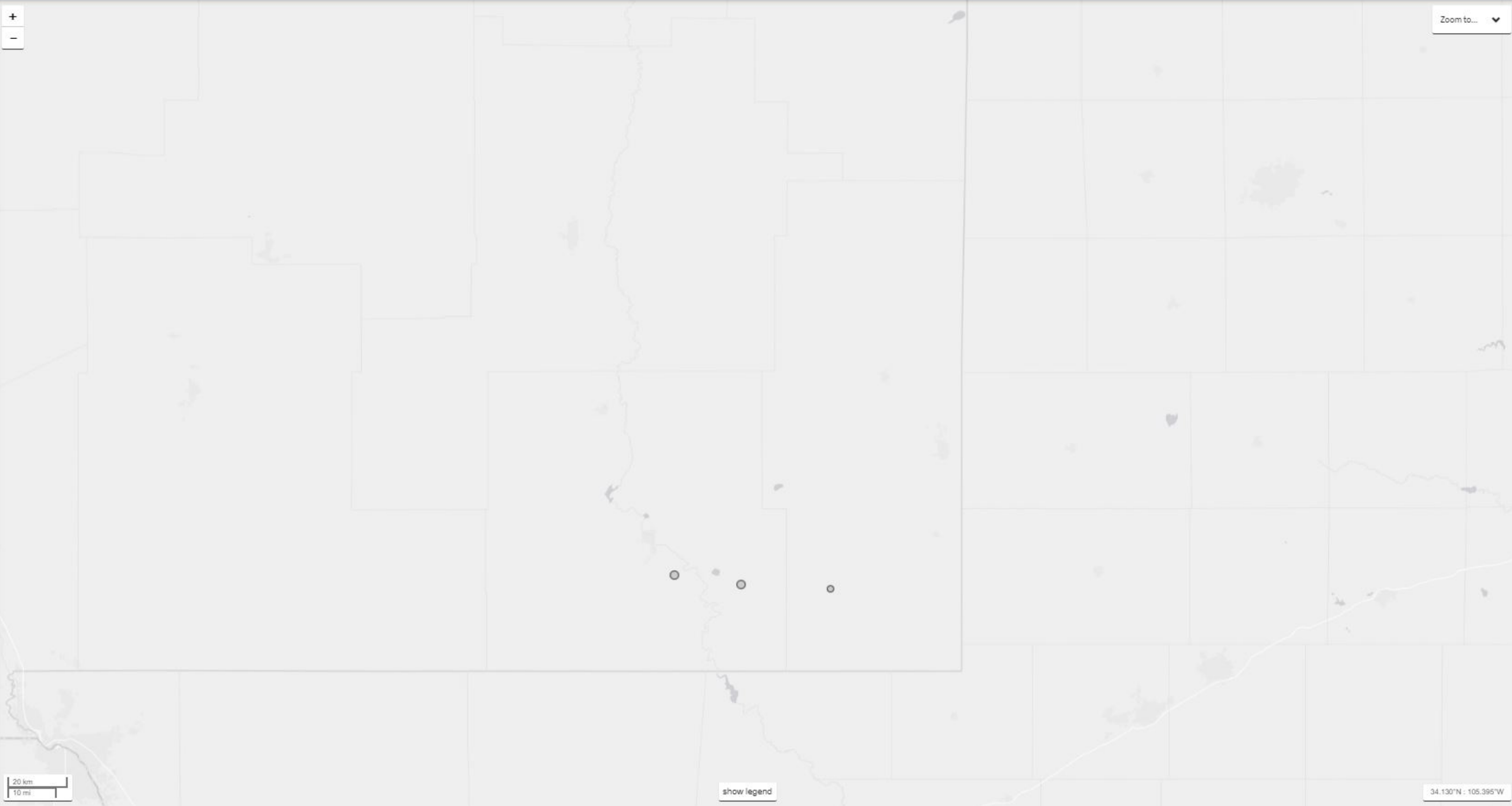
3 of 3 earthquakes in map area.

▼

Click for more information

3.1	New Mexico 2012-03-18 10:57:22 (UTC)	5.0 km
2.9	New Mexico 1984-12-04 20:36:36 (UTC)	5.0 km
3.9	New Mexico 1974-11-28 03:35:20 (UTC)	5.0 km

- Didn't find what you were looking for?
- Check your [Settings](#).
 - [Which earthquakes are included on the map and list?](#)
 - [Felt something not shown – report it here.](#)



Affidavit of Publication

STATE OF NEW MEXICO
COUNTY OF LEA

I, Daniel Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

Beginning with the issue dated
December 04, 2019
and ending with the issue dated
December 04, 2019.


Publisher

Sworn and subscribed to before me this
4th day of December 2019.


Business Manager

My commission expires

January 29, 2023

(Seal)



OFFICIAL SEAL
GUSSIE BLACK
Notary Public
State of New Mexico

My Commission Expires 1-29-23

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937 and payment of fees for said

LEGALS

LEGAL NOTICE DECEMBER 4, 2019

Solaris Water Midstream, LLC, 907 Tradewinds Blvd., Suite B, Midland, TX 79706, is filing Form C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division for administrative approval for its salt water disposal well, Ragin Rutley SWD No. 1. The proposed well will be located 857' FSL & 228' FEL in Section 14, Township 20S, Range 32E in Lea County, New Mexico. Disposal water will be sourced from area production, and will be injected into the Devonian-Silurian formation (determined by offset log analysis) through an open hole completion between a maximum applied for top of 14,463 feet to a maximum depth of 16,263 feet. The maximum surface injection pressure will not exceed 2,893 psi with a maximum rate of 40,000 BWPD. Interested parties opposing the action must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Drive, Santa Fe, New Mexico 87505, within 15 days. Additional information can be obtained from the applicant's agent, Lonquist & Co., LLC, at (512) 600-1777. **#34940**

67112661

00236790

LONQUIST & CO., LLC
12912 HILL COUNTRY BLVD, STE F200
AUSTIN, TX 78738

LONQUIST & CO. LLC**PETROLEUM
ENGINEERS****ENERGY
ADVISORS****AUSTIN • HOUSTON • WICHITA • DENVER • CALGARY****DETERMINATION AND NOTICE OF AFFECTED PARTIES – NEW MEXICO**

If an operator or mineral lessee has legal acreage or leases within one mile of the proposed salt water disposal well, their contact information is collected for notification purposes. Legal acreage of offset operators is gathered from the New Mexico Oil Conservation District's Permitting website. Minerals leased from the federal government are determined by referencing the Bureau of Land Management's Land and Mineral System Reports database. Minerals leased from the state government are determined by referencing the New Mexico State Land Office's Data Access database. Contact information for the affected parties is then extracted from the reports that were filed with the appropriate regulatory agency. Should any private minerals that are not public information fall within the one-mile radius, a title search was performed to discover the current lessee of those minerals or identifying the mineral owner of the acreage.

Notices were sent for the Ragin Rutley SWD No. 1 application by mailing them a copy of Form C-108 on 12/9/2019. The individual tracking numbers are attached in the following pages of this application. Receipt of each application will be monitored and presented to the Oil Conservation Division upon request.



Tyler Moehlman
Petroleum Engineer

Project: Solaris Water Midstream, LLC
Ragin Rutley SWD No. 1

Ragin Rutley SWD No. 1
1 Mile Offset Operators and Lessees List

S/T/R	QQ UNIT LETTER(S)	OPERATOR	MINERAL LESSEE	MINERAL OWNER	SURFACE OWNER	ADDRESS 1	ADDRESS 2
11/T20S/R32E	N,O,P	-	OXY USA INC	-	-	PO BOX 27570	HOUSTON TX 772277570
	N,O,P	-	BP AMERICA PRODUCTION CO (OPERATING RIGHTS)	-	-	PO BOX 3092	HOUSTON TX 772533092
	N,O,P	-	ANADARKO E & P ONSHORE LLC (OPERATING RIGHTS)	-	-	PO BOX 173779	DENVER CO 802173779
12/T20S/R32E	M,N	-	EOG RESOURCES INC	-	-	PO BOX 4362	HOUSTON TX 772104362
	M,N	-	SHARBRO ENERGY LLC	-	-	PO BOX 840	ARTESIA NM 882110840
	M,N	-	OXY Y-1 COMPANY	-	-	PO BOX 27570	HOUSTON TX 772277570
	O	-	EOG RESOURCES INC	-	-	P.O. BOX 2267	MIDLAND, TX 79702
13/T20S/R32E	N	COG OPERATING LLC	-	-	-	600 W ILLINOIS AVE	MIDLAND, TX 79701
	C,D,E,F,L,K,M,N	-	COG OPERATING LLC	-	-	600 W ILLINOIS AVE	MIDLAND, TX 79701
	A,B,G,H	-	XTO DELAWARE BASIN, LLC.	-	-	22777 SPRINGWOODS VILLAGE PKWY	SPRING, TX 77389
14/T20S/R32E	B,D,E,G,J,L,M,N,O,P	EOG RESOURCES INC	-	-	-	P.O. Box 2267	MIDLAND, TX 79702
	A	MARATHON OIL PERMIAN LLC	-	-	-	5555 SAN FELIPE St.	HOUSTON, TX 77056
	ENTIRE SECTION	-	EOG RESOURCES INC	-	-	PO BOX 4362	HOUSTON TX 772104362
	ENTIRE SECTION	-	OXY Y-1 COMPANY	-	-	PO BOX 27570	HOUSTON TX 772277570
15/T20S/R32E	I,P	-	MARATHON OIL PERMIAN LLC (LESSEE)	-	-	5555 SAN FELIPE ST	HOUSTON TX 770562701
	I,P	-	HANLEY PETROLEUM LLC (OPERATING RIGHTS)	-	-	415 W WALL ST STE 1500	MIDLAND TX 797014455
	I,P	-	SLADE JARVIS J (OPERATING RIGHTS)	-	-	535 MADISON AVE FL 4	NEW YORK NY 100224291
	I,P	-	H6 HOLDING LLC (OPERATING RIGHTS)	-	-	PO BOX 1212	MIDLAND TX 797021212
	I,P	-	TBO OIL & GAS LLC (OPERATING RIGHTS)	-	-	4505 MOCKINGBIRD LN	MIDLAND TX 797071617
	I,P	-	MARATHON OIL PERMIAN LLC (OPERATING RIGHTS)	-	-	5555 SAN FELIPE ST	HOUSTON TX 770562701
	I,P	-	VERITAS PERMIAN RESOURCES LLC (OPERATING RIGHTS)	-	-	PO BOX 10850	FORT WORTH TX 761140850
	I,P	-	LHAH PROPERTIES LLC (OPERATING RIGHTS)	-	-	415 W WALL ST STE 1500	MIDLAND TX 797014455
22/T20S/R32E	A	-	FASKEN LAND & MINERALS LTD	-	-	6101 HOLIDAY HILL RD	MIDLAND TX 79707
	A	-	WHITING 1988 PROD (OPERATING RIGHTS)	-	-	1700 BROADWAY #2300	DENVER CO 802902301
	A	-	FASKEN BARBARA (OPERATING RIGHTS)	-	-	6101 HOLIDAY HILL RD	MIDLAND TX 797071631
	A	-	FASKEN LAND & MINERALS LTD (OPERATING RIGHTS)	-	-	6101 HOLIDAY HILL RD	MIDLAND TX 79707
23/T20S/R32E	K	FASKEN OIL & RANCH LTD	-	-	-	6101 HOLIDAY HILL RD	MIDLAND TX 79707
	ENTIRE SECTION	-	FASKEN LAND & MINERALS LTD	-	-	6101 HOLIDAY HILL RD	MIDLAND TX 79707
	ENTIRE SECTION	-	WHITING 1988 PROD (OPERATING RIGHTS)	-	-	1700 BROADWAY #2300	DENVER CO 802902301
	ENTIRE SECTION	-	FASKEN BARBARA (OPERATING RIGHTS)	-	-	6101 HOLIDAY HILL RD	MIDLAND TX 797071631
	ENTIRE SECTION	-	FASKEN LAND & MINERALS LTD (OPERATING RIGHTS)	-	-	6101 HOLIDAY HILL RD	MIDLAND TX 79707
24/T20S/R32E	A,B,E,F,G,H	-	TITUS OIL & GAS CORP	-	-	100 THROCKMORTON ST STE 1630	FORT WORTH TX 761022846
	C,D	-	GROSS FAMILY LTD	-	-	PO BOX 358	ROSWELL NM 88202
	C,D	-	TRAINER PARTNERS LTD	-	-	PO BOX 3788	MIDLAND TX 79702378
	C,D	-	TITUS OIL & GAS CORP (OPERATING RIGHTS)	-	-	100 THROCKMORTON ST STE 1630	FORT WORTH TX 761022846
	J,K,L,M,N	-	EOG RESOURCES INC	-	-	PO BOX 2267	MIDLAND TX 79702
Surface Location	-	-	-	-	BLM	-	-

Ramona Hovey
Longquist & CO LLC
1001 McKinney Street
Ste 1650
Houston, TX 77002



9314 8699 0430 0066 4498 61

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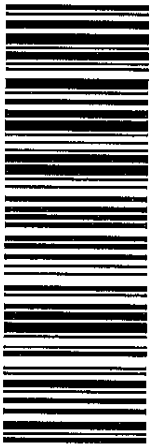


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OIL CONSERVATION DIVISION DISTRICT I
1625 N. French Drive
2241-RAGIN RUTLEY SWD #1
Hobbs, NM 88240

Reference Number: 2241-RAGIN RUTLEY SWD #1

Ramona Hovey
Longquist & CO, LLC
1001 McKinney Street
Ste 1650
Houston, TX 77002



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BUREAU OF LAND MANAGEMENT
301 Dinosaur Trail
2241-RAGIN RUTLEY SWD #1
Santa Fe, NM 87508

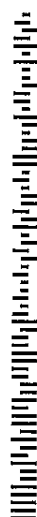
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Ramona Hovey
Lorquist & CO LLC
1001 McKinney Street
Ste 1650
Houston, TX 77002



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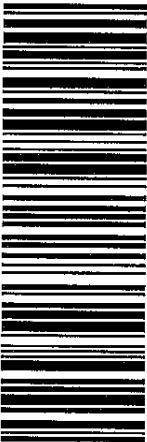


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FATTH CROSBY, OGM/D/WATER
NEW MEXICO STATE LAND OFFICE
310 OLD SANTA FE TRAIL
2241-RAGIN RUTLEY SWD #1
SANTA FE, NM 87501

Reference Number: 2241-RAGIN RUTLEY SWD #1

Ramona Hovey
Longquist & CO LLC
1001 McKinney Street
Ste 1650
Houston, TX 77002



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ANADARKO E & P ONSHORE LLC
PO BOX 173779
2241-RAGIN RUTLEY SWD #1
DENVER, CO 80217-3779

Reference Number: 2241-RAGIN RUTLEY SWD #1

Ramona Hovey
Lorquist & CO LLC
1001 McKinney Street
Ste 1650
Houston, TX 77002



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BP AMERICA PRODUCTION CO
PO BOX 3092
2241-RAGIN RUTLEY SWD #1
HOUSTON, TX 77253-3092

Reference Number: 2241-RAGIN RUTLEY SWD #1

Ramona Hovey
Longquist & CO LLC
1001 McKinney Street
Ste 1650
Houston, TX 77002



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COG OPERATING LLC
600 W ILLINOIS AVE
2241-RAGIN RUTLEY SWD #1
MIDLAND, TX 79701

Reference Number: 2241-RAGIN RUTLEY SWD #1

Ramona Hovey
Lanquist & CO LLC
1001 McKinney Street
Ste 1650
Houston, TX 77002



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EOG RESOURCES INC
PO BOX 4362
2241-RAGIN RUTLEY SWD #1
HOUSTON, TX 77210-4362

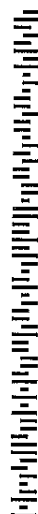
Reference Number: 2241-RAGIN RUTLEY SWD #1

Ramona Hovey
Lonquist & CO LLC
1001 McKinney Street
Ste 1650
Houston, TX 77002



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EOG RESOURCES INC
P.O. BOX 2267
2241-RAGIN RUTLEY SWD #1
MDLAND, TX 79702

Reference Number: 2241-RAGIN RUTLEY SWD #1

Ramona Hovey
Longquist & CO LLC
1001 McKinney Street
Ste 1650
Houston, TX 77002



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BARBARA FASKEN
FASKEN LAND & MINERALS LTD
6101 HOLIDAY HILL RD
FASKEN OIL & RANCH LTD
2241-RAGIN RUTLEY SWD #1
MIDLAND, TX 79707-1631

Reference Number: 2241-RAGIN RUTLEY SWD #1

Ramona Hovey
Longquist & CO LLC
1001 McKinney Street
Ste 1650
Houston, TX 77002



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GROSS FAMILY LTD
PO BOX 358
2241-RAGIN RUTLEY SWD #1
ROSWELL, NM 88202

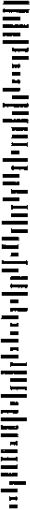
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Longquist & CO LLC
1001 McKinney Street
Ste 1650
Houston, TX 77002



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H6 HOLDING LLC
PO BOX 1212
2241-RAGIN RUTLEY SWD #1
MIDLAND, TX 79702-1212

Reference Number: 2241-RAGIN RUTLEY SWD #1

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Longquist & CO LLC
1001 McKinney Street
Ste 1650
Houston, TX 77002



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HANLEY PETROLEUM LLC
LHAH PROPERTIES
415 W WALL ST STE 1500
2241-RAGIN RUTLEY SWD #1
MIDLAND, TX 79701-4455

Reference Number: 2241-RAGIN RUTLEY SWD #1

Ramona Hovey
Longquist & CO LLC
1001 McKinney Street
Ste 1650
Houston, TX 77002



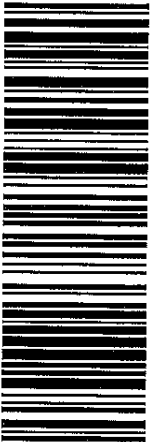
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Total Postage: \$6.55
MARATHON OIL PERMIAN LLC
5555 SAN FELIPE St.
2241-RAGIN RUTLEY SWD #1
HOUSTON, TX 77056

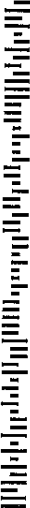
Reference Number: 2241-RAGIN RUTLEY SWD #1

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Longquist & CO LLC
1001 McKinney Street
Ste 1650
Houston, TX 77002



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OXY USA INC
OXY Y-1 COMPANY
PO BOX 27570
2241-RAGIN RUTLEY SWD #1
HOUSTON, TX 77227-7570

Reference Number: 2241-RAGIN RUTLEY SWD #1

Ramona Hovey
Lougust & CO LLC
1001 McKinney Street
Ste 1650
Houston, TX 77002



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SHARBRO ENERGY LLC
PO BOX 840
2241-RAGIN RUTLEY SWD #1
ARTESIA, NM 88211-0840

Reference Number: 2241-RAGIN RUTLEY SWD #1

Ramona Hovey
Lomquist & CO LLC
1001 McKinney Street
Ste 1650
Houston, TX 77002



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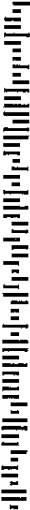
JARVIS J SLADE
535 MADISON AVE FL 4
2241-RAGIN RUTLEY SWD #1
NEW YORK, NY 10022-4291

Reference Number: 2241-RAGIN RUTLEY SWD #1

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Longquist & CO LLC
1001 McKinney Street
Ste 1650
Houston, TX 77002



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TBO OIL & GAS LLC
4505 MOCKINGBIRD LN
2241-RAGIN RUTLEY SWD #1
MDLAND, TX 79707-1617

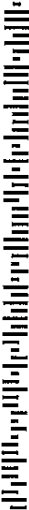
Reference Number: 2241-RAGIN RUTLEY SWD #1

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1001 McKinney Street
Ste 1650
Houston, TX 77002



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TITUS OIL & GAS CORP
100 THROCKMORTON ST STE 1630
2241-RAGIN RUTLEY SWD #1
FORT WORTH, TX 76102-2846

Reference Number: 2241-RAGIN RUTLEY SWD #1

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1001 McKinney Street
Ste 1650
Houston, TX 77002



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TRAINER PARTNERS LTD
PO BOX 3788
2241-RAGIN RUTLEY SWD #1
MIDLAND, TX 79702-2378

Reference Number: 2241-RAGIN RUTLEY SWD #1

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1001 McKinney Street
Ste 1650
Houston, TX 77002



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VERTAS PERMIAN RESOURCES LLC
PO BOX 10850
2241-RAGIN RUTLEY SWD #1
FORT WORTH, TX 76114-0850

Reference Number: 2241-RAGIN RUTLEY SWD #1

Ramona Hovey
Lonquist & CO LLC
1001 McKinney Street
Ste 1650
Houston, TX 77002



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WHITING 1988 PROD
1700 BROADWAY #2300
2241-RAGIN RUTLEY SWD #1
DENVER, CO 80290-2301

Reference Number: 2241-RAGIN RUTLEY SWD #1

Ramona Hovey
Longquist & CO LLC
1001 McKinney Street
Ste 1650
Houston, TX 77002



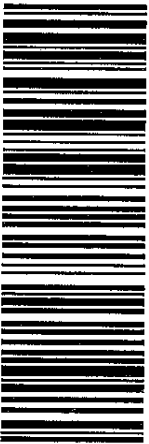
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XTO DELAWARE BASIN, LLC,
22777 SPRINGWOODS VILLAGE PKWY
2241-RAGIN RUTLEY SWD #1
SPRING, TX 77389

Reference Number: 2241-RAGIN RUTLEY SWD #1

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Longquist & CO LLC
1001 McKinney Street
Ste 1650
Houston, TX 77002



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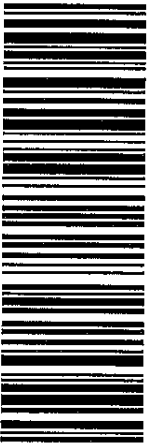


Total Postage: \$6.55

Ralph E Williamson
PO Box 994
2241-RAGIN RUTLEY SWD #1
Midland, TX 79702

Reference Number: 2241-RAGIN RUTLEY SWD #1

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1001 McKinney Street
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Houston, TX 77002



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WPX Energy Permian LLC
3500 One Williams Center
2241-RAGIN RUTLEY SWD #1
Tulsa, OK 74172

Reference Number: 2241-RAGIN RUTLEY SWD #1

LONQUIST & CO. LLC

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HOUSTON

PETROLEUM
ENGINEERS

ENERGY
ADVISORS

WICHITA
CALGARY

www.lonquist.com

December 9, 2019

ANADARKO E & P ONSHORE LLC
PO BOX 173779
DENVER CO 80217-3779

Subject: Ragin Rutley SWD No. 1 Authorization to Inject

To Whom It May Concern:

Attached for your review is Form C-108, Application for Authorization to Inject, and its supplemental documents prepared for Solaris Water Midstream LLC's Ragin Rutley SWD No. 1 well. Section XIV of Form C-108 requires that the surface land owner on which the well is located and each leasehold operator within a one-half mile radius of the proposed well location be furnished with the application. The notice of application has been extended to a one-mile radius.

According to the New Mexico Oil Conservation Division, surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date in which this application was mailed to them.

Any questions should be directed towards Solaris Water Midstream LLC's agent, Lonquist & Co., LLC.

Regards,



Ramona K. Hovey
Sr. Petroleum Engineer
Lonquist & Co., LLC

(512) 600-1777
ramona@lonquist.com

LONQUIST & CO. LLC

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December 9, 2019

BARBARA FASKEN
6101 HOLIDAY HILL RD
MIDLAND TX 79707-1631

Subject: Ragin Rutley SWD No. 1 Authorization to Inject

To Whom It May Concern:

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Regards,



Ramona K. Hovey
Sr. Petroleum Engineer
Lonquist & Co., LLC

(512) 600-1777
ramona@lonquist.com

LONQUIST & CO. LLC

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December 9, 2019

BP AMERICA PRODUCTION CO
PO BOX 3092
HOUSTON TX 77253-3092

Subject: Ragin Rutley SWD No. 1 Authorization to Inject

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Regards,



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Sr. Petroleum Engineer
Lonquist & Co., LLC

(512) 600-1777
ramona@lonquist.com

LONQUIST & CO. LLC

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December 9, 2019

COG OPERATING LLC
600 W ILLINOIS AVE
MIDLAND, TX 79701

Subject: Ragin Rutley SWD No. 1 Authorization to Inject

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Regards,



Ramona K. Hovey
Sr. Petroleum Engineer
Lonquist & Co., LLC

(512) 600-1777
ramona@lonquist.com

LONQUIST & CO. LLC

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ENGINEERS

ENERGY
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CALGARY

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December 9, 2019

EOG RESOURCES INC
PO BOX 4362
HOUSTON TX 77210-4362

Subject: Ragin Rutley SWD No. 1 Authorization to Inject

To Whom It May Concern:

Attached for your review is Form C-108, Application for Authorization to Inject, and its supplemental documents prepared for Solaris Water Midstream LLC's Ragin Rutley SWD No. 1 well. Section XIV of Form C-108 requires that the surface land owner on which the well is located and each leasehold operator within a one-half mile radius of the proposed well location be furnished with the application. The notice of application has been extended to a one-mile radius.

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Regards,



Ramona K. Hovey
Sr. Petroleum Engineer
Lonquist & Co., LLC

(512) 600-1777
ramona@lonquist.com

LONQUIST & CO. LLC

AUSTIN
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ENGINEERS

ENERGY
ADVISORS

WICHITA
CALGARY

www.lonquist.com

December 9, 2019

EOG RESOURCES INC
P.O. BOX 2267
MIDLAND, TX 79702

Subject: Ragin Rutley SWD No. 1 Authorization to Inject

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Ramona K. Hovey
Sr. Petroleum Engineer
Lonquist & Co., LLC

(512) 600-1777
ramona@lonquist.com

LONQUIST & CO. LLC

AUSTIN
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ADVISORS

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December 9, 2019

FASKEN LAND & MINERALS LTD
6101 HOLIDAY HILL RD
MIDLAND TX 79707

Subject: Ragin Rutley SWD No. 1 Authorization to Inject

To Whom It May Concern:

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Regards,



Ramona K. Hovey
Sr. Petroleum Engineer
Lonquist & Co., LLC

(512) 600-1777
ramona@lonquist.com

LONQUIST & CO. LLC

AUSTIN
HOUSTON

PETROLEUM
ENGINEERS

ENERGY
ADVISORS

WICHITA
CALGARY

www.lonquist.com

December 9, 2019

FASKEN OIL & RANCH LTD
6101 HOLIDAY HILL RD
MIDLAND TX 79707

Subject: Ragin Rutley SWD No. 1 Authorization to Inject

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Regards,



Ramona K. Hovey
Sr. Petroleum Engineer
Lonquist & Co., LLC

(512) 600-1777
ramona@lonquist.com

LONQUIST & CO. LLC

AUSTIN
HOUSTON

PETROLEUM
ENGINEERS

ENERGY
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WICHITA
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December 9, 2019

GROSS FAMILY LTD
PO BOX 358
ROSWELL NM 88202

Subject: Ragin Rutley SWD No. 1 Authorization to Inject

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Sr. Petroleum Engineer
Lonquist & Co., LLC

(512) 600-1777
ramona@lonquist.com

LONQUIST & CO. LLC

AUSTIN
HOUSTON

PETROLEUM
ENGINEERS

ENERGY
ADVISORS

WICHITA
CALGARY

www.lonquist.com

December 9, 2019

H6 HOLDING LLC
PO BOX 1212
MIDLAND TX 79702-1212

Subject: Ragin Rutley SWD No. 1 Authorization to Inject

To Whom It May Concern:

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Regards,



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Sr. Petroleum Engineer
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December 9, 2019

HANLEY PETROLEUM LLC
415 W WALL ST STE 1500
MIDLAND TX 79701-4455

Subject: Ragin Rutley SWD No. 1 Authorization to Inject

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December 9, 2019

JARVIS J SLADE
535 MADISON AVE FL 4
NEW YORK NY 10022-4291

Subject: Ragin Rutley SWD No. 1 Authorization to Inject

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December 9, 2019

LHAH PROPERTIES LLC
415 W WALL ST STE 1500
MIDLAND TX 79701-4455

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December 9, 2019

MARATHON OIL PERMIAN LLC
5555 SAN FELIPE St.
HOUSTON, TX 77056

Subject: Ragin Rutley SWD No. 1 Authorization to Inject

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December 9, 2019

OXY USA INC
PO BOX 27570
HOUSTON TX 77227-7570

Subject: Ragin Rutley SWD No. 1 Authorization to Inject

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December 9, 2019

OXY Y-1 COMPANY
PO BOX 27570
HOUSTON TX 77227-7570

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December 9, 2019

RALPH E WILLIAMSON
PO BOX 994
MIDLAND, TX 79702

Subject: Ragin Rutley SWD No. 1 Authorization to Inject

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December 9, 2019

SHARBRO ENERGY LLC
PO BOX 840
ARTESIA NM 88211-0840

Subject: Ragin Rutley SWD No. 1 Authorization to Inject

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December 9, 2019

TBO OIL & GAS LLC
4505 MOCKINGBIRD LN
MIDLAND TX 79707-1617

Subject: Ragin Rutley SWD No. 1 Authorization to Inject

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December 9, 2019

TITUS OIL & GAS CORP
100 THROCKMORTON ST STE 1630
FORT WORTH TX 76102-2846

Subject: Ragin Rutley SWD No. 1 Authorization to Inject

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December 9, 2019

TRAINER PARTNERS LTD
PO BOX 3788
MIDLAND TX 7970-2378

Subject: Ragin Rutley SWD No. 1 Authorization to Inject

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December 9, 2019

VERITAS PERMIAN RESOURCES LLC
PO BOX 10850
FORT WORTH TX 76114-0850

Subject: Ragin Rutley SWD No. 1 Authorization to Inject

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December 9, 2019

WHITING 1988 PROD
1700 BROADWAY #2300
DENVER CO 80290-2301

Subject: Ragin Rutley SWD No. 1 Authorization to Inject

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December 9, 2019

WPX ENERGY PERMIAN LLC
3500 ONE WILLIAMS CENTER
TULSA, OK 74172

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December 9, 2019

XTO DELAWARE BASIN, LLC.
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389

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FAITH CROSBY
OGMD/WATER
NEW MEXICO STATE LAND OFFICE
310 OLD SANTA FE TRAIL
SANTA FE, NM 87501

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December 9, 2019

BUREAU OF LAND MANAGEMENT
301 DINOSAUR TRAIL
SANTA FE, NM 87508

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December 9, 2019

OIL CONSERVATION DIVISION DISTRICT I
1625 N. FRENCH DRIVE
HOBBS, NM 88240

Subject: Ragin Rutley SWD No. 1 Authorization to Inject

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December 9, 2019

OIL CONSERVATION DIVISION DISTRICT IV
1220 S ST FRANCIS DR
SANTA FE, NM 87505

Subject: Ragin Rutley SWD No. 1 Authorization to Inject

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Lonquist & Co., LLC

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ramona@lonquist.com

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL
RESOURCES DEPARTMENT

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: _____ Secondary Recovery _____ Pressure Maintenance _____ ☒ Disposal _____ Storage
Application qualifies for administrative approval? _____ ☒ Yes _____ No
- II. OPERATOR: Solaris Water Midstream, LLC
ADDRESS: 701 Tradewinds Blvd., Suite C, Midland, TX 79706
CONTACT PARTY: Whitney McKee PHONE: 432-203-9020
- III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.
Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? _____ Yes _____ ☒ No
If yes, give the Division order number authorizing the project: _____
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- *VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- *X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
- *XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Ramona Hovey

TITLE: Consulting Engineer – Agent for Solaris Water Midstream

SIGNATURE: _____

DATE: 12/9/2019

E-MAIL ADDRESS: ramona@lonquist.com

- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted.
Please show the date and circumstances of the earlier submittal: _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

Side 2

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates and pressures; and,
- (4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

Side 1

INJECTION WELL DATA SHEET

OPERATOR: Solaris Water Midstream, LLC

WELL NAME & NUMBER: Ragin’ Rutley SWD No. 1

WELL LOCATION:	<u>857’ FSL 228’ FEL</u>	<u>LOT 16</u>	<u>14</u>	<u>20S</u>	<u>32E</u>
	FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: <u>26”</u>	Casing Size: <u>20”</u>
Cemented with: <u>953 sx.</u>	<i>or</i> _____ ft ³
Top of Cement: <u>surface</u>	Method Determined: <u>circulation</u>

Intermediate 1 Casing

Hole Size: <u>18.125”</u>	Casing Size: <u>16”</u>
Cemented with: <u>1,357 sx.</u>	<i>or</i> _____ ft ³
Top of Cement: <u>surface</u>	Method Determined: <u>circulation</u>

Intermediate 2 Casing

Hole Size: <u>14.75”</u>	Casing Size: <u>13.375”</u>
Cemented with: <u>1,048 sx.</u>	<i>or</i> _____ ft ³
Top of Cement: <u>surface</u>	Method Determined: <u>circulation</u>

Production Casing

Hole Size: 12.250"
Cemented with: 2,668 sx.
Top of Cement: surface

Casing Size: 9.625"
or _____ ft³
Method Determined: circulation

Liner

Hole Size: 8.500"
Cemented with: 422 sx.
Top of Cement: 10,625'
Total Depth: 16,263'

Casing Size: 7.625"
or _____ ft³
Method Determined: logging

Injection Interval

14,463 feet to 16,263 feet
(Open Hole)

Side 2

INJECTION WELL DATA SHEETTubing Size: 5.5", 20 lb/ft, HCL-80, BTC from 0' – 10,425' and 5", 18 lb/ft, HCL-80, LTC from 10,425' – 14,413'Lining Material: DuolineType of Packer: 7-5/8" X 5" Permanent Packer with High Temp Elastomer and Full Inconel 925 trimPacker Setting Depth: 14,413'

Other Type of Tubing/Casing Seal (if applicable): _____

Additional Data

1. Is this a new well drilled for injection? X Yes No

If no, for what purpose was the well originally drilled?

2. Name of the Injection Formation: Devonian, Fusselman

3. Name of Field or Pool (if applicable): SWD; Devonian-Silurian 97869

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used.

No, new drill.

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:

Delaware: 5,049'Strawn: 11,918'Atoka: 12,290'Morrow: 12,917'



Solaris Water Midstream, LLC

Ragin Rutley SWD No. 1

FORM C-108 Supplemental Information

III. Well Data

A. Wellbore Information

1.

Well information	
Lease Name	Ragin Rutley SWD
Well No.	1
Location	S-14 T-20S R-32E
Footage Location	857' FSL & 228' FEL

2.

a. Wellbore Description

	Casing Information				
Type	Surface	Intermediate 1	Intermediate 2	Production	Liner
OD	20"	16"	13.375"	9.625"	7.625"
WT	0.500"	0.656"	0.480"	0.545"	0.500"
ID	19.000"	14.688"	12.347"	8.535"	6.625"
Drift ID	18.936"	15.062"	12.559"	8.379"	6.500"
COD	21.000"	17.000"	13.375"	10.625"	7.625"
Weight	106.5 lb/ft	109 lb/ft	72 lb/ft	53.5 lb/ft	39 lb/ft
Grade	J-55 BTC	J-55 BTC	HCL-80 FJ	HCP-110 BTC	Q-125 EZ-GO FJ3
Hole Size	26"	18.125"	14.75"	12.25"	8.5"
Depth Set	1,385'	2,844'	4,932'	10,825'	10,625' – 14,463'

b. Cementing Program

Casing String	Surface	Intermediate 1	Intermediate 2	Production	Liner
Lead Cement	HALCEM™	HALCEM™	HALCEM™	HALCEM™	NeoCem™
Lead Cement Volume (sacks)	642	700	817	Stage 1: 1,604 Stage 2: 262	421
Lead Cement Yield (ft3/sack)	1.664	1.664	1.664	Stage 1: 2.731 Stage 2: 1.336	1.223
Tail Cement	HALCEM™	HALCEM™	HALCEM™	HALCEM™	-
Tail Cement Volume (sacks)	311	657	231	Stage 1: 623 Stage 2: 178	-
Tail Cement Yield (ft3/sack)	1.332	1.332	1.332	Stage 1: 1.056 Stage 2: 1.336	-
Cement Excess	100%	100%	100%	100%	50%
Total Sacks	953	1,357	1,048	2,668	421
TOC	Surface	Surface	Surface	Surface	10,625'
Method	Circulate to Surface	Circulate to Surface	Circulate to Surface	Circulate to Surface	Logged

3. Tubing Description

Tubing Information	
OD	5.5"
	5.0"
WT	0.361"
	0.362"
ID	4.778"
	4.276"
Drift ID	4.653"
	4.151"
COD	6.050"
	5.563"
Weight	20 lb/ft
	18 lb/ft
Grade	HCL-80 BTC
	HCL-80 LTC
Depth Set	0-'10,425'
	10,425-11,413'

Tubing will be lined with Duoline.

4. Packer Description

7-5/8" x 5" TCPC Permanent Packer with High Temp Elastomer and Full Inconel 925 trim

B. Completion Information

1. Injection Formation: Devonian
2. Gross Injection Interval: 14,463' – 16,263'

Completion Type: Open Hole

3. Drilled for injection.
4. See the attached wellbore schematic.
5. Oil and Gas Bearing Zones within area of well:

Formation	Depth
Delaware	5,049'
Wolfcamp	10,725'
Strawn	11,918'
Atoka	12,290'
Morrow	12,917'

VI. Area of Review

No wells within the area of review penetrate the proposed injection zone.

VII. Proposed Operation Data

1. Proposed Daily Rate of Fluids to be Injected:

Average Volume: 30,000 BPD

Maximum Volume: 40,000 BPD

2. Closed System

3. Anticipated Injection Pressure:

Average Injection Pressure: 2,169 PSI (surface pressure)

Maximum Injection Pressure: 2,892 PSI (surface pressure)

4. The injection fluid is to be locally produced water. Attached are produced water sample analyses taken from the closest wells that feature samples from the Artesia, Bone Spring, Delaware, Morrow, Pennsylvanian, Strawn, and Wolfcamp formations.

5. The disposal interval is non-productive. No water samples are available from the surrounding area.

VIII. Geological Data

Devonian Formation Lithology:

The Devonian formation is a dolomitic ramp carbonate that occurs below the Woodford shale and above the Fusselman formation. Strata found in the Devonian formation include two major groups, the Wristen Buildups and the Thirtyone Deepwater Chert, with the Wristen being more abundant. The Wristen Groups is composed of mixed limestone and dolomites with mudstone to grainstone and boundstone textures. Porosity in the Wristen group is a result of both primary and secondary development. Present are moldic, vugular, karstic (including collapse breccia) features that allow for higher porosities and permeabilities. The Thirtyone Formation contains two end-member reservoir facies, skeletal packstones/grainstones and spiculitic chert, with most of the porosity and permeability found in the coarsely crystalline cherty dolomite. These particular characteristics allow for this formation to be a tremendous Salt Water Disposal horizon.

Fusselman Formation Lithology:

The Silurian/Ordovician Fusselman Formation is stratigraphically below the Wristen Group and is above and separated from the Montoya Formation by the Sylvan Shale. The Sylvan Shale is the lower confining layer for the proposed Texas Ranger SWD No. 1 well. Fusselman facies include a laminated skeletal wackestone in the upper part and a buildup complex in the lower part composed of ooid and bryozoan grainstones. These grainstones can also be potentially prolific zones for disposal.

A. Injection Zone: Devonian-Silurian Formation

Formation	Depth
Rustler	1,079'
Salado	1,375'
Capitan Reef Top	2,834'
Capitan Reef Base	4,922'
Delaware Mountain Group	5,049'
Wolfcamp	10,725'
Strawn	11,918'
Atoka	12,290'
Morrow	12,917'
Barnett	13,433'
Mississippian Lime	13,758'
Woodford	14,318'
Devonian	14,463'
Fusselman	15,315'

B. Underground Sources of Drinking Water

Seven (7) water wells exist within one-mile of the proposed well. Across the area, fresh water wells are usually drilled at an average depth of 388'. Average water depth in this region is approximately 239'. The Rustler exists in this area at a depth of 1,079' and will be protected by setting 20" surface casing 10' past the Rustler formation into the Salado salt at approximately 1,385'

The proposed well is located within the Capitan Reef Complex; thus, the proposed wellbore design is a 4-string design that is intended to protect the Capitan Reef from any potential contamination while drilling. The first intermediate casing string will be set approximately 10' into the top of the Capitan Reef at 2,844'. The second intermediate casing will isolate the Capitan Reef by setting a second intermediate casing string approximately 10' past the base of the Capitan Reef. A depiction of the 4-string casing design is included in this application.

IX. Proposed Stimulation Program

50,000 gallon acid job

X. Logging and Test Data on the Well

There are no logs or test data on the well. During the process of drilling and completion resistivity, gamma ray, and density logs will be run.

XI. Chemical Analysis of Fresh Water Wells

Attached is a map of the seven (7) water wells that exist within one-mile of the well location. A 3rd party is currently attempting to identify active wells and obtain sample. If samples can be obtained, analysis results will be provided as soon as possible.

District I1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720**District II**811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720**District III**1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170**District IV**1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462**State of New Mexico**Form C-101
Revised July 18, 2013**Energy Minerals and Natural Resources****Oil Conservation Division**☐ AMENDED REPORT**1220 South St. Francis Dr.****Santa Fe, NM 87505****APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE**

¹ Operator Name and Address SOLARIS WATER MIDSTREAM, LLC 701 TRADEWINDS BLVD., SUITE C MIDLAND, TX 79706		² OGRID Number 371643
		³ API Number TBD
⁴ Property Code	⁵ Property Name RAGIN' RUTLEY SWD	⁶ Well No. 1

⁷ Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
LOT 16	14	20S	32E		857	S	228	E	LEA

⁸ Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
-	-	-	-	-	-	-	-	-	-

⁹ Pool Information

Pool Name SWD; Devonian-Silurian	Pool Code 97869
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Additional Well Information

¹¹ Work Type N	¹² Well Type SWD	¹³ Cable/Rotary R	¹⁴ Lease Type Private	¹⁵ Ground Level Elevation 3,531'
¹⁶ Multiple N	¹⁷ Proposed Depth 16,263'	¹⁸ Formation Silurian-Devonian	¹⁹ Contractor TBD	²⁰ Spud Date ASAP
Depth to Ground water 239'		Distance from nearest fresh water well 3,282'		Distance to nearest surface water >1 mile

☒ We will be using a closed-loop system in lieu of lined pits**²¹ Proposed Casing and Cement Program**

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surface	26"	20"	106.5 lb/ft	1,385'	953	Surface
Intermediate 1	18.125"	16"	109 lb/ft	2,844'	1,357	Surface
Intermediate 2	14.75"	13.375"	72 lb/ft	4,932	1,048	Surface
Production	12.25"	9.625"	53.5 lb/ft	10,825'	2,668	Surface
Liner	8.5"	7.625"	39 lb/ft	10,625' - 14,463'	422	10,625'
Tubing		5.5" & 5"	20 lb/ft & 18 lb/ft	0'-10,425' & 10,425'-14,413'	N/A	

Casing/Cement Program: Additional Comments

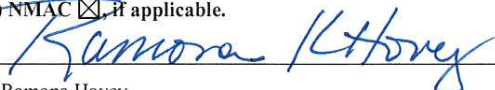
See attached schematic.

²² Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Hydraulic/Blinds, Pipe	8,000 psi	10,000 psi	TBD - Schaffer/Cameron

²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief.I further certify that I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☒ if applicable.

Signature:



Printed name: Ramona Hovey

Title: Consulting Engineer

E-mail Address: ramona@lonquist.com

Date: December 9, 2019

Phone: 512-600-1777

OIL CONSERVATION DIVISION

Approved By:

Title:

Approved Date:

Expiration Date:

Conditions of Approval Attached

District I1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720District II811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720District III1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170District IV1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102

Revised August 1, 2011

Submit one copy to appropriate
District Office☐ AMENDED REPORT**WELL LOCATION AND ACREAGE DEDICATION PLAT**

¹ API Number	² Pool Code 97869	³ Pool Name DEVONIAN-SILURIAN
⁴ Property Code	⁵ Property Name RAGIN' RUTLEY SWD	⁶ Well Number 1
⁷ OGRID No. 371643	⁸ Operator Name SOLARIS WATER MIDSTREAM, LLC	⁹ Elevation 3,531'

¹⁰ Surface Location

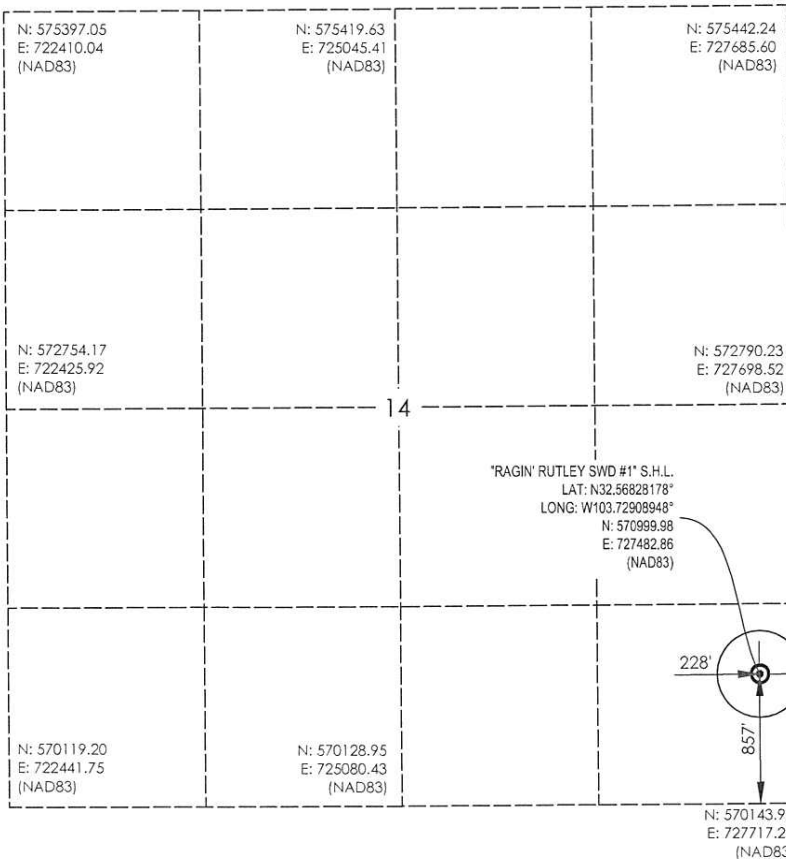
U.I. or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
16	14	20 S	32 E		857'	SOUTH	228'	EAST	LEA

¹¹ Bottom Hole Location If Different From Surface

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

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.

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

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.

Ramona K. Hovey 12/9/19
Signature Date

Ramona K. Hovey
Printed Name

ramona@longquist.com
E-mail Address

¹⁸ SURVEYOR CERTIFICATION

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

Shannon D. Longquist
Date of Survey 23783
Signature and Seal of Professional Surveyor

Shannon D. Longquist
10/30/2019
Certificate Number

LONQUIST & CO. LLC

PETROLEUM
ENGINEERS

ENERGY
ADVISORS

AUSTIN · HOUSTON · WICHITA · DENVER · CALGARY

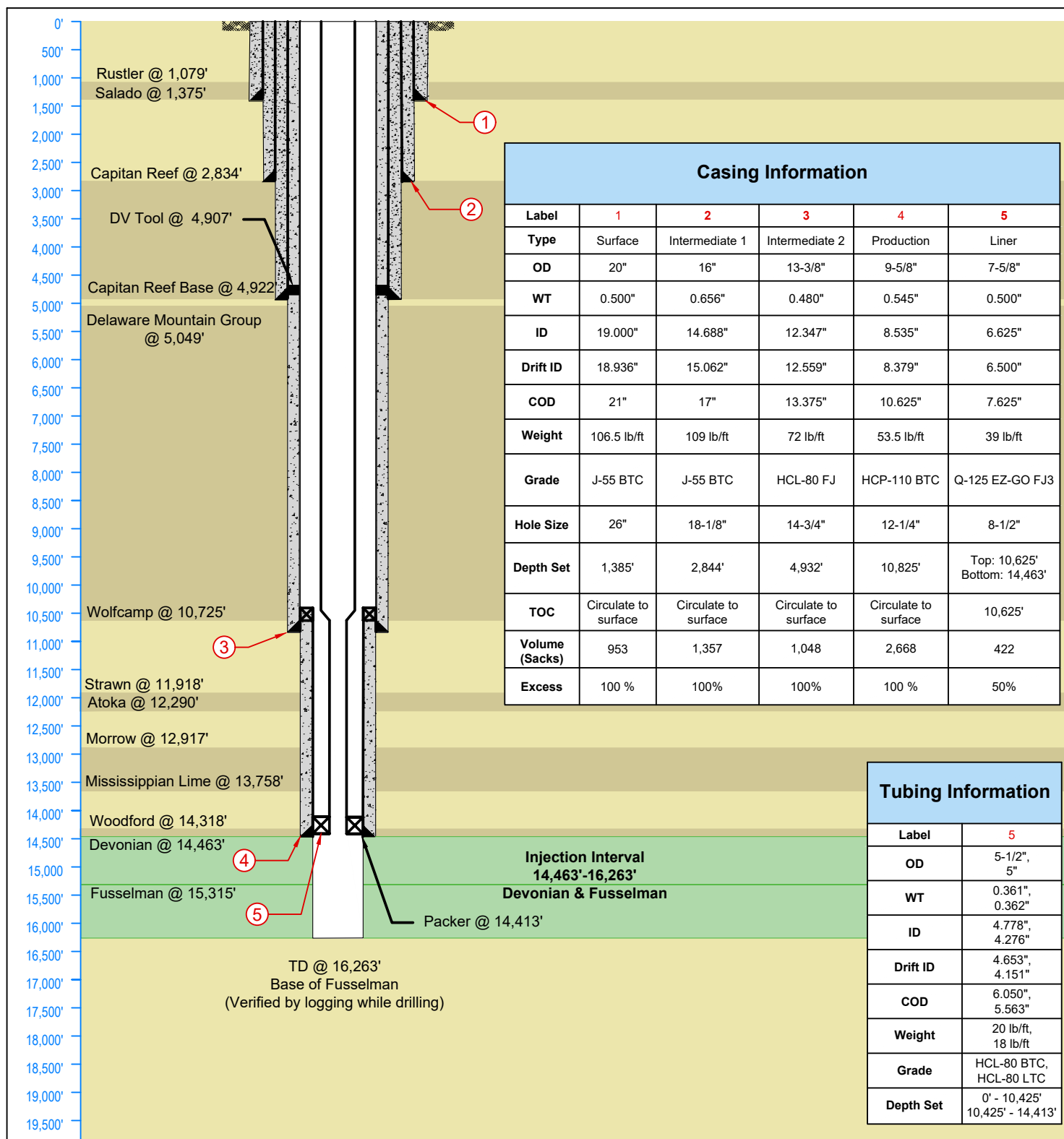
GEOLOGIC AFFIRMATION

I have examined available geologic and engineering data and have found no evidence of open faults or other hydrologic connection between the disposal interval and underground sources of drinking water.



Emily Olson
Geologist

Project: Solaris Water Midstream, LLC
 Ragin Rutley SWD No. 1



<div>LONQUIST & CO. LLC</div> <div><div>PETROLEUM ENGINEERS</div><div>ENERGY ADVISORS</div></div> <div><div>HOUSTON CALGARY</div><div>AUSTIN WICHITA DENVER</div></div>	Solaris Water Midstream, LLC		Ragin' Rutley SWD No. 1	
	Country: USA	State/Province: New Mexico	County/Parish: Lea	
	Location:	Site: 857' FSL, 228' FEL	Survey: S14-T20S-R32E	
	API No: NA	Field: Silurian-Devonian (Code: 97869)	Well Type/Status: SWD	
	Texas License F-9147	NMOCD District No: 2	Project No: 2241	Date: 12/05/2019
12912 Hill Country Blvd. Ste F-200 Austin, Texas 78738 Tel: 512.732.9812 Fax: 512.732.9816	Drawn: KAS	Reviewed: TFM	Approved: TFM	
	Rev No:	Notes:		