Revised Application
(Surface Relocation)
September 4, 2019

LONQUIST & CO. LLC
PETROLEUM ENGINEERS | ENERGY ADVISORS
AUSTIN · HOUSTON · WICHITA · DENVER · CALGARY

September 4, 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: TEXAS RANGER SWD NO. 1 AUTHORIZATION TO INJECT
AMENDED SURFACE CASING CEMENTING PROGRAM AND 1-MILE AOR
SOLARIS WATER MIDSTREAM, LLC

To Whom It May Concern:

The proposed Texas Ranger SWD No. 1 well location has been relocated from Lot 16 to Lot 9 within Section 06-T21S-R27E. The new location is shown in the attached C-102. In addition, the cementing program of the surface casing has been revised to decrease the probability of future migration of fluids due to improper placement of cement and to protect against impact to Underground Sources of Drinking Water (USDW). Revisions to the surface casing cementing program were made to address the Oil Conservation Division's concerns raised in their Pre-Hearing Statement made for Case No. 20474. Supporting technical documentation of the cementing equipment and blend are also provided in this package.

The 1-Mile AOR evaluated for offset wellbores penetrating the injection formation and to determine notice parties as part of the C-108 Application has been updated for the new location. The revised maps and list are attached. Relocation of the proposed wellbore resulted no additional notice parties. The 1-Mile AOR remains void of wellbores penetrating the injection formation.

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

Regards,

Ramona K. Hovey

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

(512) 600-1777
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 ___X___Disposal _____Storage
Application qualifies for administrative approval? ___X___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 ___X___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: Ramona L Hovey DATE: 9/3/2019

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: Texas Ranger SWD No. 1

WELL LOCATION:	2,990' FNL 344' FEL	LOT 9	6	21S	27E
	FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 26"

Cemented with: 2,130 sx.

Top of Cement: surface

Casing Size: 20"

or _____ ft^3

Method Determined: circulation

Intermediate Casing

Hole Size: 14.750"

Cemented with: 515 sx.

Top of Cement: surface

Casing Size: 13.375"

or _____ ft^3

Method Determined: circulation

Production Casing

Hole Size: 12.250"

Cemented with: 2,664 sx.

Top of Cement: surface

Casing Size: 9.625"

or _____ ft^3

Method Determined: circulation

Liner

Hole Size: 8.500"

Cemented with: 596 sx.

Top of Cement: 8,483'

Total Depth: 14,133'

Casing Size: 7.625"

or _____ ft^3

Method Determined: calculation

Injection Interval

12,333 feet to 14,133 feet

(Open Hole)

Side 2

INJECTION WELL DATA SHEET

Tubing Size: 5.5", 20 lb/ft, HCL-80, BTC from 0' – 8,678' and 5", 18 lb/ft, HCL-80, LTC from 8,678'-12,283'
Lining Material: Duoline

Type of Packer: 7-5/8"" X 5-1/2" Permanent Packer with High Temp Elastomer and Full Inconel 925 trim

Packer Setting Depth: 12,283'

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,

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:

   Bone Spring: 4,443'
   Wolfcamp: 8,583'
   Strawn: 10,080'
   Morrow: 10,738'

Solaris Water Midstream, LLC

Texas Ranger SWD No. 1

FORM C-108 Supplemental Information

III. Well Data

A. Wellbore Information

1.

Well information	
Lease Name	Texas Ranger SWD
Well No.	1
Location	S-6 T-21S R-27E
Footage Location	2,990’ FNL & 344’ FEL

2.

a. Wellbore Description

Casing Information				
Type	Surface	Intermediate	Production	Liner
OD	20”	13.375”	9.625”	7.625”
WT	0.438”	0.48”	0.545”	0.500”
ID	19.124”	12.415”	8.535”	6.625”
Drift ID	18.936”	12.259”	8.379”	6.500”
COD	21”	13.375”	10.625”	7.625”
Weight	94 lb/ft	68 lb/ft	53.5 lb/ft	39 lb/ft
Grade	J-55 STC	L-80 BTC	HCP-110 BTC	Q-125 EZ-GO FJ3
Hole Size	26”	14.75"	12.25”	8.5”
Depth Set	660’	2,700’	8,683’	8,483’-12,333’

b. Cementing Program

To address the New Mexico Oil Conservation Division's Pre-Hearing Statement regarding the Texas Ranger, Case No. 20474, the amended cement program was developed in order to provide a more suitable plan for drilling the surface hole of the proposed well. The installation of this proposed cement program aims to decrease the probability of future migration of fluids due to improper placement of cement and to protect against impact to Underground Sources of Drinking Water (USDW).

The surface hole will be drilled with a 26" to 660' and set with 20", 94 lb/ft, J-55 STC surface casing. If loss of circulation is occurred while drilling, LCM pills of up to 80-100 lbs/bbl will be spotted/circulated as necessary. If circulation is unable to be regained, an open hole thixotropic cement plug will be considered as use for LCM and drilling will resume.

A 20" rigid body centralizer and 20" cementing baskets will be added to the body of the casing in order to ensure proper standoff from the bore hole and minimize cement "fall back" while cementing. A cement slurry followed by a second lead with increased quantities of LCM material thereafter. The remaining details of the cement program can be found below:

Casing String	Surface	Intermediate	Production	Liner
1st Lead Cement	Thixotropic			
1st Lead Cement Volume (sacks)	685			
1st Lead Cement Density (ft3/sack)	12.8			
Lead Cement	93:7 Class C Premium	HALCEM™	HALCEM™	NeoCem™
Lead Cement Volume (sacks)	550	515	Stage 1: 1,176 Stage 2: 1,488	596
Lead Cement Density (ft3/sack)	12.4	1.685	Stage 1: 1.232 Stage 2: 1.713	1.418
Tail Cement	100 Class C Premium	-	-	-
Tail Cement Volume (sacks)	895	-	-	-
Tail Cement Density (ft3/sack)	14.8	-	-	-
Cement Excess	150%	100%	100%	50%
Total Sacks	2,130	515	2,664	596
TOC	Surface	Surface	Surface	8,483'
Method	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	0-8,283’ 8,283’-12,283’

Tubing will be lined with Duoline.

4. Packer Description

7-5/8” x 5-1/2” TCPC Permanent Packer with High Temp Elastomer and Full Inconel 925 trim

B. Completion Information

1. Injection Formation: Devonian

2. Gross Injection Interval: 12,333’-14,133’

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
Bone Spring	4,443’
Wolfcamp	8,583’
Strawn	10,080’
Morrow	10,738’

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: 1,850 PSI (surface pressure)
   Maximum Injection Pressure: 2,467 PSI (surface pressure)

4. The injection fluid is to be locally produced water. It is expected that the source water will predominantly be from the Artesia, Bone Spring, and Morrow formations. Attached are produced water sample analyses taken from the closest wells that feature samples from the Artesia, Bone Spring, Delaware, Capitan, Morrow, San Andreas, Tansill, 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
Yates	308’
Capitan Reef	682’
Capitan Reef Base	2,680’
Bell Canyon	2,808’
Cherry Canyon	3,473’
Brushy Canyon	3,828’
Bone Spring	4,443’
Bone Spring 1st Sand	6,323’
Bone Spring 2nd Sand	7,023’
Bone Spring 3rd Sand	8,378’
Wolfcamp	8,583’
Strawn	10,080’
Morrow	10,738’
Barnett	11,144’
Devonian	12,333’

B. Underground Sources of Drinking Water

Nineteen (19) water wells exist within one-mile of the proposed well after the location change of the Texas Ranger. Across the area, fresh water wells are usually drilled at an average depth of 273’. Average water depth in this region is approximately 200’. The Rustler is known to exist in this general area and may also be another USDW and will be protected.

IX. Proposed Stimulation Program

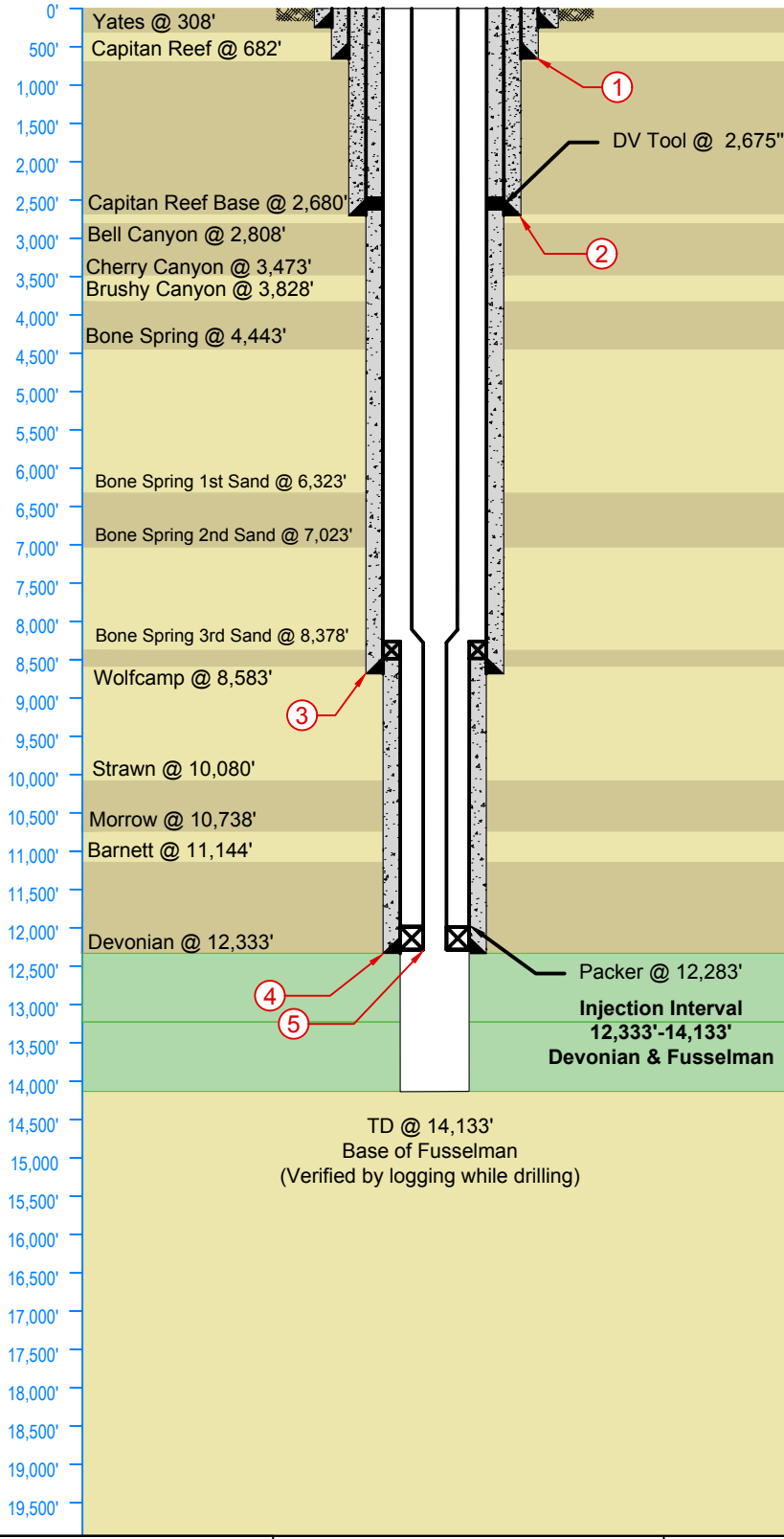
50,000 gallon acid job

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 nineteen (19) water wells that exist within one-mile of the well location. Samples from the nearest available wells has been obtained and a chemical analysis is attached in this application. A Water Right Summary from the New Mexico Office of the State Engineer is attached for the nineteen (19) water wells within a 1-mile radius.



Casing Information

Label	1	2	3	4
Type	Surface	Intermediate	Production	Liner
OD	20"	13-3/8"	9-5/8"	7-5/8"
WT	0.438"	0.480"	0.545"	0.500"
ID	19.124"	12.415"	8.535"	6.625"
Drift ID	18.936"	12.259"	8.379"	6.500"
COD	21"	13.375"	10.625"	7.625"
Weight	94 lb/ft	68 lb/ft	53.5 lb/ft	39 lb/ft
Grade	J-55 STC	L-80 BTC	HCP-110 BTC	Q-125 EZ-GO FJ3
Hole Size	26"	14-3/4"	12-1/4"	8-1/2"
Depth Set	660'	2,700'	8,683'	Top: 8,483" Bottom: 12,333'
TOC	Circulate to surface	Circulate to surface	Circulate to surface	8,483'
Volume	2130 sacks	515 sacks	2,664 sacks	596 sacks
Excess	150 %	100%	100%	50%

Tubing Information

Label	6
OD	5-1/2", 5"
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' - 8,283' 8,283' - 12,283'

LONQUIST & CO. LLC
PETROLEUM ENGINEERS | ENERGY ADVISORS
HOUSTON | CALGARY
AUSTIN | WICHITA | DENVER

Texas License F-9147

12912 Hill Country Blvd. Ste F-200
Austin, Texas 78738
Tel: 512.732.9812
Fax: 512.732.9816

Solaris Water Midstream, LLC

Texas Ranger SWD No. 1

Country: USA	**State/Province:** New Mexico	**County/Parish:** Eddy
Location:	**Site:** 200' FSL, 1,580' FEL	**Survey:** S9-T21S-R27E
API No: NA	**Field:** Silurian-Devonian (Code: 97869)	**Well Type/Status:** SWD
NMOCD District No: 2	**Project No:** 1917	**Date:** 8/22/2019
Drawn: TFM	**Reviewed:**	**Approved:**
Rev No: 3	**Notes:**	

DISTRICT I
1625 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 Rd., 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
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

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

Form C-102
Revised August 1, 2011

Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name

Property Code	Property Name	Well Number
	TEXAS RANGER SWD	1

OGRID No.	Operator Name	Elevation
	SOLARIS WATER MIDSTREAM	3240'

Surface Location

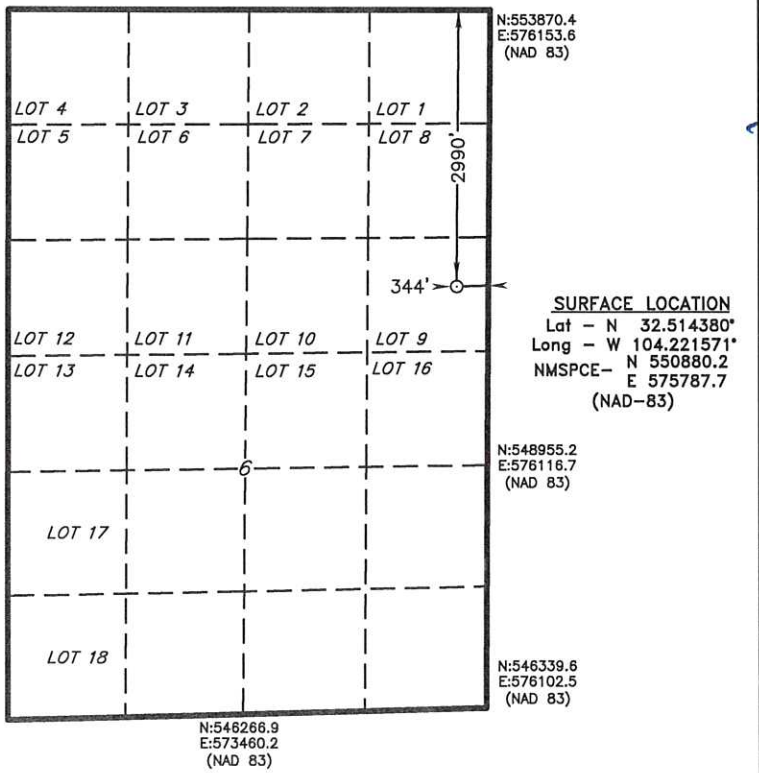
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
LOT 9	6	21 S	27 E		2990	NORTH	344	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres	Joint or Infill	Consolidation Code	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



SURFACE LOCATION
Lat - N 32.514380°
Long - W 104.221571°
NMSPCE- N 550880.2
E 575787.7
(NAD-83)

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 Hovey 9/4/19
Signature Date

RAMONA HOVEY
Printed Name

ramona@longwist.com
Email Address

SURVEYOR CERTIFICATION

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

AUGUST 2, 2019
Date Surveyed

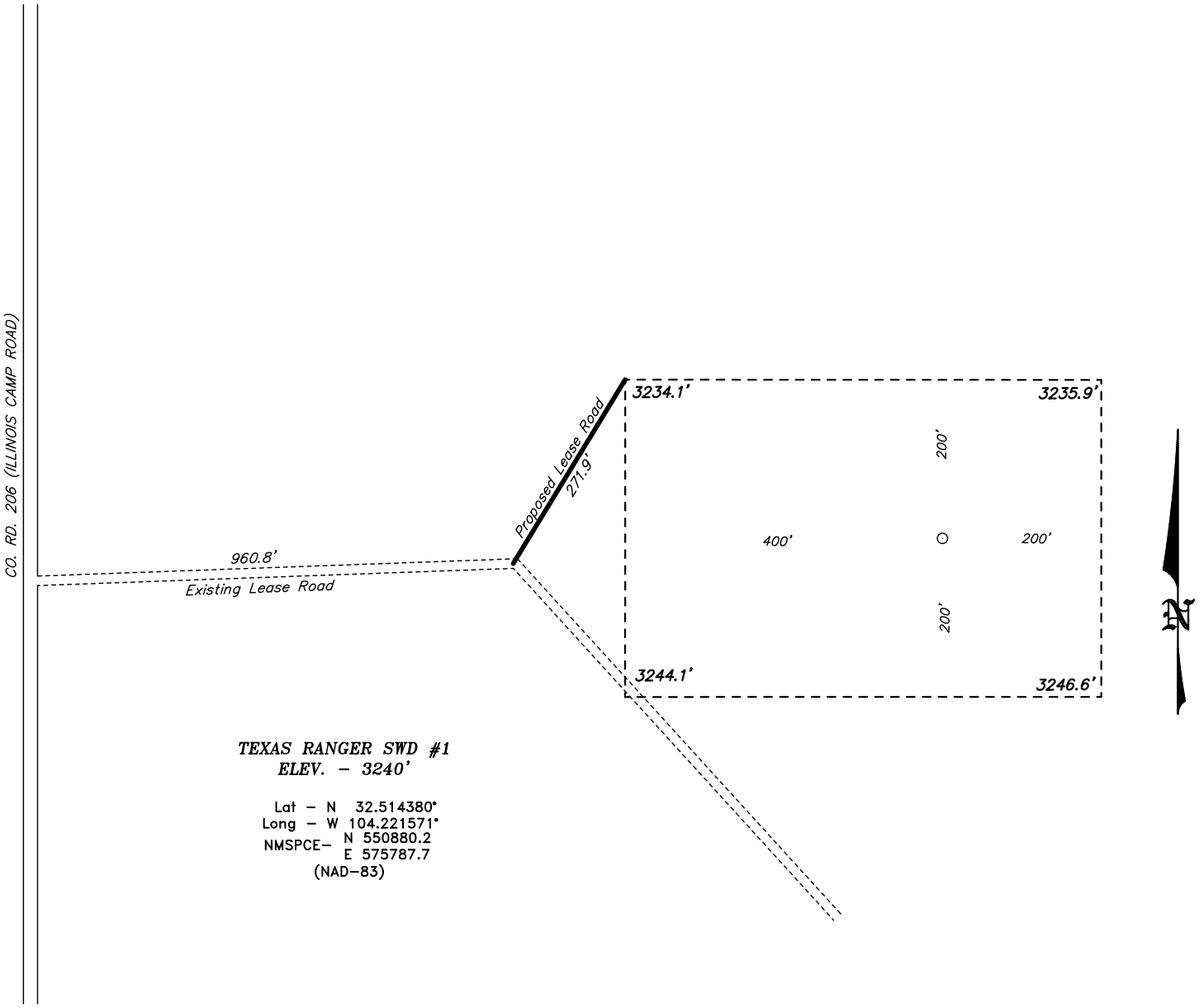
Signature & Seal of Professional Surveyor

GARY L. JONES
NEW MEXICO
7977
REGISTERED PROFESSIONAL LAND SURVEYOR

Certificate No. Gary L. Jones 7977
BASIN SURVEYS

0' 1000' 2000' 3000' 4000'
SCALE: 1" = 2000'
WO Num.: 34766

SECTION 6 TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



TEXAS RANGER SWD #1
ELEV. – 3240'

Lat – N 32.514380°
Long – W 104.221571°
NMSPCE– N 550880.2
E 575787.7
(NAD–83)

CARLSBAD, NM IS ±6 MILES TO THE SOUTH OF LOCATION.

200 0 200 400 FEET
SCALE: 1" = 200'

DIRECTIONS TO LOCATION:
FROM THE JUNCTION OF CO. RD, 206 (ILLINOIS CAMP ROAD) AND CO. RD. 600 (RAINS ROAD), GO NORTH ON ILLINOIS CAMP ROAD FOR APPROX. 1.25 MILES TO EXISTING LEASE ROAD. THEN EAST ON LEASE ROAD FOR 0.2 MILES TO PROPOSED LEASE ROAD.

SOLARIS WATER MIDSTREAM

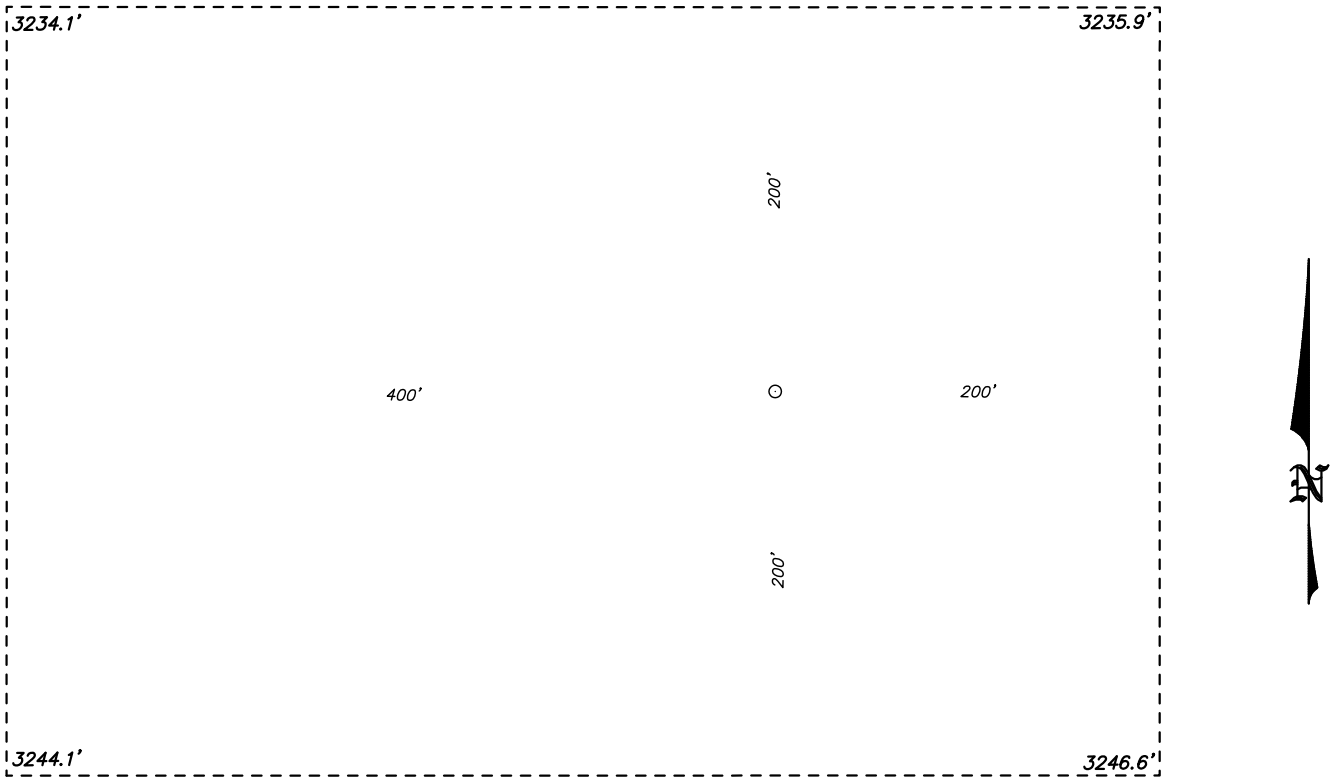
REF: TEXAS RANGER SWD 1 / WELL PAD TOPO

THE TEXAS RANGER SWD 1 LOCATED 2990' FROM THE NORTH LINE AND 344' FROM THE EAST LINE OF SECTION 6, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

basin surveys
focused on excellence in the oilfield
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393–7316 – Office
(575) 392–2206 – Fax
basinsurveys.com

W.O. Number: 34766	Drawn By: K. GOAD	Date: 08–09–2019	Survey Date: 08–02–2019	Sheet 1 of 1 Sheets

SECTION 6 TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



100 0 100 200 FEET

SCALE: 1" = 100'

SOLARIS WATER MIDSTREAM

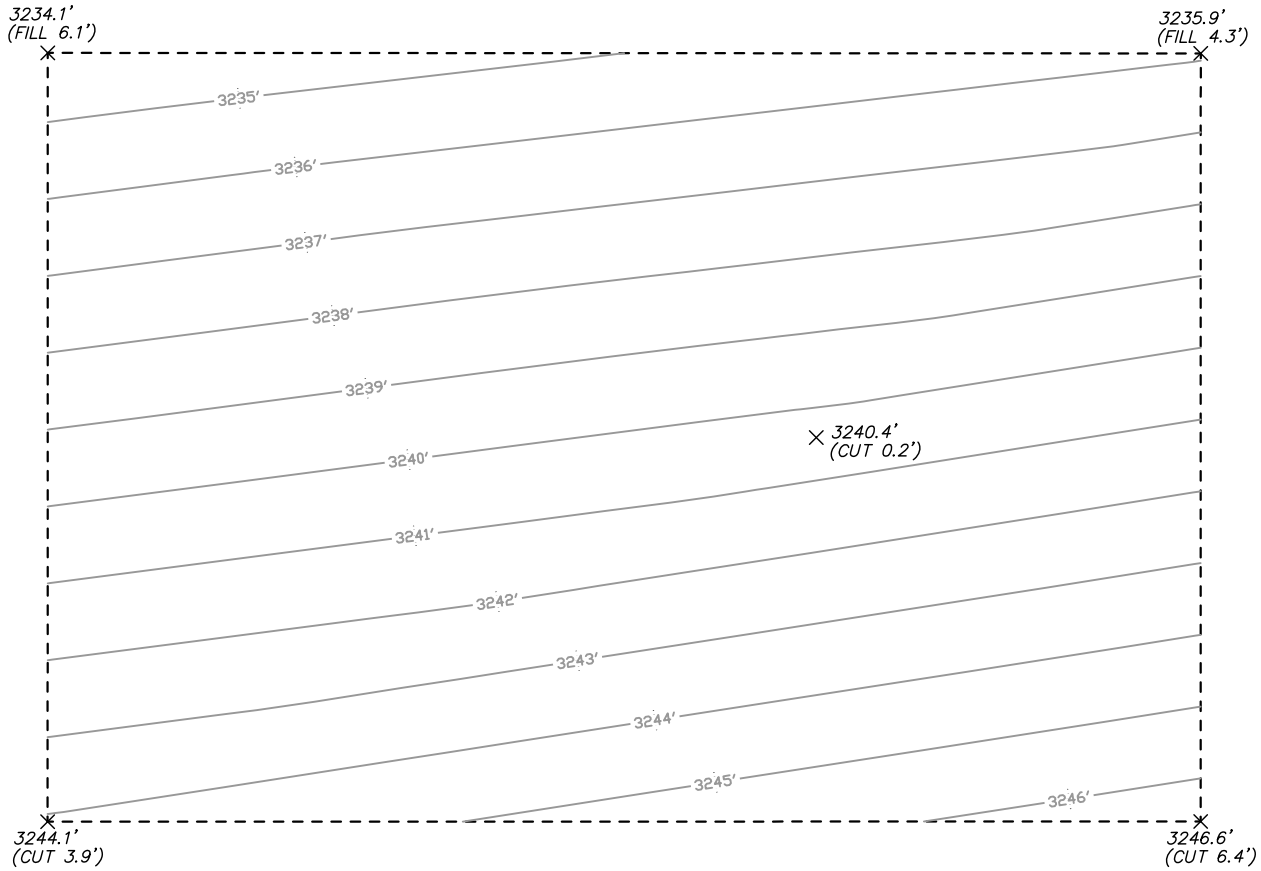
REF: TEXAS RANGER SWD 1 / WELL• PAD TOPO

THE TEXAS RANGER SWD 1 LOCATED 2990' FROM THE NORTH LINE AND 344' FROM THE EAST LINE OF SECTION 6, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

basin surveys
focused on excellence in the oilfield
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 – Office
(575) 392-2206 – Fax
basinsurveys.com

W.O. Number: 34766	Drawn By: K. GOAD	Date: 08-09-2019	Survey Date: 08-02-2019	Sheet 1 of 1 Sheets

SECTION 6 TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



100 0 100 200 FEET

SCALE: 1" = 100'

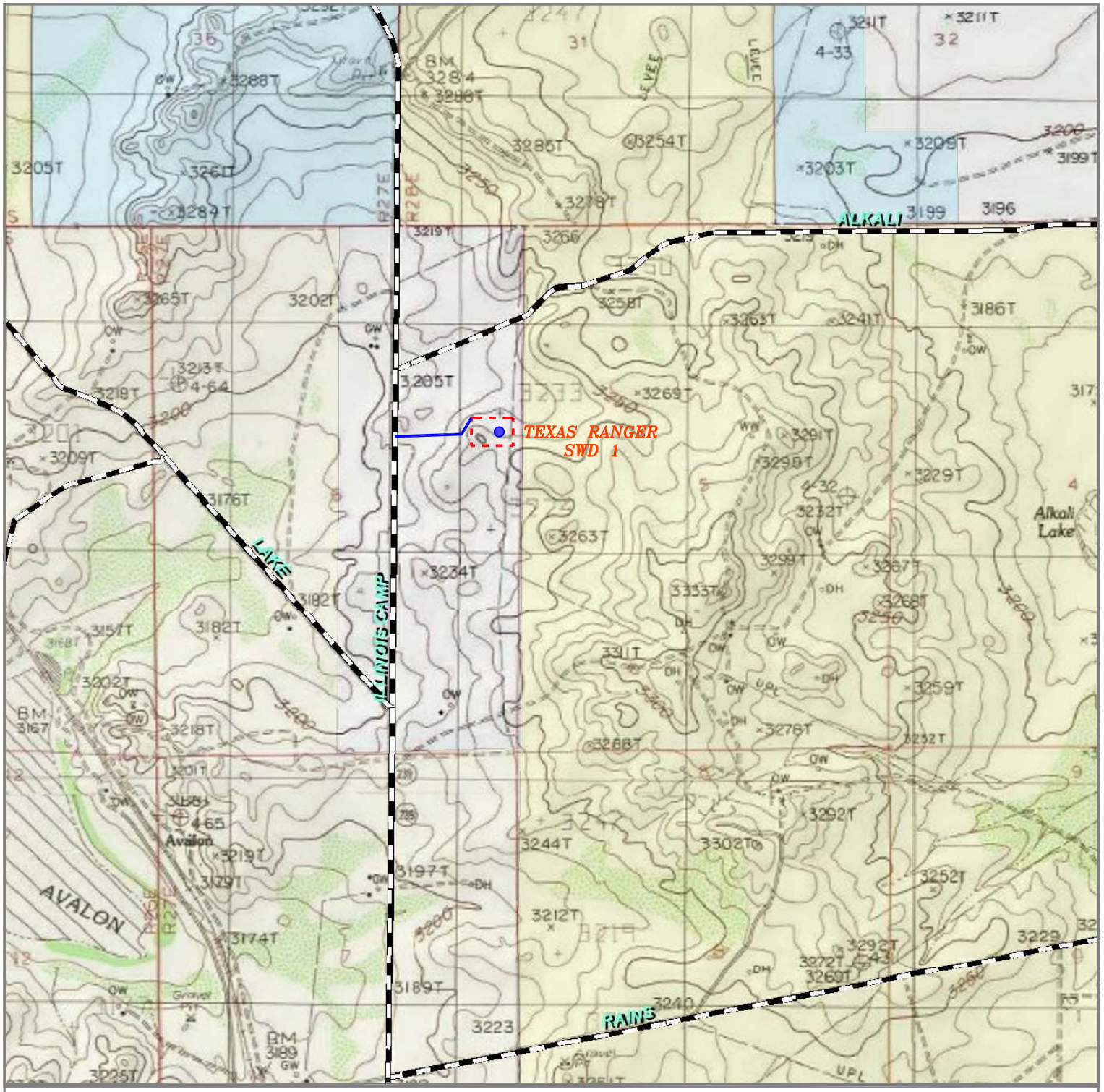
SOLARIS WATER MIDSTREAM

REF: TEXAS RANGER SWD 1 / CUT & FILL

THE TEXAS RANGER SWD 1 LOCATED 2990' FROM THE NORTH LINE AND 344' FROM THE EAST LINE OF SECTION 6, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

basin surveys
focused on excellence in the oilfield
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 – Office
(575) 392-2206 – Fax
basinsurveys.com

W.O. Number: 34766	Drawn By: K. GOAD	Date: 08-09-2019	Survey Date: 08-02-2019	Sheet 1 of 1 Sheets



TEXAS RANGER SWD 1

Located 2990' FNL & 344' FEL
Section 6, Township 21 South, Range 27 East,
N.M.P.M., Eddy County, New Mexico.

basin surveys
focused on excellence in the oilfield
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 – Office
(575) 392-2206 – Fax
basinsurveys.com

0' 1000' 2000' 3000' 4000'
SCALE: 1" = 2000'

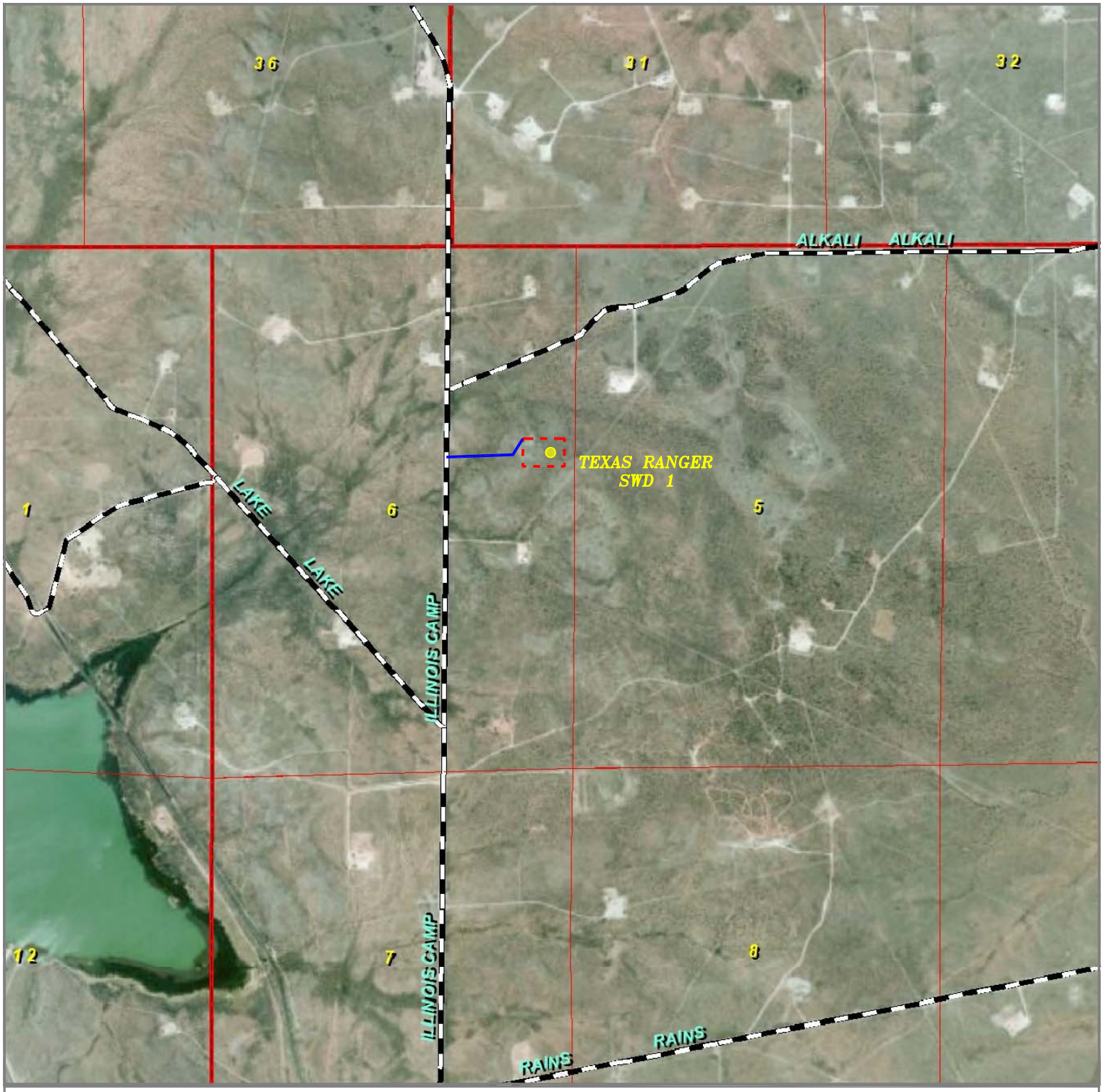
W.O. Number: KJG – 34766

Survey Date: 08-02-2019

YELLOW TINT – USA LAND
BLUE TINT – STATE LAND
NATURAL COLOR – FEE LAND

N

SOLARIS WATER MIDSTREAM



TEXAS RANGER SWD 1

Located 2990' FNL & 344' FEL
Section 6, Township 21 South, Range 27 East,
N.M.P.M., Eddy County, New Mexico.

basin surveys
focused on excellence in the oilfield

P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 – Office
(575) 392-2206 – Fax
basinsurveys.com

0' 1000' 2000' 3000' 4000'
SCALE: 1" = 2000'

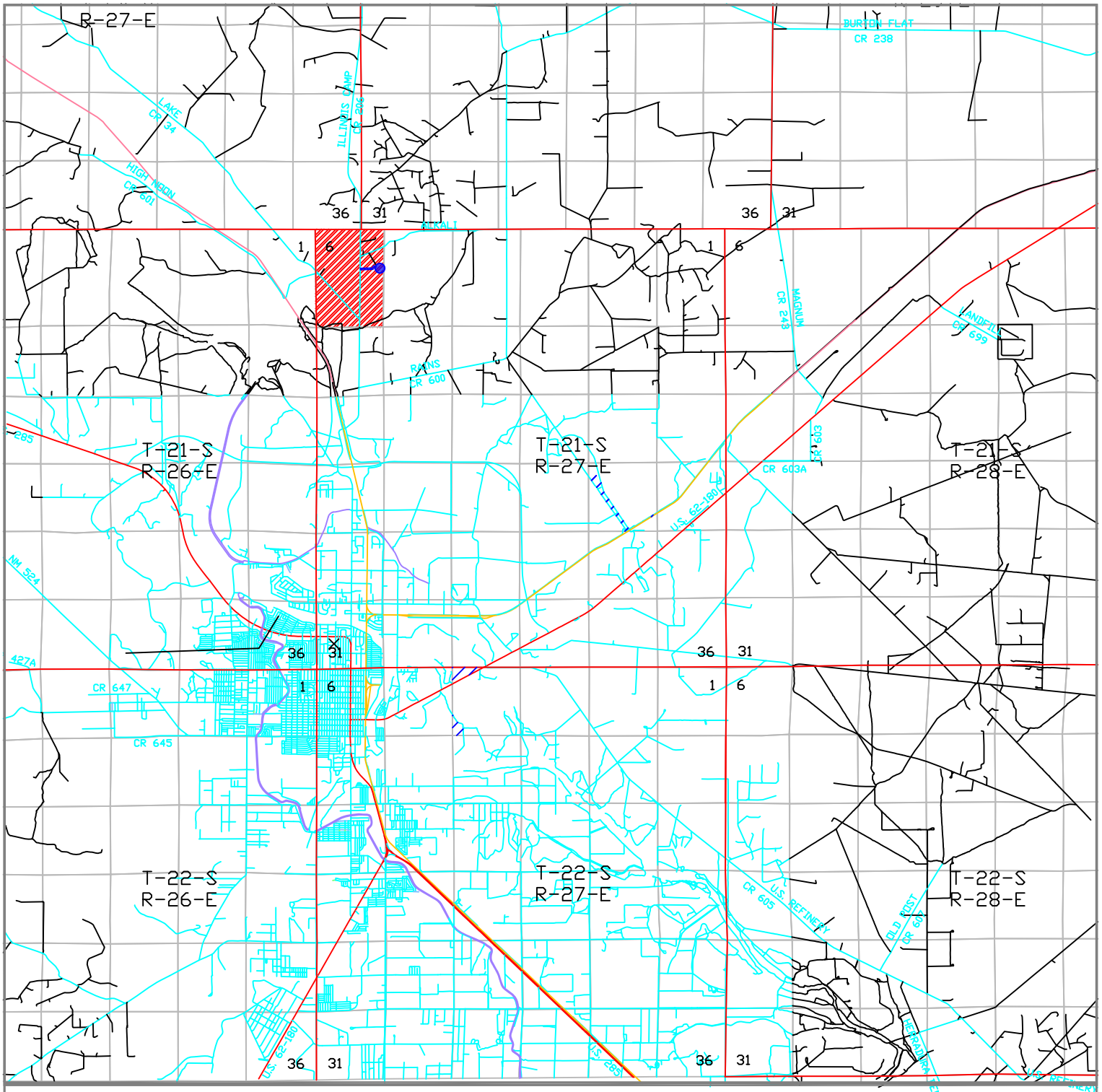
W.O. Number: KJG – 34766

Survey Date: 08-02-2019

YELLOW TINT – USA LAND
BLUE TINT – STATE LAND
NATURAL COLOR – FEE LAND

N

SOLARIS WATER MIDSTREAM



TEXAS RANGER SWD 1

Located 2990' FNL & 344' FEL
Section 6, Township 21 South, Range 27 East,
N.M.P.M., Eddy County, New Mexico.

basin surveys
focused on excellence in the oilfield
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 – Office
(575) 392-2206 – Fax
basinsurveys.com

0 1 MI 2 MI 3 MI 4 MI
SCALE: 1" = 2 MILES

W.O. Number: KJG – 34766

Survey Date: 08-02-2019

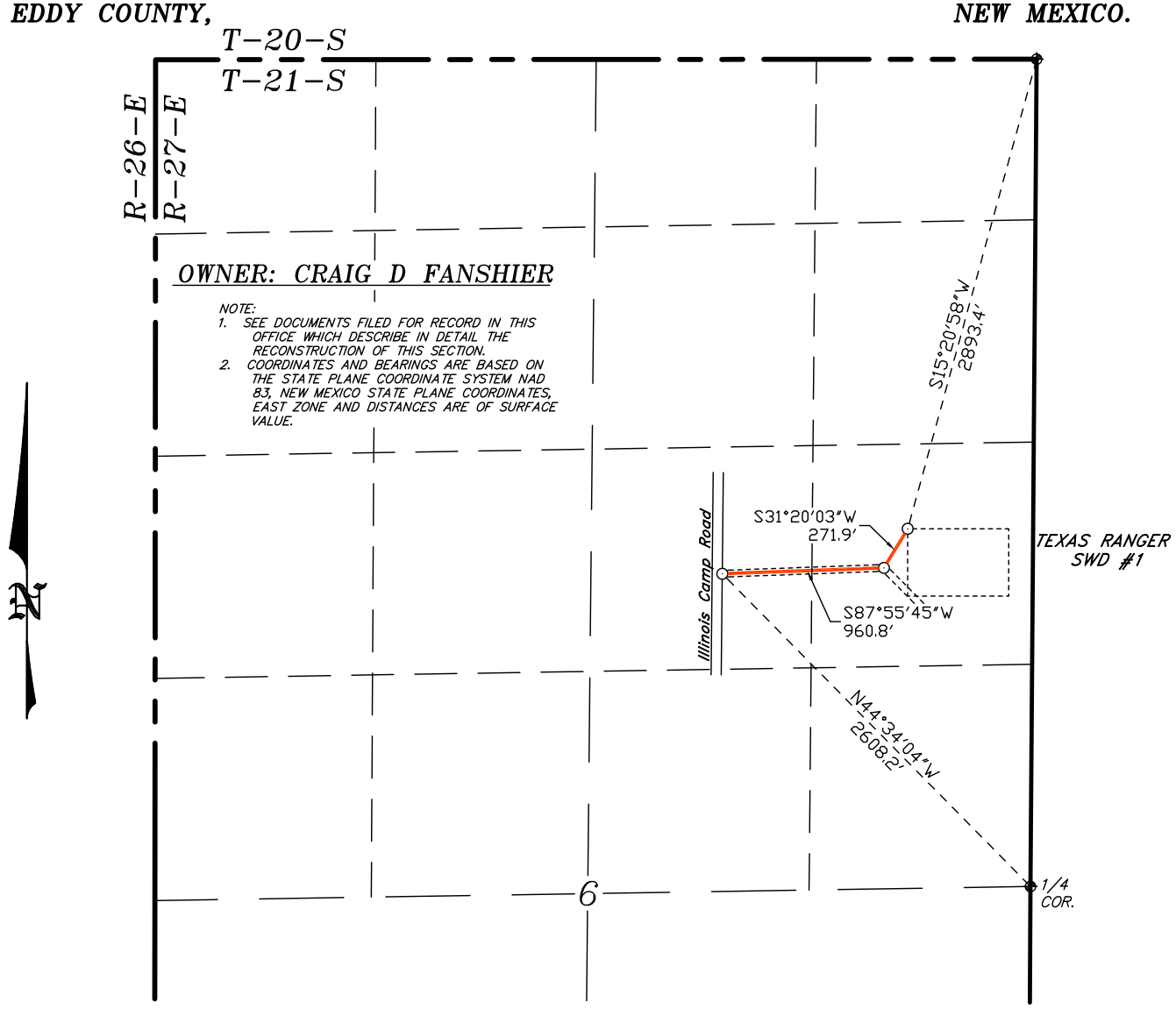
YELLOW TINT – USA LAND
BLUE TINT – STATE LAND
NATURAL COLOR – FEE LAND

N

SOLARIS WATER MIDSTREAM

SECTION 6, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.,

EDDY COUNTY, NEW MEXICO.



LEGAL DESCRIPTION

A STRIP OF LAND 20.0 FEET WIDE, LOCATED IN SECTION 6, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING 10.0 FEET LEFT AND RIGHT OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY.

BEGINNING AT A POINT WHICH LIES S.15°20'58"W., 2893.4 FEET FROM THE NORTHEAST CORNER OF SAID SECTION 6; THENCE S.31°20'03"W., 271.9 FEET; THENCE S.87°55'45"W., 960.8 FEET TO THE END OF THIS LINE WHICH LIES N.44°34'04"W., 2608.2 FEET FROM THE EAST QUARTER CORNER OF SAID SECTION 6. SAID STRIP OF LAND BEING 1232.7 FEET OR 74.71 RODS IN LENGTH.

1000 0 1000 2000 FEET

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.

STATE OF NEW MEXICO — GARY L. JONES — 5074 — PROFESSIONAL SURVEYOR

GARY L. JONES, N.M. P.S. No. 7977
TEXAS P.S. No. 5074
TEXAS FIRM No. 10119700

basin surveys
focused on excellence in the oilfield

P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241

(575) 393-7316 – Office
(575) 392-2206 – Fax
basinsurveys.com

SOLARIS WATER MIDSTREAM, LLC

REF: LEASE ROAD TO THE TEXAS RANGER SWD #1

A LEASE ROAD CROSSING FEE LAND IN
SECTION 6, TOWNSHIP 21 SOUTH, RANGE 27 EAST,
N.M.P.M., EDDY COUNTY, NEW MEXICO.

W.O. Number: 34766	Drawn By: K. GOAD	Date: 08-09-2019	Survey Date: 08-02-2019	Sheet 1 of 1 Sheets

Solaris Midstream

Submitted by:
Jared Booker
jbooker@compasswellservices.com
432-561-5970
8/22/2019

Prepared for:
Mr. Stephen Martinez
Operations Manager

SOLARIS MIDSTREAM - TEXAS RANGER SWD #1 - SURFACE - VERSION 2

WELL BORE DETAILS

Hole Size

Size	Depth (ft)	
26	660	TMD
	660	TVD

Casing

Size	Depth (ft)	Grade	Weight	Thread
20	660	J-55	94	STC

Formation

Mud Weight/Type	BH Temp	
8.5 ppg WBM	87°F	BHST
	81°F	BHCT

compass Cementing

JOB AND FLUID DETAILS

Job Details

Pump 20 bbls of gel spacer with 3 lb/bbl of Plexfiber A

Pump 40 bbls of gel spacer with 20 lb/bbl of CTB-15

Mix and pump 685 sks of thixotropic lead cement at 14.5 ppg, yielding 1,404.3 cu.ft. (250.1 bbls)

Mix and pump 550 sks of lead cement at 12.4 ppg, yielding 1,248.5 cu.ft. (222.4 bbls)

Mix and pump 895 sks of tail cement at 14.8 ppg, yielding 1,208.3 cu.ft. (215.2 bbls)

Drop top rubber plug and displace with 323 bbls (actual volume and fluid type determined on location)

Slurry Properties	Yield	Density	Mix Water
Thixotropic Lead	2.05	12.8	11.43
Lead Cement	2.27	12.4	12.54
Tail Cement	1.35	14.8	6.36

Thixotropic Lead Slurry - 685 sks (0% Excess) TOC n/a	
100 Class C Premium	
C-45 Econolite	1.50 %
Calcium Chloride	1.00 %
Gyp Seal	5.00 #/sk

Lead Cement Slurry - 550 sks (150% Excess) TOC Surface	
93:7 Class C Premium:CPO-18	
Premium Gel (Bentonite)	1.50 %
Salt	1.05 #/sk
C-51 Suspension Agent	0.10 %
C-45 Econolite	0.75 %
STE	4.00 %
CTB-15 LCM	6.00 #/sk
C-503P Defoamer	0.30 %

Tail Cement Slurry - 895 sks (150% Excess) TOC 330	
100 Class C Premium	
C-45 Econolite	0.10 %
Calcium Chloride	2.00 %

COST ESTIMATE

Description	Quantity		Units	Gross Amount	Net Amount
Pump Charge 0' to 1000'	1	$2,650.00	each	$2,650.00	$1,007.00
Pump Charge - Additional Hours	-	$1,700.00	hour	$0.00	$0.00
Reserve Pump Truck	1	$9,640.00	each	$9,640.00	$3,663.20
Reserve Pump Truck after 10 hrs	-	$1,700.00	hour	$0.00	$0.00
HV Mileage	300	$11.40	mile	$3,420.00	$1,299.00
LV Mileage	450	$6.74	mile	$3,033.00	$1,152.00
Field Storage Bin delivery	450	$11.40	mile	$5,130.00	$1,948.50
Field Storage Bin - 3 Days	3	$1,700.00	each	$5,100.00	$1,938.00
20" Plug Container	1	$15,275.00	ea	$15,275.00	$5,804.50
20" Top Rubber Plug	1	$4,050.00	ea	$4,050.00	$1,539.00
Data Acquisition	1	$1,130.00	each	$1,130.00	$429.40
Thickening Time Test, Field Blend	1	$2,180.00	each	$2,180.00	$828.40
Centrifugal Pump	1	$1,130.00	each	$1,130.00	$429.40
Circulating Equipment	-	$6,000.00	each	$0.00	$0.00
Derrick Charge	-	$1,000.00	each	$0.00	$0.00
Subtotal for Pumping & Equipment Charges				$52,738.00	$20,038.40
Class C Premium	2,092	$35.92	sacks	$75,144.64	$28,555.80
CPO-18	39	$20.75	sacks	$809.25	$307.71
Premium Gel (Bentonite)	764	$0.98	lb	$748.72	$282.68
Gyp Seal	3,425	$0.72	lb	$2,466.00	$924.75
C-503P Defoamer	153	$5.93	lb	$907.29	$344.25
C-51 Suspension Agent	51	$38.04	lb	$1,940.04	$737.46
Calcium Chloride	2,327	$2.11	lb	$4,909.97	$1,861.60
CTB-15 LCM	3,300	$5.40	lb	$17,820.00	$6,765.00
C-45 Econolite	1,432	$3.34	lb	$4,782.88	$1,818.64
Salt	578	$0.50	lb	$289.00	$109.82
STE	2,038	$1.29	lb	$2,629.02	$998.62
Citric Acid	6	$13.94	lb	$83.64	$31.80
C-51 Suspension Agent	120	$38.04	lb	$4,564.80	$1,735.20
Soda Ash - pH Buffer	150	$1.50	lb	$225.00	$85.50
Plex Fiber A - Loss Circulation Material	60	$34.22	lb	$2,053.20	$780.00
CTB-15 LCM	800	$5.40	lb	$4,320.00	$1,640.00
C-503L Defoamer	20	$120.42	gal	$2,408.40	$915.20
Sugar	500	$4.20	lb	$2,100.00	$800.00
Materials Handling	2,393	$3.75	CF	$8,973.75	$3,410.03
Drayage	319,650	$0.09	sacks x miles	$28,768.50	$10,932.03
Subtotal for Materials Charges				$165,944.10	$63,036.09
Gross Price Subtotal					$218,682.10
Discount				62.0%	($135,607.62)
Pre-tax Total					**$83,074.49**

compass Cementing

DOWNHOLE PRODUCTS

Data Sheet

Econ-O-Glider®

20.000” Casing x 24.000” OD

Model Number
13H200Q
Part Number
13H200Q-24000-001

Product:

The ECON-O-GLIDER® is a pressed steel spiral blade centralizer that has been specifically designed to centralize casing being run in the less demanding vertical & intermediate wells, where positive standoff is required, and torque & drag reduction is not deemed a critical requirement.

Features:

- Positive stand-off spiral blade
- Maximum flow-by
- Blades tested to withstand 15-20 tons side loading

Dimensions		
Casing Size	20.000”	
OD	24.000	*Inches*
ID	20.250	*Inches*
Length	10.000	*Inches*
Specification		
Type	Solid Body, Slip On	
Material	EN 10025 S275 or Equivalent	
Blade Qty	6 x Spiral, Right Hand	
Unit Weight	20.000	*kg*
Manufacturing Process	Rolled, Welded & Pressed	
Performance Data		
Flow-by Area	193.200	*sq-in*
Friction Factor (CH)	0.30	
Friction Factor (OH)	0.40	

Options:

- **ECON-O-GLIDER ST (straight blade) option available**
- **Integral set screw option (ST Only)**
- **Size range from 2-7/8” through 30”**
- **Centralizer placement calculations**

DOWNHOLE PRODUCTS

Data Sheet

Cement Basket

20.000” Casing x 26.000” (27.756” OD)

Product:

The Baskets are constructed with thin overlapping high strength steel fins reinforced by spring steel ribs to provide both flexibility and fluid passage while maintaining the ability to help support the cement column. Installation of the baskets is simple, the basket is slid over the pin end, placed in the desired location on the joint and secured by means of an internal stop collar. As the cement is circulated, it will flow past the basket and up the annulus, due to the design once the cement is pumped past the tool it will aid with support which will in turn help reduce the hydrostatic weight of the cement column on the formation it was run to protect.

Features:

- Robust Construction
- Proven Design
- Simple installation

Dimensions			
Casing Size		**20.000”**	
OD	*max*	**27.756**	*inches*
ID	*min*	**20.275**	*inches*
Length		**27.560**	*inches*
Unit Weight		**25.250**	*kg*

SAP #	-
DRW Ref. #:	TBC

compass Well Services

Lab Analysis Report

10013 W County Rd 157
Midland, Tx 79706

Project No.	C1908045-3

Report Date	8/9/2019	MD	950
Requestor	Jared Booker	TVD	950
Analyst	MA/LC	Test T. (°F)	81
Client	Solaris Midstream	BHST (°F)	87
Well	Texas Ranger SWD 1	BHCT (°F)	81
County	Eddy	BHP (psi)	400
Job	Surface	Mud Weight (ppg)	8.7
Slurry	Lead	Blend Type	Pilot

Slurry Properties

Slurry Density (ppg)	Blend Yield (ft3/sk)
12.80	2.05

Slurry Composition

Component	Concentration	Unit	Lot #
Lehigh C	100.000	% of Base Material	Silo A
C-45	1.500	% BWOB	164836001
Calcium Chloride	1.000	% BWOB	2080119
GypSeal	5.000	lb/sk	031419S

Base Fluid	
Water Source	Water Req. (gal/sk)
Lab Tap	11.43

Comments

Project No.	C1908045-3

Rheology		
Temperature (°F)	80	81
Pressure (psi)	0	0
Condition Time (min)	0	30
RPM	Average	Average
300	56	75
200	53	67
100	49	61
60	48	55
30	46	53
6	32	21
3	26	19
10 sec gel (lbf/100ft2)		
10 min gel (lbf/100ft2)		
1 min stirring (lbf/100ft2)		
Rheology Model	Bingham	Bingham
PV (cP)	23.6	48.3
YP (lbf/100ft)	38.9	36.4
n' / K' (lbf-s^n/100ft2)		
		7.1

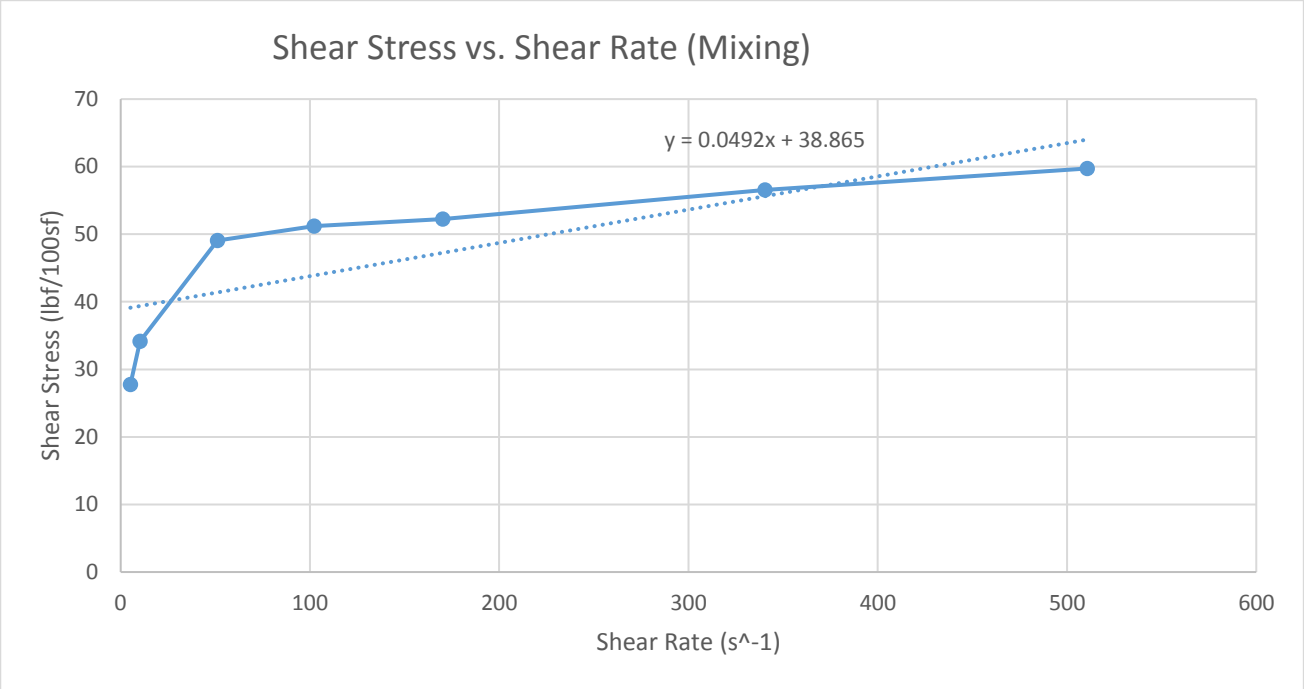
Thickening Time			
HPHT Unit Number	5	Initial	Final
Temperature (°F)		80	81
Pressure (psi)		400	400
Ramp Time (min)		1	5
Consistency (BC)		12	70
Time (hr:mm)		0:01	4:23
Batch Mixing			
Mixing Time (hr:min)			
Temperature (°F)			

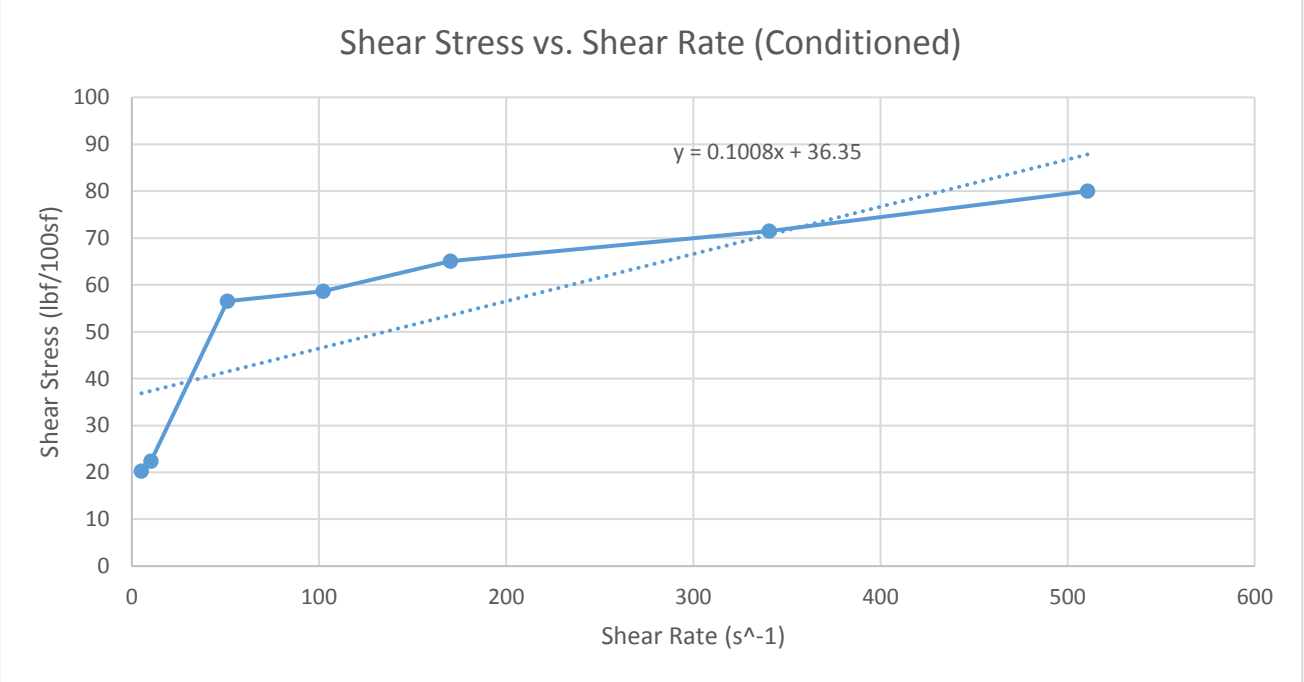
Fluid Loss	
Temperature (°F)	
Pressure (psi)	
Conditioning Time (min)	
Blow Out (Y/N)	
Test Time (min)	
API Fluid Loss (mL/30min)	

Free Fluid	
Conditioning Temp (°F)	81
Conditioning Time (min)	30
Static 2 hr Temperature (°F)	70
Inclination (deg)	90
Initial Volume (mL)	250
Free Fluid (mL)	0
% Free Fluid	0
Settling (Y/N)	N

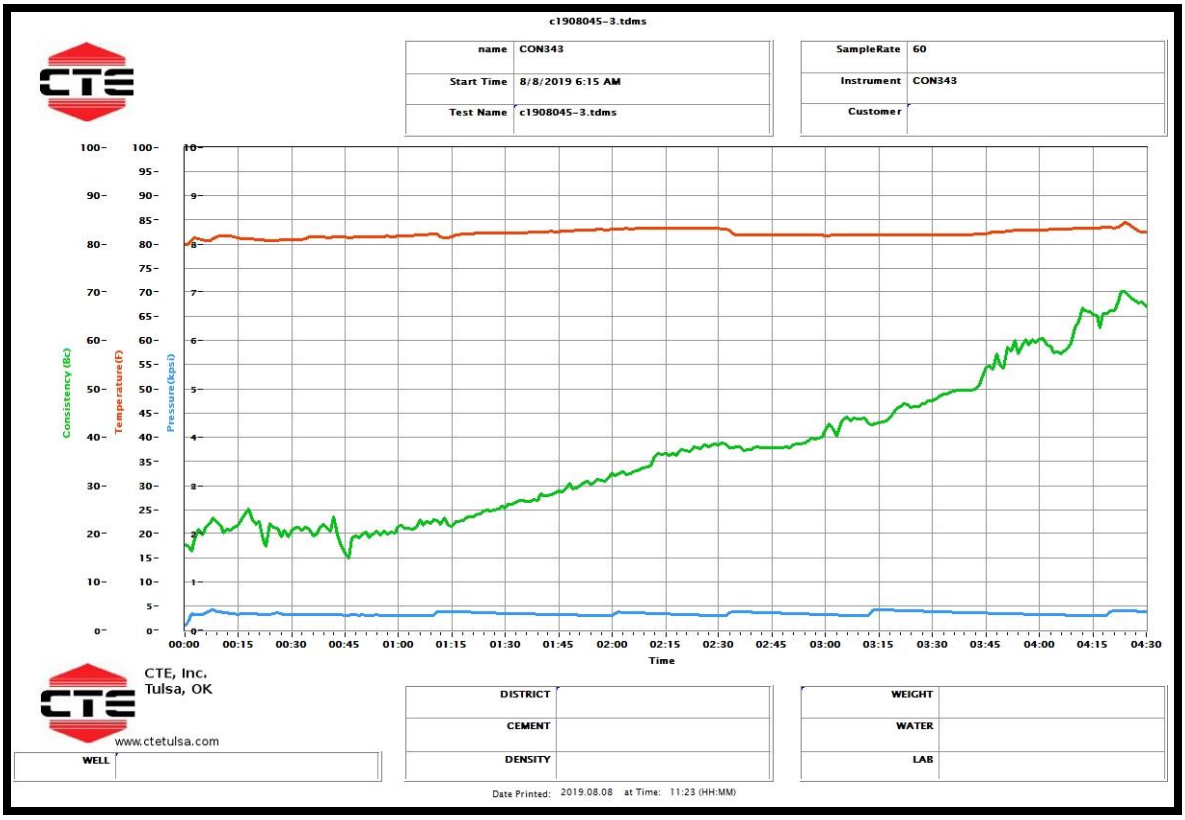
Compressive Strength						
UCA Unit Number	4	Initial		Final		
Temperature (°F)		80		80		
Pressure (psi)		3000		3000		
Ramp Time (hr:mm)		0:05				
Time (hr:mm)		3:52	17:34	12:00	24:00	48:00	72:00
Compressive Strength (psi)		50	500	348	671	1180	1441
Crush Type		Puck				**Final Time:**	72
Time (hr:mm)		12:00	24:00	48:00	72:00	**Final PSI:**	1441
Average Strength (psi)						**Algorithm:**	**A**
Conditioning Time (min)	30	Conditioning Temperature				80	

Project No.	C1908045-3

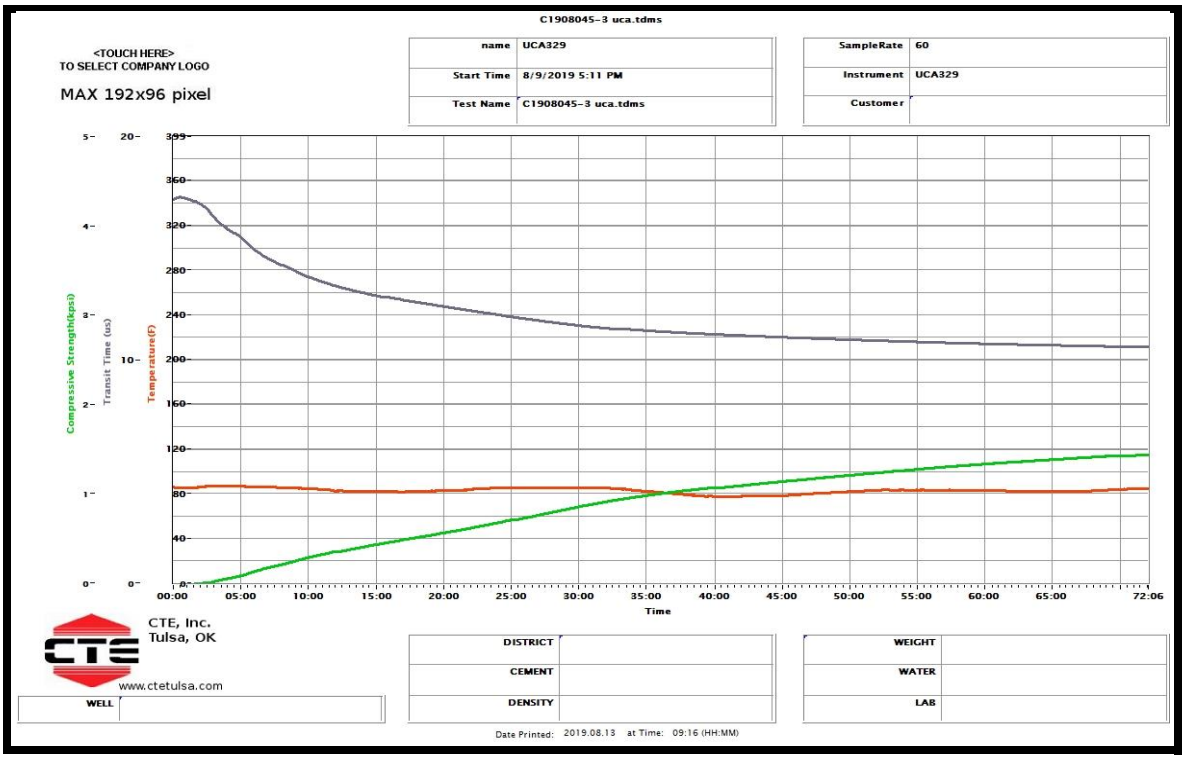




Project No.	C1908045-3



Project No.	C1908045-3



compass Well Services

Lab Analysis Report

10013 W County Rd 157
Midland, Tx 79706

Project No.	C1907252-1

Report Date	8/2/2019	MD	950
Requestor	Jared Booker	TVD	950
Analyst	DP	Test T. (°F)	81
Client	Solaris	BHST (°F)	87
Well	Texas Ranger SWD #1	BHCT (°F)	81
County	Eddy	BHP (psi)	400
Job	Surface	Mud Weight (ppg)	8.5
Slurry	Lead	Blend Type	Pilot

Slurry Properties

Slurry Density (ppg)	Blend Yield (ft3/sk)
12.40	2.27

Slurry Composition

Component	Concentration	Unit	Lot #
Lehigh C	93.000	% of Base Material	Silo A
CPO-18	7.000	% of Base Material	Silo B
Gel	1.500	% BWOB	20190623
C-45	0.750	% BWOB	49281912A
C-51	0.100	% BWOB	1704H821
STE	4.000	% BWOB	7122019
C-503P	0.300	% BWOB	5292019
Salt	1.000	% BWOW	71719
CTB-15	6.000	lb/sk	201906017

Base Fluid	
Water Source	Water Req. (gal/sk)
Lab Tap	12.54

Comments

Project No.	C1907252-1

Rheology		
Temperature (°F)	80	
Pressure (psi)	0	
Condition Time (min)	0	
RPM	Average	Average
300	53	
200	43	
100	33	
60	29	
30	26	
6	20	
3	19	
10 sec gel (lbf/100ft2)		
10 min gel (lbf/100ft2)		
1 min stirring (lbf/100ft2)		
Rheology Model	Bingham	Bingham
PV (cP)	33.0	
YP (lbf/100ft)	22.3	
n' / K' (lbf-s^n/100ft2)		
		7.1

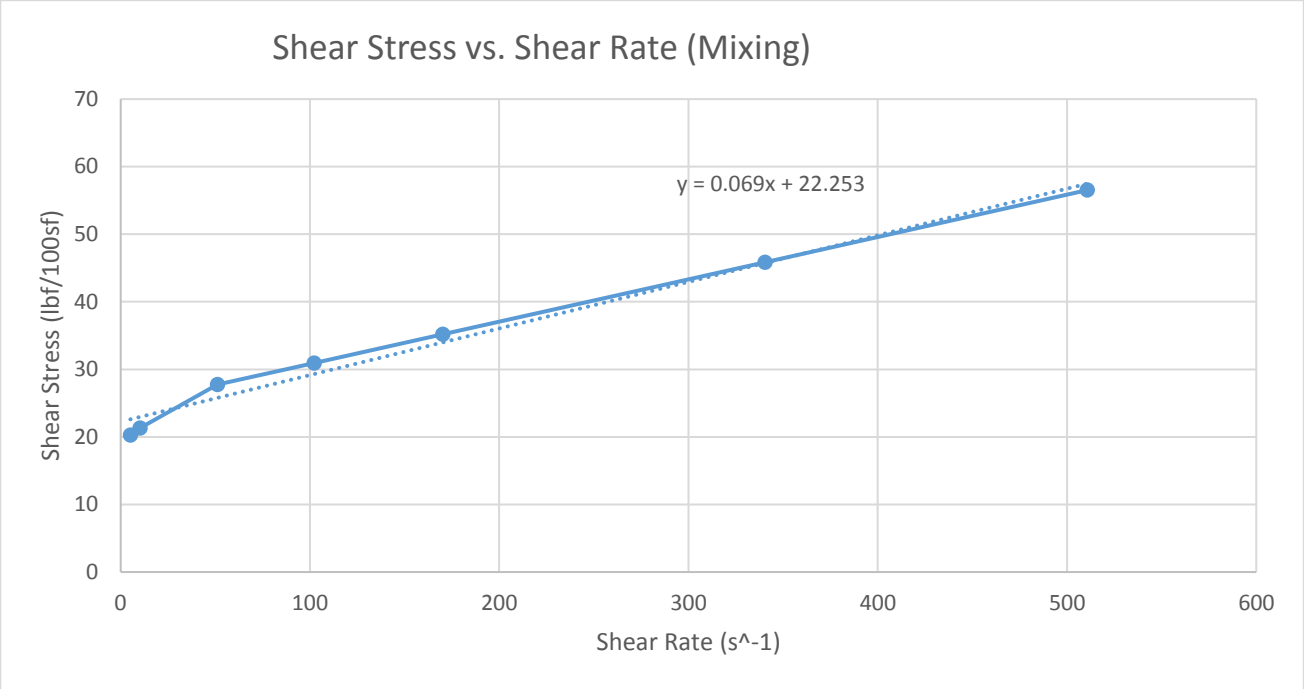
Thickening Time			
HPHT Unit Number	3	Initial	Final
Temperature (°F)		80	81
Pressure (psi)		400	400
Ramp Time (min)		1	5
Consistency (BC)		0	70
Time (hr:mm)		0:00	4:47
Batch Mixing			
Mixing Time (hr:min)			
Temperature (°F)			

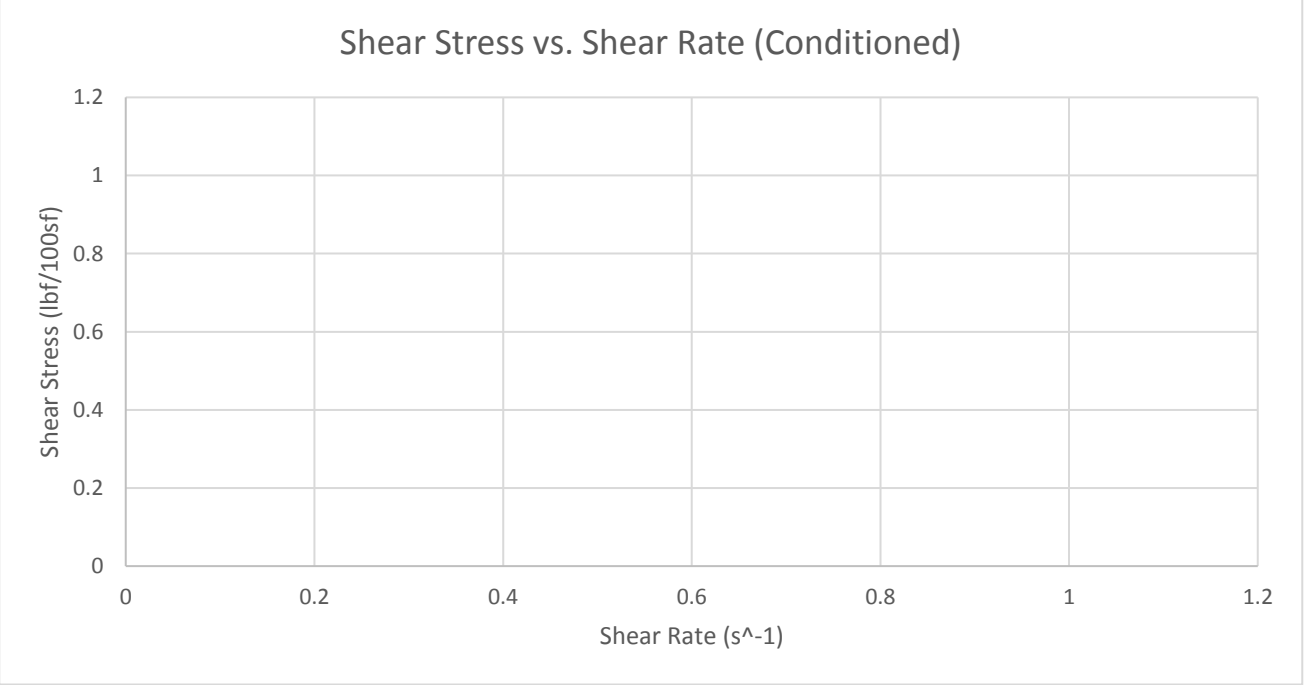
Fluid Loss	
Temperature (°F)	
Pressure (psi)	
Conditioning Time (min)	
Blow Out (Y/N)	
Test Time (min)	
API Fluid Loss (mL/30min)	

Free Fluid	
Conditioning Temp (°F)	81
Conditioning Time (min)	30
Static 2 hr Temperature (°F)	70
Inclination (deg)	90
Initial Volume (mL)	250
Free Fluid (mL)	0.75
% Free Fluid	0.3
Settling (Y/N)	N

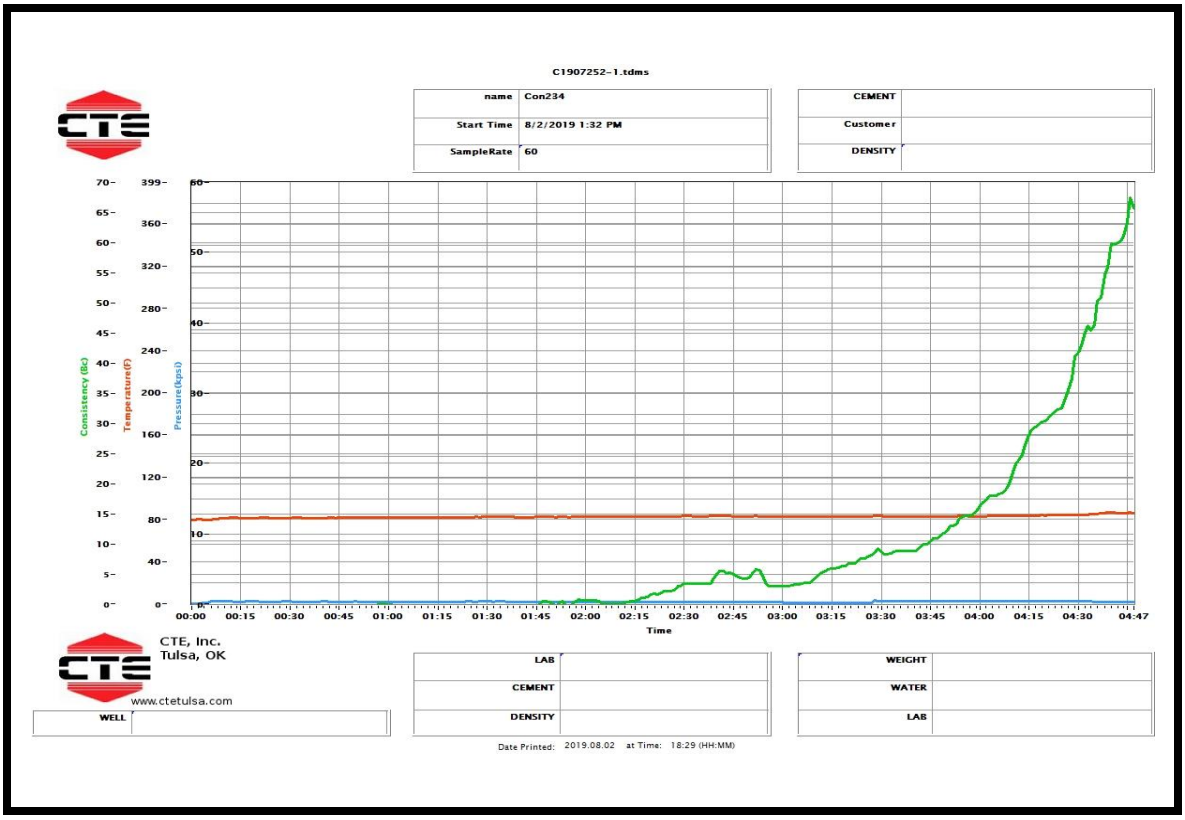
Compressive Strength						
UCA Unit Number	2	Initial		Final		
Temperature (°F)		80		80		
Pressure (psi)		3000		3000		
Ramp Time (hr:mm)		0:05				
Time (hr:mm)		5:21	27:48	12:00	24:00	48:00	72:00
Compressive Strength (psi)		50	500	252	461	618	716
Crush Type		Puck				**Final Time:**	72
Time (hr:mm)		12:00	24:00	48:00	72:00	**Final PSI:**	716
Average Strength (psi)						**Algorithm:**	**A**
Conditioning Time (min)		30	Conditioning Temperature			80	

Project No.	C1907252-1

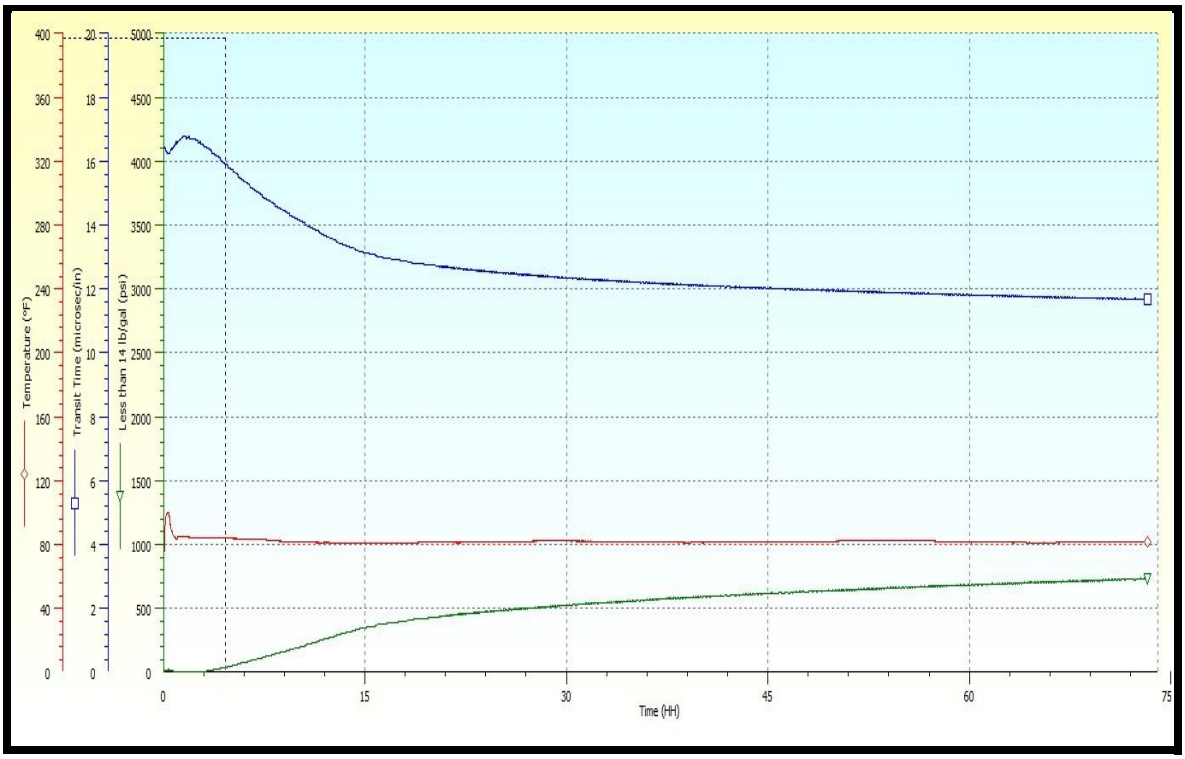




Project No.	C1907252-1



Project No.	C1907252-1



compass Well Services

Lab Analysis Report

10013 W County Rd 157
Midland, Tx 79706

Project No.	C1907253-1

Report Date	8/2/2019	MD	950
Requestor	Jared Booker	TVD	950
Analyst	MB	Test T. (°F)	81
Client	Solaris	BHST (°F)	87
Well	Texas Ranger SWD #1	BHCT (°F)	81
County	Eddy	BHP (psi)	400
Job	Surface	Mud Weight (ppg)	8.5
Slurry	Tail	Blend Type	Pilot

Slurry Properties

Slurry Density (ppg)	Blend Yield (ft3/sk)
14.80	1.35

Slurry Composition

Component	Concentration	Unit	Lot #
Lehigh C	100.000	% of Base Material	Silo A
Calcium Chloride	2.000	% BWOB	2080119
C-45	0.100	% BWOB	49281912A

Base Fluid	
Water Source	Water Req. (gal/sk)
Lab Tap	6.36

Comments

Project No.	C1907253-1

Rheology		
Temperature (°F)	80	
Pressure (psi)	0	
Condition Time (min)	0	
RPM	Average	Average
300	102	
200	93	
100	84	
60	79	
30	73	
6	37	
3	28	
10 sec gel (lbf/100ft2)		
10 min gel (lbf/100ft2)		
1 min stirring (lbf/100ft2)		
Rheology Model	Bingham	Bingham
PV (cP)	61.4	
YP (lbf/100ft)	53.8	
n' / K' (lbf-s^n/100ft2)		
		7.1

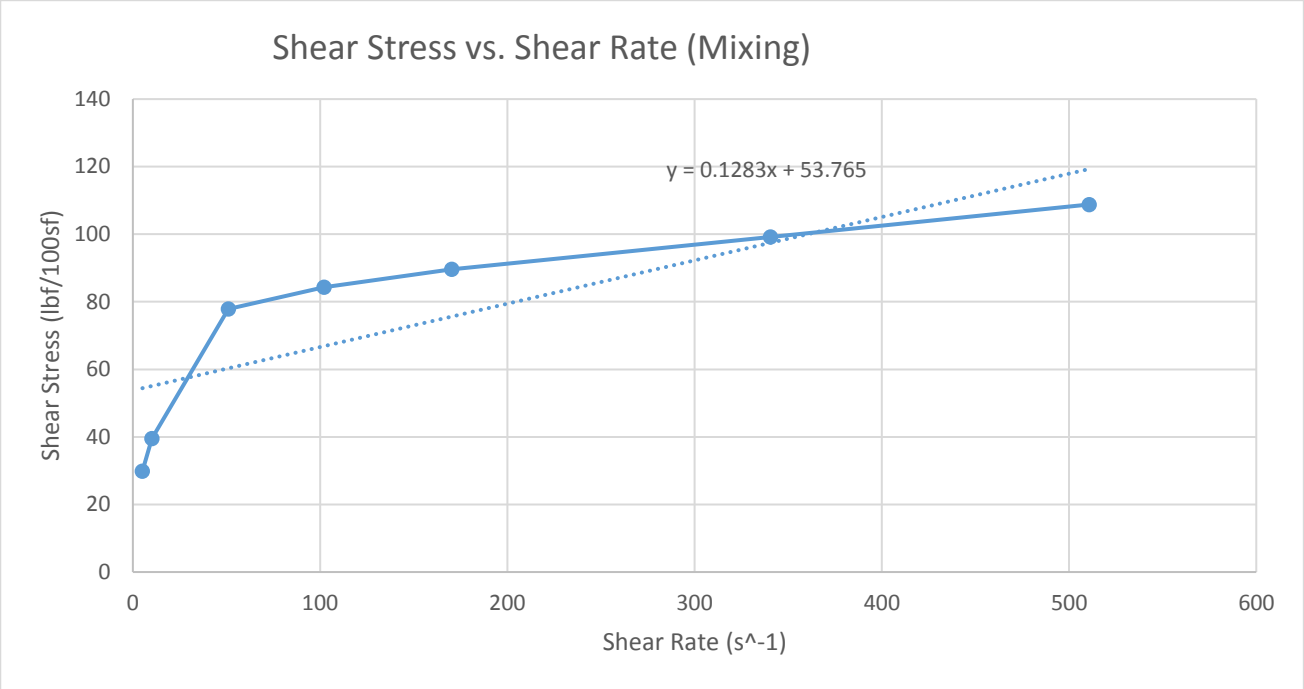
Thickening Time			
HPHT Unit Number	4	Initial	Final
Temperature (°F)		80	81
Pressure (psi)		400	400
Ramp Time (min)		1	5
Consistency (BC)		14	70
Time (hr:mm)		0:00	1:56
Batch Mixing			
Mixing Time (hr:min)			
Temperature (°F)			

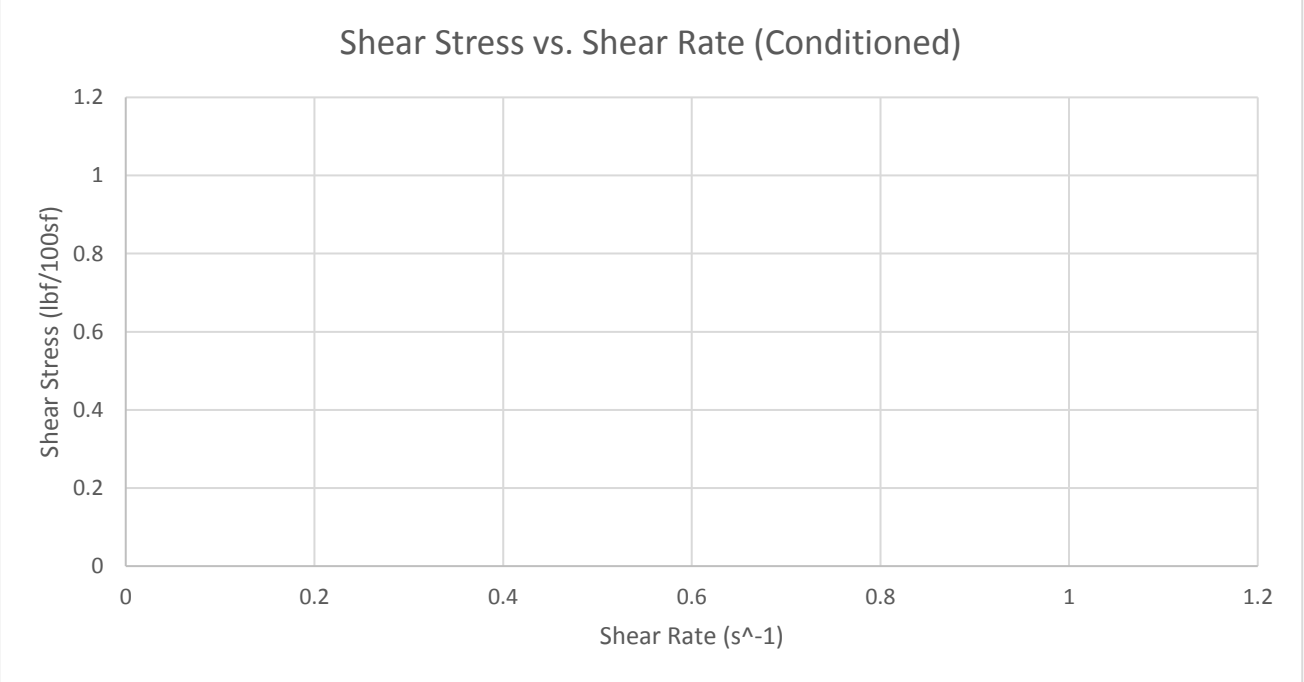
Fluid Loss	
Temperature (°F)	
Pressure (psi)	
Conditioning Time (min)	
Blow Out (Y/N)	
Test Time (min)	
API Fluid Loss (mL/30min)	

Free Fluid	
Conditioning Temp (°F)	81
Conditioning Time (min)	30
Static 2 hr Temperature (°F)	70
Inclination (deg)	90
Initial Volume (mL)	250
Free Fluid (mL)	0
% Free Fluid	0
Settling (Y/N)	N

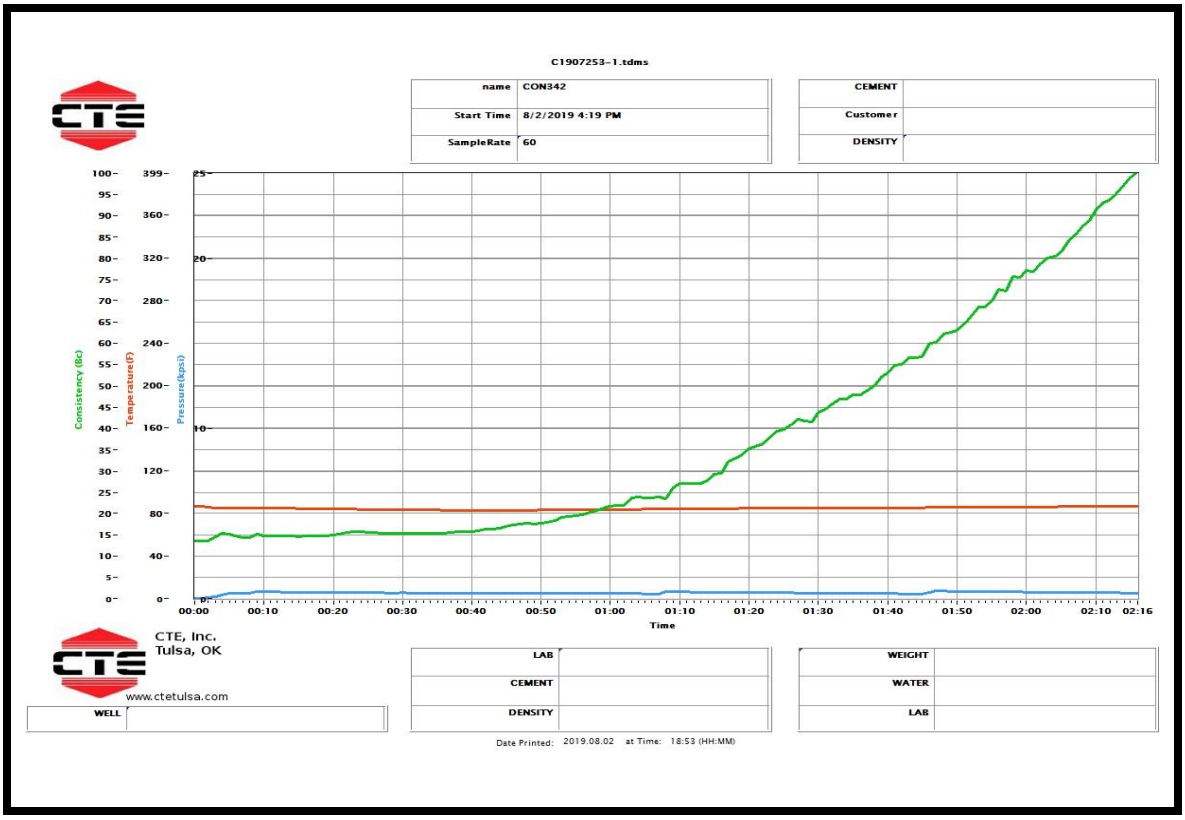
Compressive Strength						
UCA Unit Number	3	Initial		Final		
Temperature (°F)		80		80		
Pressure (psi)		3000		3000		
Ramp Time (hr:mm)		0:05				
Time (hr:mm)		1:37	4:41	12:00	24:00	48:00	72:00
Compressive Strength (psi)		50	500	1157	1918	2593	2895
Crush Type		Puck				**Final Time:**	72
Time (hr:mm)		12:00	24:00	48:00	72:00	**Final PSI:**	2895
Average Strength (psi)						**Algorithm:**	**B**
Conditioning Time (min)		30	Conditioning Temperature			80	

Project No.	C1907253-1

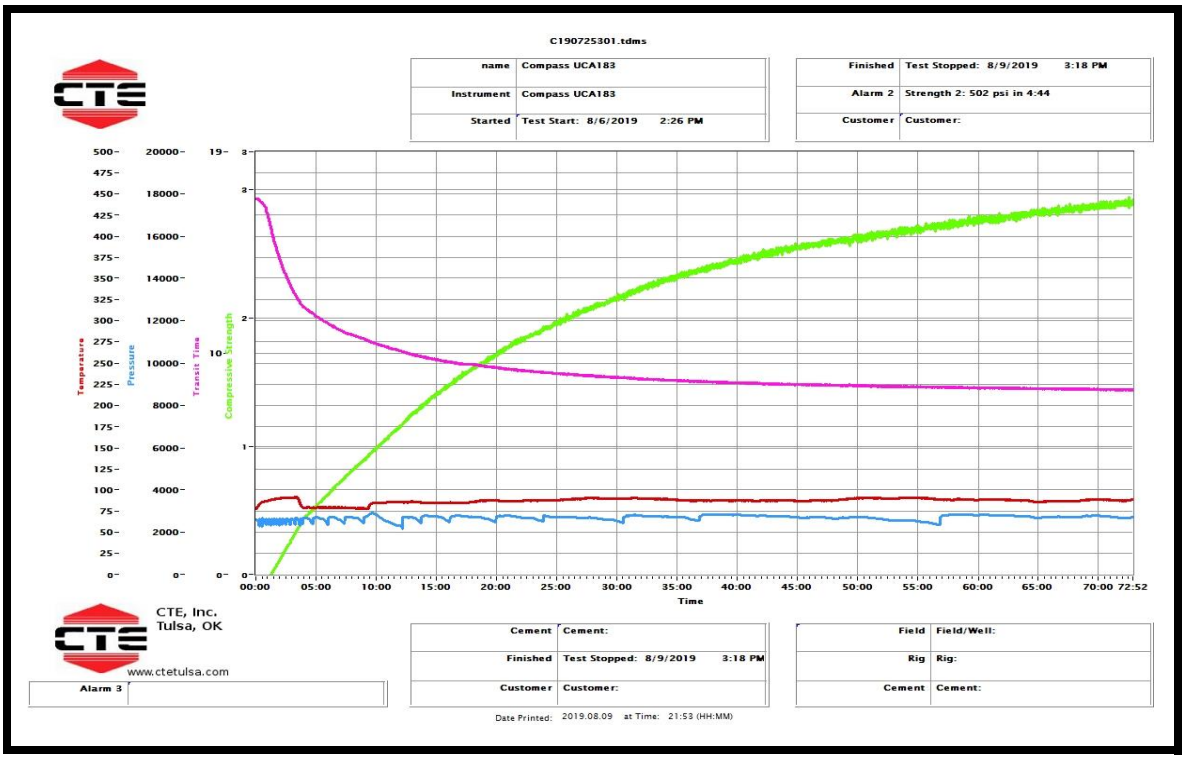




Project No.	C1907253-1



Project No.	C1907253-1



Texas Ranger SWD No. 1
2 Mile Area of Review
Solaris Water Midstream, LLC
Eddy Co., NM

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

Drawn by: ASG	Date: 8/19/2019	Approved by: ELR

LONQUIST & CO. LLC
PETROLEUM ENGINEERS | ENERGY ADVISORS
AUSTIN · HOUSTON · WICHITA · DENVER · CALGARY

- Texas Ranger SWD No. 1 SHL
- 1/2-Mile
- 1-Mile
- 2-Mile
- QQ-Section (NM-PLSS 2nd Div.)
- Section (NM-PLSS 1st Div.)
- Township/Range (NM-PLSS)
- Lateral

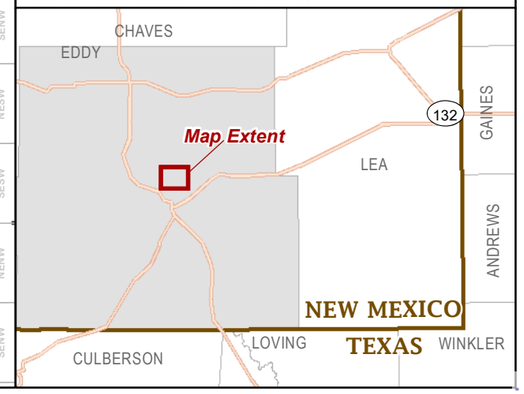
API (30-015-...) SHL Status-Type (Count)

- Horizontal Surface Location (8)
- Active - Gas (27)
- Active - Injection (15)
- Active - Oil (29)
- Active - SWD (1)
- Active - Water Source (2)
- Cancelled/Abandoned Location (35)
- Expired - Water Source (1)
- Plugged/Not Released - Gas (1)
- Plugged/Not Released - Oil (1)
- Permitted - Water Source (1)
- Plugged/Site Released - Gas (12)
- Plugged/Site Released - Oil (46)
- Plugged/Site Released - SWD (2)
- Shut In - Gas (1)

API (30-015-...) BHL Status-Type (Count)

- Active - Gas (3)
- Active - Oil (3)
- Cancelled/Abandoned Location (4)
- Permitted - Gas (1)

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

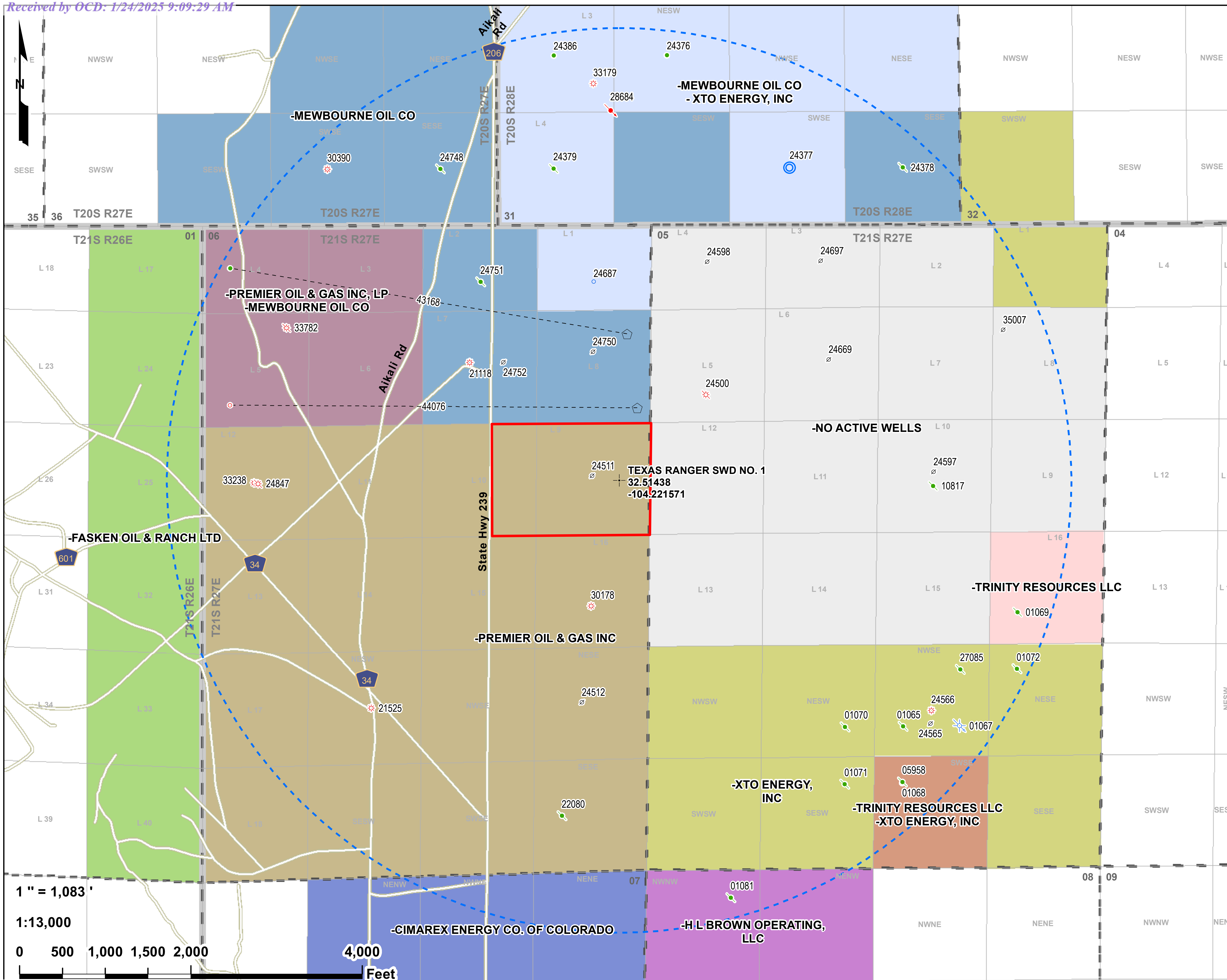


TEXAS RANGER SWD NO. 1
32.51438
-104.221571

1" = 2,524 '
1:30,287
0 ¼ ½ ¾ 1 2 Miles

Texas Ranger SWD No 1
1 Mile Area of Review List

API (30-015-...)	WELL NAME	WELL TYPE	STATUS	OPERATOR	TVD (FT.)	LATITUDE (NAD83 DD)	LONGITUDE (NAD83 DD)	SPUD DATE	FIELD
01065	WELCH FEDERAL #001	O	P	BILL TAYLOR	99999	32.5064774000	-104.210830700	12/31/9999	[11590] CEDAR HILLS, YATES
01067	WELCH FEDERAL #005	S	P	GEORGE D RIGGS	562	32.50649260000	-104.20869450000	10/9/1953	[11590] CEDAR HILLS, YATES
01068	WELCH FEDERAL #006	O	A	TRINITY RESOURCES LLC	99999	32.5046616000	-104.210861200	2/16/1954	[11590] CEDAR HILLS, YATES
01069	WELCH FEDERAL #003	O	P	BILL TAYLOR	99999	32.5101357000	-104.206489600	12/31/9999	[11590] CEDAR HILLS, YATES
01070	PRE-ONGARD WELL #001	O	P	PRE-ONGARD WELL OPERATOR	0	32.5064621000	-104.213035600	1/1/1900	-
01071	PRE-ONGARD WELL #002	O	P	PRE-ONGARD WELL OPERATOR	0	32.5046196000	-104.213050800	1/1/1900	-
01072	PRE-ONGARD WELL #003	O	P	PRE-ONGARD WELL OPERATOR	0	32.5083199000	-104.206520100	1/1/1900	-
01081	PRE-ONGARD WELL #002	O	P	PRE-ONGARD WELL OPERATOR	0	32.5009880000	-104.217361500	1/1/1900	-
05958	PRE-ONGARD WELL #000	O	P	PRE-ONGARD WELL OPERATOR	0	32.5046921000	-104.210861200	1/1/1900	-
10817	PRE-ONGARD WELL #001	O	P	PRE-ONGARD WELL OPERATOR	0	32.5141907000	-104.209686300	1/1/1900	-
21118	FEDERAL STATE COM #001	G	A	MEWBOURNE OIL CO	11700	32.5181694000	-104.227226300	4/4/1974	[73280] BURTON FLAT, MORROW (PRO GAS)
21525	KURLAND FEDERAL #001	G	A	DEVON ENERGY PRODUCTION COMPANY, LP	11380	32.5070801000	-104.230972300	8/27/1975	[73440] BURTON FLAT, STRAWN, WEST (GAS)
22080	GUACAMAYO STATE #001	O	P	PREMIER OIL & GAS INC	4700	32.5036163000	-104.223762500	11/27/1994	[76820] FOSTER DRAW, DELAWARE (GAS)
24376	AVALON DELAWARE UNIT #543	O	A	XTO ENERGY, INC	5000	32.5280228000	-104.219749500	6/1/1983	[3715] AVALON, DELAWARE
24377	AVALON DELAWARE UNIT #562	W	A	XTO ENERGY, INC	5000	32.5244026000	-104.215095500	6/14/1983	[96100] SWD, DELAWARE
24378	AVALON DELAWARE UNIT #549	O	P	EXXON MOBIL CORPORATION	3890	32.5244102000	-104.210815400	12/31/9999	[3715] AVALON, DELAWARE
24379	AVALON DELAWARE UNIT #556	O	P	EXXON MOBIL CORPORATION	4930	32.5243874000	-104.224044800	12/31/9999	[3715] AVALON, DELAWARE
24386	AVALON DELAWARE UNIT #540	O	A	XTO ENERGY, INC	4930	32.5280151000	-104.224037200	7/14/1983	[3715] AVALON, DELAWARE
24500	YATES C FEDERAL #020	G	P	EXXON MOBIL CORPORATION	10500	32.5171242000	-104.218284600	12/31/9999	[73280] BURTON FLAT, MORROW (PRO GAS); [73440] BURTON FLAT, STRAWN, WEST (GAS)
24511	PRE-ONGARD WELL #001	O	C	PRE-ONGARD WELL OPERATOR	0	32.5145318402	-104.222598459	12/31/9999	-
24512	PRE-ONGARD WELL #002	O	C	PRE-ONGARD WELL OPERATOR	0	32.5072641946	-104.222995390	12/31/9999	-
24565	PRE-ONGARD WELL #021	O	C	PRE-ONGARD WELL OPERATOR	0	32.5065679521	-104.209792663	12/31/9999	-
24566	YATES C FEDERAL #031	G	A	XTO ENERGY, INC	11590	32.5069809000	-104.209754900	9/16/1983	[70060] ALACRAN HILLS, ATOKA (GAS); [73360] BURTON FLAT, STRAWN (PRORATED GAS)
24597	PRE-ONGARD WELL #032	O	C	PRE-ONGARD WELL OPERATOR	0	32.5146464555	-104.209664653	12/31/9999	-
24598	PRE-ONGARD WELL #033	O	C	PRE-ONGARD WELL OPERATOR	0	32.5213930462	-104.218229691	12/31/9999	-
24669	PRE-ONGARD WELL #030	O	C	PRE-ONGARD WELL OPERATOR	0	32.5182484695	-104.213630848	12/31/9999	-
24687	AVALON DELAWARE UNIT #916	W	N	XTO ENERGY, INC	5500	32.5207634000	-104.222526600	2/18/1984	[3715] AVALON, DELAWARE; [96995] WSW, DELAWARE
24697	PRE-ONGARD WELL #036	O	C	PRE-ONGARD WELL OPERATOR	0	32.5214227405	-104.213926560	12/31/9999	-
24748	AVALON DELAWARE UNIT #464	O	P	EXXON MOBIL CORPORATION	4825	32.5243797000	-104.228332500	12/31/9999	[3715] AVALON, DELAWARE
24750	PRE-ONGARD WELL #002	O	C	PRE-ONGARD WELL OPERATOR	0	32.5185073632	-104.222560043	12/31/9999	-
24751	AVALON DELAWARE UNIT #914	O	P	EXXON MOBIL CORPORATION	6100	32.5207558000	-104.226814300	12/31/9999	[3715] AVALON, DELAWARE
24752	PRE-ONGARD WELL #004	O	C	PRE-ONGARD WELL OPERATOR	0	32.51817143540	-104.22595341400	12/31/9999	-
24847	KURLAND A FEDERAL #001	G	P	DEVON ENERGY PRODUCTION COMPANY, LP	99999	32.51428600000	-104.23524480000	12/31/9999	[70860] AVALON, BONE SPRING (GAS)
27085	WELCH FEDERAL #008	O	P	BILL TAYLOR	583	32.5083046000	-104.208663900	5/28/1993	[11590] CEDAR HILLS, YATES
28684	AVALON DELAWARE UNIT #542	I	A	XTO ENERGY, INC	3875	32.52625270000	-104.22188570000	5/24/1996	[3715] AVALON, DELAWARE
30178	MOO COW STATE #001	G	A	PREMIER OIL & GAS INC	11531	32.51034930000	-104.22263340000	4/26/1998	[73440] BURTON FLAT, STRAWN, WEST (GAS)
30390	NE AVALON HILLS 36 STATE #001	G	A	MEWBOURNE OIL CO	11400	32.5243759000	-104.232612600	12/2/1998	[73280] BURTON FLAT, MORROW (PRO GAS); [73440] BURTON FLAT, STRAWN, WEST (GAS)
33179	AVALON LAKE 31 FEDERAL #001	G	A	MEWBOURNE OIL CO	11475	32.5271111000	-104.222534200	2/14/2004	[73280] BURTON FLAT, MORROW (PRO GAS)
33238	KURLAND 6 FEDERAL #002	G	A	DEVON ENERGY PRODUCTION COMPANY, LP	11400	32.5143089000	-104.235405000	2/22/2004	[70060] ALACRAN HILLS, ATOKA (GAS); [73320] BURTON FLAT, MORROW, EAST (GAS)
33782	FEDERAL COM #002	G	P	CHI OPERATING INC	11400	32.5192871000	-104.234161400	11/30/2004	[73280] BURTON FLAT, MORROW (PRO GAS)
35007	AVALON HILLS FEDERAL COM #001C	G	C	CHI OPERATING INC	0	32.5191969216	-104.207017101	12/31/9999	[73280] BURTON FLAT, MORROW (PRO GAS)
43168	ROSCOE 6 B3AD FEDERAL COM #001H	O	A	MEWBOURNE OIL CO	8468	32.5190869185	-104.221266853	2/23/2017	[3714] AVALON, LOWER BONE SPRING; [70860] AVALON, BONE SPRING (GAS)
44076	ROSCOE 6 B3HE FEDERAL COM #001H	G	N	MEWBOURNE OIL CO	0	32.5167089600	-104.220881950	12/31/9999	[70860] AVALON, BONE SPRING (GAS)



Texas Ranger SWD No. 1

1-Mile Offset Operators

Solaris Water Midstream, LLC

Eddy Co., NM

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

Drawn by: ASG	Date: 8/20/2019	Approved by: ELR

LONQUIST & CO. LLC
PETROLEUM ENGINEERS | ENERGY ADVISORS
AUSTIN • HOUSTON • CALGARY • WICHITA
DENVER • COLLEGE STATION • BATON ROUGE • EDMONTON

- Texas Ranger SWD No. 1 SHL (old)
- 1-Mile Radius
- QQ-Section (NM-PLSS 2nd Div.)
- Section (NM-PLSS 1st Div.)
- Township/Range (NM-PLSS)
- Lateral

API (30-015-...) SHL Status-Type (Count)

- Horizontal Surface Location (2)
- Active - Gas (7)
- Active - Injection (1)
- Active - Oil (3)
- Active - Water Source (1)
- Cancelled/Abandoned Location (10)
- Permitted - Water Source (1)
- Plugged/Site Released - Gas (3)
- Plugged/Site Released - Oil (14)
- Plugged/Site Released - SWD (1)

API (30-015-...) BHL Status-Type (Count)

- Active - Oil (1)
- Permitted - Gas (1)

Offset Operators

- -CIMAREX ENERGY CO. OF COLORADO
- -PREMIER OIL & GAS INC, LP; -MEWBOURNE OIL CO
- -TRINITY RESOURCES LLC
- -MEWBOURNE OIL CO; - XTO ENERGY, INC
- -DEVON ENERGY PRODUCTION COMPANY, LP
- -DEVON ENERGY PRODUCTION COMPANY, LP; -MEWBOURNE OIL CO
- -FASKEN OIL & RANCH LTD
- -H L BROWN OPERATING, LLC
- -MEWBOURNE OIL CO
- -NAUMANN OIL & GAS INC
- -PREMIER OIL & GAS INC
- -TRINITY RESOURCES LLC; -XTO ENERGY, INC
- -XTO ENERGY, INC
- -NO ACTIVE WELLS
- Surface Owner: KIMBLEY, NATALIE K

Sources: NM-BLM/ NM-SLO (2019)

Texas Ranger SWD No. 1

1-Mile Lessee(s) - BLM/SLO

Solaris Water Midstream, LLC

Eddy Co., NM

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

Drawn by: ASG	Date: 8/20/2019	Approved by: ELR

LONQUIST & CO. LLC

PETROLEUM ENGINEERS | ENERGY ADVISORS

AUSTIN · HOUSTON · WICHITA · DENVER · CALGARY

- Texas Ranger SWD No. 1 SHL
- 1-Mile
- NM-BLM
- NM-SLO
- QQ-Section (NM-PLSS 2nd Div.)
- Section (NM-PLSS 1st Div.)
- Township/Range (NM-PLSS)

API (30-015-...) SHL Status-Type (Count)

- Horizontal Surface Location (2)
- Active - Gas (7)
- Active - Injection (1)
- Active - Oil (3)
- Active - Water Source (1)
- Cancelled/Abandoned Location (10)
- Permitted - Water Source (1)
- Plugged/Site Released - Gas (3)
- Plugged/Site Released - Oil (14)
- Plugged/Site Released - SWD (1)

API (30-015-...) BHL Status-Type (Count)

- Active - Oil (1)
- Permitted - Gas (1)

Lessee

- -CIMAREX ENERGY CO OF COLORADO; -NMNM 100331
- -XTO HOLDINGS, LLC; -L0-0324-0003
- -MEWBOURNE OIL COMPANY; -VB-0530-0000
- -DEVON ENERGY PROD CO LP; -ENERGEN RESOURCES CO; -NMNM 017097
- -NORTHSTAR OPERATING COMPANY; -L0-4861-0001
- -XTO HOLDINGS LLC; -NMNM 0 001119
- -DEVON ENERGY PROD CO LP; -NMNM 0 501759
- -FASKEN ACQUISITIONS 02 LTD; -NMNM 013624
- -NADEL & GUSSMAN LLC; -NMNM 000911
- -PREMIER OIL & GAS INC; -V0-4500-0002
- -PRU-BACHE ENE VP18; -VIKING OG EXPL CO; -MARK SHIDLER INC; -BASIN PETROLEUM CO; -SOOL LTD; -NMNM 038458
- -XTO HOLDINGS LLC; -NMNM 0 375257 A
- -XTO HOLDINGS LLC; -NMNM 098124
- -XTO HOLDINGS, LLC; -K0-4097-0002

Surface Owner

- Surface Owner: M & W WATER SALES LLC

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

1 " = 1,125 '

1:13,500

0 500 1,000 1,500 2,000 4,000 Feet

GEOLOGIC AFFIRMATION

I have examined available geologic and engineering data. The depth of the surface casing is sufficient to protect the known groundwaters in the area of the well.

Stephen Martinez
Sr. Vice President of Drilling

Project: Solaris Water Midstream, LLC
Texas Ranger SWD #1

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
https://www.emnrd.nm.gov/ocd/contact-us

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 424449

CONDITIONS

Operator: NEW MEXICO ENERGY MINERALS & NATURAL RESOURCE 1220 S St Francis Dr Santa Fe , NM 87504	OGRID: 264235
	Action Number: 424449
	Action Type: [IM-SD] Admin Order Support Doc (ENG) (IM-AAO)

CONDITIONS

Created By	Condition	Condition Date
pgoetze	None	1/27/2025