

RECEIVED: 06/24/2019	REVIEWER:	TYPE: SWD	APP NO: pMAM1917739654
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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: XTO Permian Operating, LLC **OGRID Number:** 373075
Well Name: James Ranch Unit 6 Torino SWD **API:** TBA
Pool: SWD: Devonian-Silurian (97869) **Pool Code:** 96101

**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-2167

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 holders

B. ☐ Royalty, overriding royalty owners, revenue owners

C. ☒ Application requires published notice

D. ☒ Notification and/or concurrent approval by SLO

E. ☒ Notification and/or concurrent approval by BLM

F. ☒ Surface owner

G. ☒ 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.

Tracie J. Cherry, Regulatory Coordinator

Print or Type Name


 Signature

Date

06/21/19

432-221-7379

Phone Number

tracie_cherry@xtoenergy.com

e-mail Address

McMillan, Michael, EMNRD

From: Cherry, Tracie <Tracie_Cherry@xtoenergy.com>
Sent: Wednesday, June 26, 2019 2:02 PM
To: McMillan, Michael, EMNRD
Subject: [EXT] Poker Lake Unit 6 Torino SWD #1

Mike –

Per our conversation, the SWD application for the referenced well was received at the NMOCD on June 24, 2019. A copy of the referenced application and all attachments has also been emailed to you.

If you need any additional information, please let me know.

Thank you...Tracie

Tracie J Cherry
Regulatory Coordinator
Direct number 432-221-7379



a subsidiary of ExxonMobil

RECEIVED: <u>06/21/2019</u>	REVIEWER:	TYPE: <u>SWD</u>	APP NO: <u>PMAM1917739654</u>
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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
- 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 holders
 B. ☐ Royalty, overriding royalty owners, revenue owners
 C. ☒ Application requires published notice
 D. ☒ Notification and/or concurrent approval by SLO
 E. ☒ Notification and/or concurrent approval by BLM
 F. ☒ Surface owner
 G. ☒ 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.

Tracie J. Cherry, Regulatory Coordinator

Print or Type Name

Date

432-221-7379

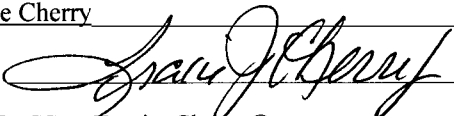
Phone Number

tracie_cherry@xtoenergy.com

e-mail Address

Signature

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: _____ Secondary Recovery _____ Pressure Maintenance x Disposal _____ Storage
Application qualifies for administrative approval? x Yes _____ No
- II. OPERATOR: XTO Permian Operating, LLC (373075)
ADDRESS 6401 Holiday Hill Rd. Bldg 5, Midland TX 79707
CONTACT PARTY: Tracie Cherry PHONE: 432-571-8220
- 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: Tracie Cherry TITLE: Regulatory Lead
SIGNATURE:  DATE: 06/21/19
E-MAIL ADDRESS: Tracie_Cherry@xtoenergy.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: _____

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.

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 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
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 30-015-		² Pool Code		³ Pool Name	
⁴ Property Code		⁵ Property Name JRU 6 TORINO SWD			⁶ Well Number 1
⁷ OGRID No. 005380		⁸ Operator Name XTO ENERGY, INC.			⁹ Elevation 3,302'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	6	23 S	31 E		2,211	SOUTH	1,402	WEST	EDDY

¹¹ Bottom Hole Location If Different From Surface

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

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.

¹⁶ T-22-S R-30-E SEC. 36		T-22-S R-31-E SEC. 31		SEC. 31	
T-23-S R-30-E SEC. 1				T-23-S R-31-E SEC. 6	
GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y= 484,952.0 X= 658,374.3 LAT.= 32.332207°N LONG.= 103.820586°W		GEODETIC COORDINATES NAD 83 NME SURFACE LOCATION Y= 485,011.8 X= 699,556.7 LAT.= 32.332329°N LONG.= 103.821076°W		17 OPERATOR CERTIFICATION <i>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.</i> Signature _____ Date _____ Printed Name _____ E-mail Address _____	
CORNER COORDINATES TABLE NAD 27 NME A - Y= 485,380.1 N, X= 656,970.1 E B - Y= 485,387.5 N, X= 659,638.0 E C - Y= 482,736.3 N, X= 656,981.1 E D - Y= 482,746.2 N, X= 659,659.4 E		CORNER COORDINATES TABLE NAD 83 NME A - Y= 485,439.9 N, X= 698,152.5 E B - Y= 485,447.3 N, X= 700,820.4 E C - Y= 482,796.1 N, X= 698,163.6 E D - Y= 482,806.0 N, X= 700,841.9 E		18 SURVEYOR CERTIFICATION <i>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</i> 5-13-2019 Date of Survey _____ Signature and Seal of Professional Surveyor: MARK DILLON HARP 23786 Certificate Number _____ JC 2018112620	

III. Well Data

A. 1) Lease name: **James Ranch Unit 6 Torino SWD**
 Well #: **1** API # **TBA**
 Section: **6**
 Township: **23S**
 Range: **31E**
 Footage: **2211 FSL & 1402 FWL**

2) Casing Info:

Casing size	Set depth	Sacks cmt	Hole size	TOC	Method
18-5/8", 87.5# J-55 BTC	420'	905 sx C	24"	Surf	Circ
13-3/8" 68# HCL-80 BTC	3812'	2580 sx Poz/C 905 sx C	17-1/2"	Surf	Circ
9-5/8" 53.5# HCP-110 BTC	11,660'	Stage 1 2180 sx Poz/H	12-1/4"	Surf	Circ
DV tool @ 3912'		Stage 2 1580 sx Poz/H			
7" 32# HCP-110 BTC	11,200'-15,610'	650 sx Poz/H	8-1/2"	11,200'	Circ

3) Tubing to be used (size, lining material, setting depth):

Tapered String

5-1/2" , 17#, P-110 IPC to 10,700"

4-1/2", 13.65#, P-110 IPC tubing @ 10,700'-15,510'

4) Name, model, and depth of packer to be used:

Baker Series F nickle plated permanent packer @ 15,510'

B. 1) Name of the injection formation and, if applicable, the field or pool name:

SWD; Devonian-Silurian (97869)

2) The injection interval and whether it is perforated or open hole:

Open hole, 15,610'-16,980' (or to the base of the Fusselman as determined by mud logs)

3) State if the well was drilled for injection or, if not, the original purpose of the well:

This well is being drilled for the purpose of injection

4) Give the depths of any other perforated intervals and detail on the sacks of cement or BPs used to seal off such perforations:

N/A

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:

**Higher: Bell Canyon (+/-3,958) Cherry Canyon (+/-5,050') Brushy Canyon (+/-6,430'),
 Avalon/Bone Spring (+/-7,805'), Wolfcamp (+/-11,075'), Atoka (+/-12,845')Morrow (+/-13,480')**

Lower: None

James Ranch Unit 6 Torino SWD #1

Proposed SWD Schematic (June 18, 2019)

County: Eddy
SHL: 2211' FSL, 1402' FWL
Sec 6, T 23S, R 31E

BHL: 2211' FSL, 1402' FWL
Sec 6, T 23S, R 31E



AFE # N/A
XTO ID # N/A
API # N/A
Elevation GL 3303', KB 3333' (30' AGL)
Rig: TBD (RKB 30')

Geology	Casing & Cement	Wellhead	Hole Size	General Notes
<i>TVD Formation</i>		(Tech Data Sheet)		
258' Rustler	<u>Tail (100% OH excess)</u> 905 sx 14.8ppg Class C Top of Tail @ 0'	420' MD	24"	
	18-5/8" 87.5# J-55 BTC			
563' Top Salt	<u>Lead (150% OH excess)</u> 2580 sx 12.8ppg Poz/C Top of Lead @ 0		17-1/2"	
3,693' Base Salt	<u>Tail (100% OH excess)</u> 905 sx 14.8ppg Class C Top of Tail @ 3000'	3812' MD		
	13-3/8" 68# HCL-80 BTC			
3,931' Delaware	<u>Stg 2 Lead (200% OH excess)</u> 1150 sx 11.5ppg Poz/H Top of Lead @ 0'		12-1/4"	
	<u>Stg 2 Tail (75% OH excess)</u> 430 sx 14.8ppg Poz/H Top of Tail @ 3000'		5-1/2" 17# P-110 tubing 0 - 10,700'	
	DV tool @ 3912'			
7,753' Bone Spring	<u>Stg 1 Lead (100% OH excess)</u> 1625 sx 11.5ppg Poz/H Top of Lead @ 3912'	11200' MD	Crossover @ 10,700'	
11,063' Wolfcamp	<u>Stg 1 Tail (100% OH excess)</u> 555 sx 14.8ppg Poz/H Top of Tail @ 10660'		4-1/2" 13.5# P-110 tubing 10,700' - 15,510'	
11,513' Wolfcamp B	9-5/8" 53.5# P-110 BTC	11660' MD		
	<u>Tail (40% OH excess)</u> 650 sx 14.5ppg Poz/H Top of Tail @ 11200'		8-1/2"	
12,628' Strawn				
13,058' Atoka				
13,483' Morrow				
14,983' Mississippian Lm				
15,403' Woodford				
15,593' Devonian				
	7" 32# P-110 BTC	15610' MD	5Baker Hughes Series F Permanent Pkr 15,510'	
16,980' TVD at BHL	Open hole completion	16,960' MD 16,980' TVD	6"	
17,003' Montoya				

Approvals

Prepared by: _____

Peer Reviewed by: _____ Date

Reviewed by: _____

Approved by: _____

C-108 DATA

- 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.

Maps attached (Exhibit A & Exhibit B).

- 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 wells type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

(Exhibit C)

Two (2) horizontal wells terminate within or cross the one-mile Area of Review. The wells do not penetrate the proposed disposal zone.

API 30-015-37046	XTO permian Operating LLC	James Ranch Unit #113
API 30-015-38117	XTO permian Operating LLC	James Ranch Unit #119

Four (4) plugged wells are within the one-mile Area of Review. None of the wells penetrate the proposed disposal zone.

- VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected:

20,000 average, 40,000 maximum BWPD

2. Whether the system is open or closed: **closed**

3. Proposed average and maximum injection pressure: **2,000 psi average, 3122 psi maximum**

4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water: **Well will be part of a multi-well SWD system taking Permian waters. The majority of the produced water will come from Delaware, Bone Spring and Wolfcamp formations with minor amounts from Atoka and Morrow.**

An analysis of water to be disposed is attached (Exhibit D)

5. If injection is for disposal purposes into a zone not productive of oil & gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water:

No disposal wells are within one mile of the proposed well.


- 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 TDS 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:

Lithologic Detail:	Carbonate (Dolomites and Limestones)
Geological Name:	Devonian to near base of the Fusselman
Thickness:	Est. 1,390'
Depth:	Est. 15,590'/16,980'

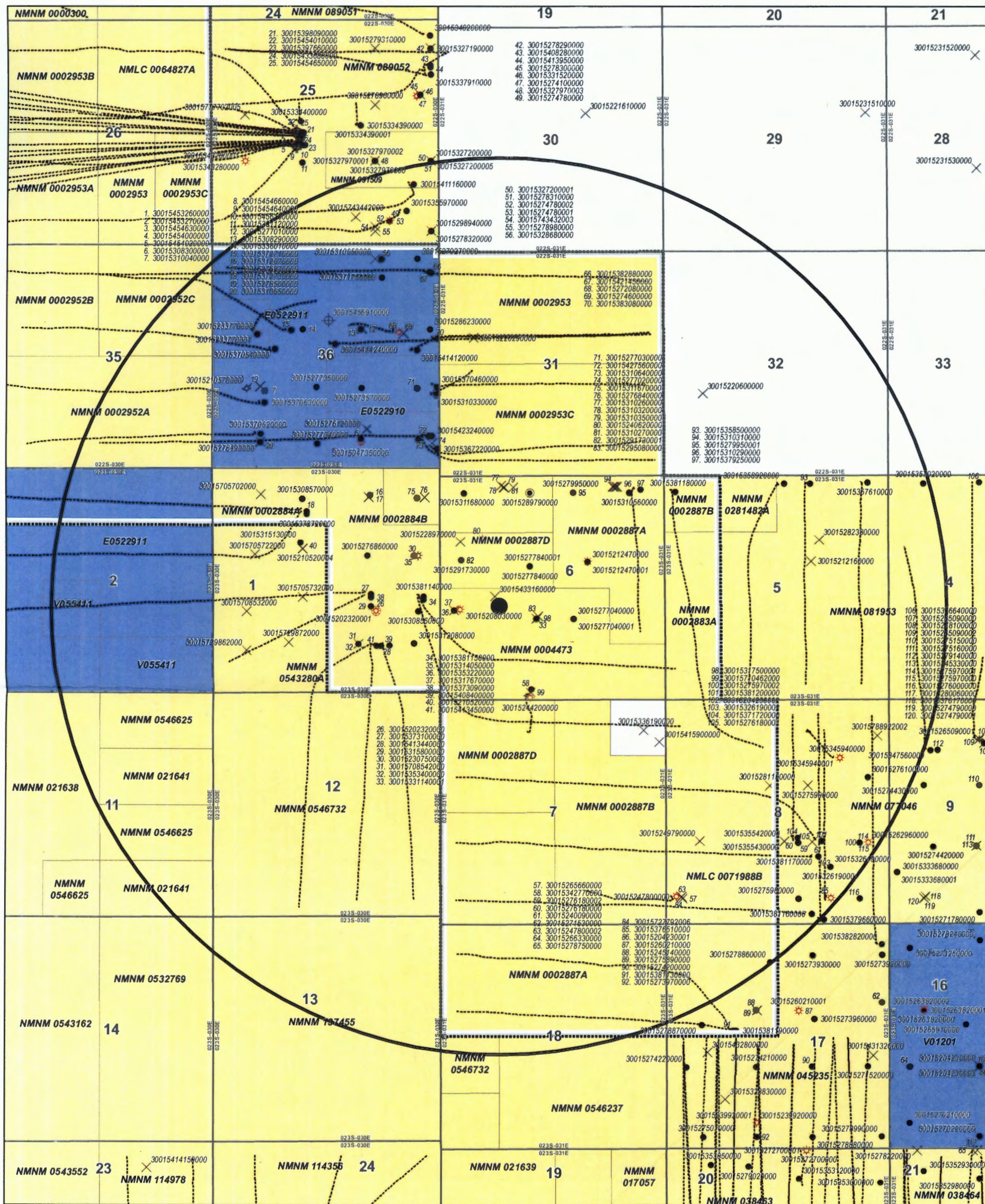
The Dewey Lake Red Beds consists of alluvial siltstones, shales and sandstones which are present at the surface to the top of the Rustler Anhydrite. The top of the Rustler Anhydrite is estimated to be at 255 feet below the surface in this proposed JRU 6 Torino SWD 1 well. These Dewey Lake Red Beds may contain fresh water throughout this geographic area, but it is not likely of drinking water quality (TDS of 10,000 mg/L or less).

Based on published maps, the Capitan Reef Aquifer is not present in this area

No sources of fresh water are known to exist below the proposed disposal zone.

- IX. Describe the proposed stimulation program, if any:
Acid stimulate with approximately 5000 gallons of 15% NEFE HCL acid.
- X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted.)
Logs will be submitted with completion papers when well is drilled.
- 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.
Basd on a review of the New Mexico Office of State Engineer database, only one (1) water well exists Well C-03668 is permitted as a livestock watering well. Other wells shown on map are not active or were drilled for monitoring purposes. XTO is working with owner to verify well activity and obtain a water sample.
(Exhibit E)
- 
- 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 hydology connection between the disposal zone and any underground sources of drinking water.
(Exhibit F)
- XIV. Proof of Notice
(Exhibit G)

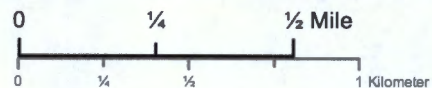
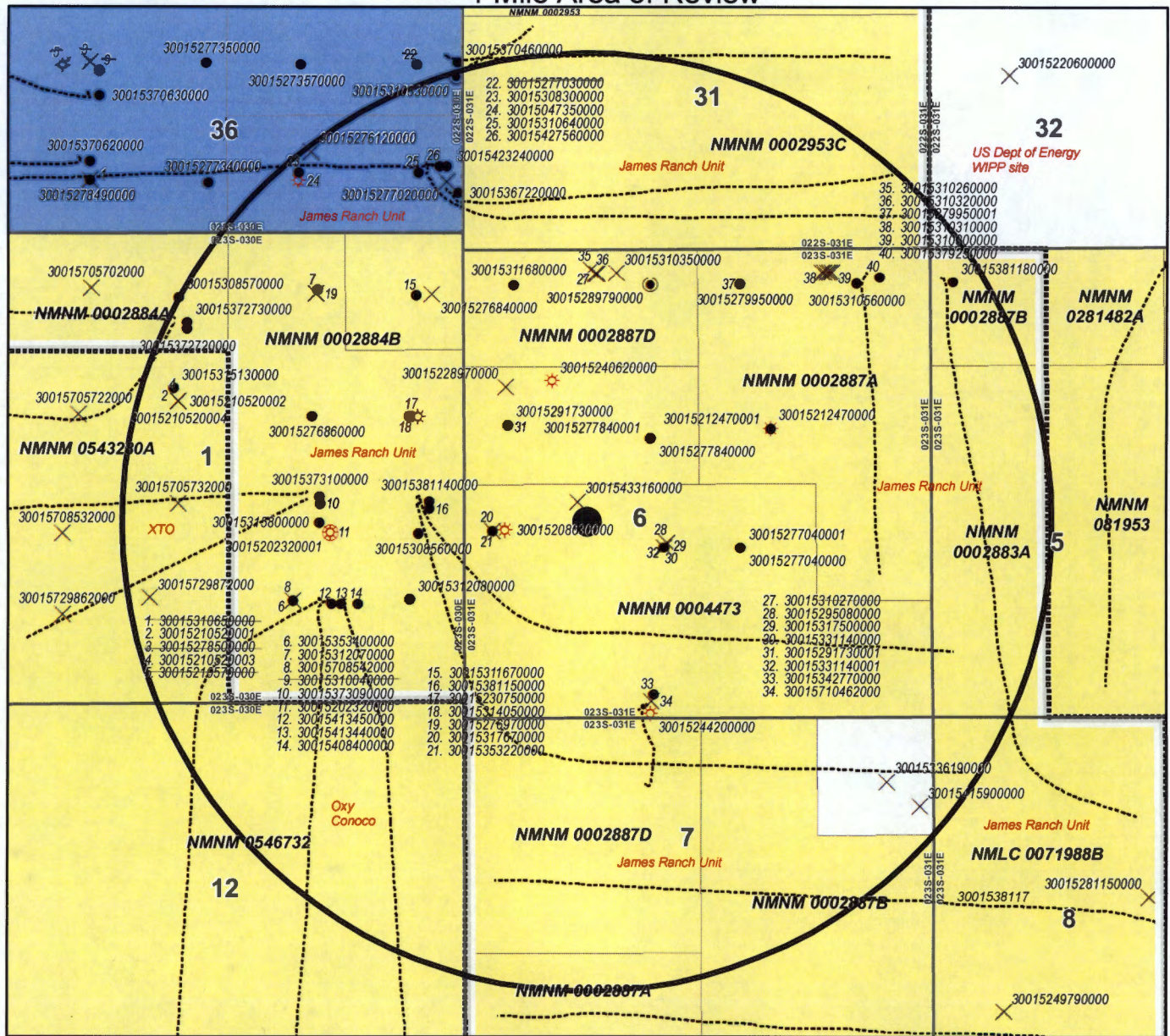
James Ranch Unit 6 Torino SWD 1 Eddy County, New Mexico



- | | | |
|--|--|--|
| <ul style="list-style-type: none"> --- wellbore State Lease Federal Lease two mile buffer BLM Active Unit - James Ranch | Well Status Name <ul style="list-style-type: none"> GAS INJECTION MULTI OIL AND GAS PRODUCER OIL OIL AND GAS PRODUCER MULTIPLE GAS PRODUCER MULTIPLE OIL PRODUCER ABANDONED DRILLING | <ul style="list-style-type: none"> NON-PRODUCING OTHER CO2 DRY STORAGE CBM OTHER PRODUCING WATER SUPPLY WELL WELL PERMIT WELL START |
|--|--|--|

known well operators in buffer
 BASS ENTRPRS PROD CO
 BELCO PET NRTH AMER
 BOPCO LP
 CONOCO INCORPORATED
 DEVON ENERGY PROD
 EOG RESOURCES INC
 GRACE MICHAEL P INC
 MITCHELL ENERGY CORP
 OCCIDENTAL PERMAN
 XTO PERMAN OPER LLC

James Ranch Unit 6 Torino SWD 1 Eddy County, New Mexico 1 Mile Area of Review



----- wellbore	Well Status Name	<input checked="" type="checkbox"/> NON-PRODUCING OTHER
State Lease	GAS	<input type="checkbox"/> CO2
Federal Lease	INJECTION	<input checked="" type="checkbox"/> DRY
one mile buffer	MULTI OIL AND GAS PRODUCER	<input type="checkbox"/> STORAGE
BLM Active Unit - James Ranch	OIL	<input checked="" type="checkbox"/> CBM
	OIL AND GAS PRODUCER	<input type="checkbox"/> OTHER PRODUCING
	MULTIPLE GAS PRODUCER	<input checked="" type="checkbox"/> WATER SUPPLY WELL
	MULTIPLE OIL PRODUCER	<input type="checkbox"/> WELL PERMIT
	ABANDONED	<input checked="" type="checkbox"/> WELL START
	DRILLING	

known well operators in buffer
BASS ENTRPRS PROD CO
BOPCO LP
CONOCO INCORPORATED
EOG RESOURCES INC
OCCIDENTAL PERMAN

Exhibit B

Wells Within 1 Mile AOR

API	wellname	Sec	TWN	RNG	UL	ogrid_name	spud	directional	pool_id_list	Well Type	Well Status
30-015-31167	JAMES RANCH UNIT #035	1	235	30E	1	XTO PERMIAN OPERATING LLC.	2000	V	[50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST	Oil	Active
30-015-27684	JAMES RANCH UNIT #035	1	235	30E	1	EOG RESOURCES INC	9999		0 No Data	Oil	Cancelled APD
30-015-31207	JAMES RANCH UNIT #033	1	235	30E	2	XTO PERMIAN OPERATING LLC.	2000	V	[50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST	Oil	Active
30-015-27697	JAMES RANCH UNIT #033	1	235	30E	2	EOG RESOURCES INC	9999		0 No Data	Oil	Cancelled APD
30-015-37272	HUDSON 1 FEDERAL COM #008H	1	235	30E	3	XTO PERMIAN OPERATING LLC.	2010		0 [50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST;	Oil	Active
30-015-37273	JAMES RANCH UNIT #108H	1	235	30E	3	XTO PERMIAN OPERATING LLC.	2009		0 [50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST;	Oil	Active
30-015-30857	JAMES RANCH UNIT #063	1	235	30E	3	XTO PERMIAN OPERATING LLC.		V	[50470] QUAHADA RIDGE, DELAWARE, SOUTHEAST;	Oil	Active
30-015-31513	HUDSON 1 FEDERAL #007	1	235	30E	F	XTO PERMIAN OPERATING LLC.	2001	V	[50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST	Oil	Active
30-015-21052	HUDSON FEDERAL #001	1	235	30E	F	BOPCO, L.P.	1993	V	[40295] LOS MEDANOS, BONE SPRING; [50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST; [80520] LOS MEDANOS, ATOKA (GAS); [96100] SWD, DELAWARE; [96336] LOS MEDANOS, WOLFCAMP, SOUTH	Salt Water Disposal	Plugged (Site Released)
30-015-27686	JAMES RANCH UNIT #036	1	235	30E	G	XTO PERMIAN OPERATING LLC.	1993	V	[50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST	Oil	Active
30-015-23075	JAMES RANCH UNIT #010	1	235	30E	H	XTO PERMIAN OPERATING LLC.	1980	V	[80520] LOS MEDANOS, ATOKA (GAS)	Gas	Active
30-015-31405	JAMES RANCH UNIT #084	1	235	30E	H	XTO PERMIAN OPERATING LLC.	2001	V	[50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST	Oil	Active
30-015-30856	JAMES RANCH UNIT #038	1	235	30E	I	XTO PERMIAN OPERATING LLC.	2000	V	[50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST	Oil	Active
30-015-38114	JAMES RANCH UNIT #109H	1	235	30E	I	XTO PERMIAN OPERATING LLC.	2011		0 [50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST	Oil	Active
30-015-38115	JAMES RANCH UNIT #110H	1	235	30E	I	XTO PERMIAN OPERATING LLC.	2011		0 [50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST	Oil	Active
30-015-27819	JAMES RANCH UNIT #038	1	235	30E	I	EOG RESOURCES INC	9999		0 No Data	Oil	Cancelled APD
30-015-20232	JAMES RANCH UNIT #003	1	235	30E	J	XTO PERMIAN OPERATING LLC.	1971	V	[80520] LOS MEDANOS, ATOKA (GAS); [80560] LOS MEDANOS, MORROW (GAS)	Gas	Active
30-015-31580	JAMES RANCH UNIT #083	1	235	30E	J	XTO PERMIAN OPERATING LLC.	2001	V	[50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST	Oil	Active
30-015-37309	HUDSON 1 FEDERAL COM #010H	1	235	30E	J	XTO PERMIAN OPERATING LLC.	2010		0 [50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST;	Oil	Active
30-015-37310	HUDSON 1 FEDERAL COM #009H	1	235	30E	J	XTO PERMIAN OPERATING LLC.	2010		0 [50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST	Oil	Active
30-015-20236	PRE-ONGARD WELL #003	1	235	30E	J	BELCO PETROLEUM CORP	1900	V	No Data	Oil	Plugged (Site Released)
30-015-20496	PRE-ONGARD WELL #003	1	235	30E	J	BELCO PETROLEUM CORP	1900		0 No Data	Oil	Plugged (Site Released)
30-015-35340	JAMES RANCH UNIT #062	1	235	30E	O	XTO PERMIAN OPERATING LLC.	2007	V	[50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST	Oil	Active
30-015-40840	FEDERAL 12 #001H	1	235	30E	O	OCCIDENTAL PERMIAN LTD	2012		0 [50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST	Oil	Active
30-015-41344	FEDERAL 12 #002H	1	235	30E	O	OCCIDENTAL PERMIAN LTD	2014	H	[50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST	Oil	Active

Exhibit C

30-015-41345	FEDERAL 12 #003H	1 235	30E	O	OCCIDENTAL PERMIAN LTD	2014 H	[50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST	Oil	Active
30-015-31208	JAMES RANCH UNIT #082	1 235	30E	P	XTO PERMIAN OPERATING LLC.	2000 V	[50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST	Oil	Active
30-015-38118	JAMES RANCH UNIT #115H	5 235	31E	4	XTO PERMIAN OPERATING LLC.	2011	[50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST	Oil	Active
30-015-31056	JAMES RANCH UNIT #079	6 235	31E	1	XTO PERMIAN OPERATING LLC.	2000 V	[40295] LOS MEDANOS, BONE SPRING; [50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST; [96336] LOS MEDANOS, WOLF CAMP, SOUTH	Oil	Active
30-015-37925	JAMES RANCH UNIT #114H	6 235	31E	1	XTO PERMIAN OPERATING LLC.	2010 H	[50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST	Oil	Active
30-015-31028	JAMES RANCH UNIT #022	6 235	31E	1	BEPCO, LP	9999	0 No Data	Oil	Cancelled APD
30-015-31030	JAMES RANCH UNIT #024	6 235	31E	1	BEPCO, LP	9999	0 No Data	Oil	Cancelled APD
30-015-27995	JAMES RANCH UNIT #065	6 235	31E	2	XTO PERMIAN OPERATING LLC.	1996 V	[40295] LOS MEDANOS, BONE SPRING; [40297] LOS MEDANOS, DELAWARE; [50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST; [96336] LOS MEDANOS, WOLF CAMP, SOUTH	Oil	Active
30-015-31031	JAMES RANCH UNIT #025	6 235	31E	2	BEPCO, LP	9999	0 No Data	Oil	Cancelled APD
30-015-31034	JAMES RANCH UNIT #251	6 235	31E	2	BEPCO, LP	9999	0 No Data	Oil	Cancelled APD
30-015-28979	JAMES RANCH UNIT #073	6 235	31E	3	XTO PERMIAN OPERATING LLC.	1996 V	[40295] LOS MEDANOS, BONE SPRING; [50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST; [96336] LOS MEDANOS, WOLF CAMP, SOUTH	Oil	Active
30-015-31027	JAMES RANCH UNIT #021	6 235	31E	3	BEPCO, LP	9999	0 No Data	Oil	Cancelled APD
30-015-31032	JAMES RANCH UNIT #026	6 235	31E	3	BEPCO, LP	9999	0 No Data	Oil	Cancelled APD
30-015-31168	JAMES RANCH UNIT #074	6 235	31E	4	XTO PERMIAN OPERATING LLC.	2000 V	[50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST	Oil	Active
30-015-31026	JAMES RANCH UNIT #020	6 235	31E	4	EOG RESOURCES INC	9999 V	[96336] LOS MEDANOS, WOLF CAMP, SOUTH	Oil	Cancelled APD
30-015-31035	JAMES RANCH UNIT #261	6 235	31E	4	BEPCO, LP	9999	0 No Data	Oil	Cancelled APD
30-015-24062	JAMES RANCH UNIT #013	6 235	31E	5	XTO PERMIAN OPERATING LLC.	1982 V	[80520] LOS MEDANOS, ATOKA (GAS)	Gas	Active
30-015-29173	JAMES RANCH UNIT #076	6 235	31E	5	XTO PERMIAN OPERATING LLC.	1996 V	[40295] LOS MEDANOS, BONE SPRING; [50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST; [96336] LOS MEDANOS, WOLF CAMP, SOUTH	Oil	Active
30-015-20803	JAMES RANCH UNIT #004	6 235	31E	6	XTO PERMIAN OPERATING LLC.	1973 V	[80520] LOS MEDANOS, ATOKA (GAS); [80560] LOS MEDANOS, MORROW (GAS)	Gas	Active
30-015-35322	JAMES RANCH UNIT #085	6 235	31E	6	XTO PERMIAN OPERATING LLC.	2007	[50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST	Oil	Active
30-015-31767	JAMES RANCH UNIT #085C	6 235	31E	6	BEPCO, LP	9999	0 No Data	Oil	Cancelled APD
30-015-43316	MILLS RANCH SWD #001C	6 235	31E	6	OWL SWD OPERATING, LLC	9999 V	[96101] SWD, DEVONIAN	Salt Water Disposal	Cancelled APD
30-015-22897	PRE-ONGARD WELL #009	6 235	31E	C	PRE-ONGARD WELL OPERATOR	9999	0 No Data	Oil	Cancelled APD
30-015-27784	JAMES RANCH UNIT #017	6 235	31E	F	XTO PERMIAN OPERATING LLC.	1993 V	[40295] LOS MEDANOS, BONE SPRING; [50443] QUAHADA RIDGE, DELAWARE, SOUTHEAST; [50470] QUAHADA RIDGE, DELAWARE; [96336] LOS MEDANOS, WOLF CAMP, SOUTH	Oil	Active
30-015-21247	JAMES RANCH UNIT #007	6 235	31E	G	XTO PERMIAN OPERATING LLC.	1974 V	[40295] LOS MEDANOS, BONE SPRING	Oil	Active

30-015-27704	JAMES RANCH UNIT #030	6 23S	31E	J	XTO PERMIAN OPERATING LLC.	1993	V	[40295] LOS MEDANOS, BONE SPRING; [96336] LOS MEDANOS, WOLFCAMP, SOUTH	Oil	Active
30-015-33114	JAMES RANCH UNIT #075Q	6 23S	31E	K	XTO PERMIAN OPERATING LLC.	2004	V	[40295] LOS MEDANOS, BONE SPRING; [S0443] QUAHADA RIDGE, DELAWARE, SOUTHEAST; [96336] LOS MEDANOS, WOLFCAMP, SOUTH	Oil	Active
30-015-29508	JAMES RANCH UNIT #075	6 23S	31E	K	EOG RESOURCES INC	9999		0 No Data	Oil	Cancelled APD
30-015-31750	JAMES RANCH UNIT #075	6 23S	31E	K	BEPCO, LP	9999		0 No Data	Oil	Cancelled APD
30-015-24420	JAMES RANCH UNIT #014	6 23S	31E	N	XTO PERMIAN OPERATING LLC.	1983	V	[80560] LOS MEDANOS, MORROW (GAS)	Gas	Active
30-015-34277	JAMES RANCH UNIT #087	6 23S	31E	N	XTO PERMIAN OPERATING LLC.	2005		0 [40295] LOS MEDANOS, BONE SPRING; [40297] LOS MEDANOS, DELAWARE; [S0443] QUAHADA RIDGE, DELAWARE, SOUTHEAST; [96336] LOS MEDANOS, WOLFCAMP, SOUTH	Oil	Active
30-015-31029	JAMES RANCH UNIT #023	6 23S	31E	N	BEPCO, LP	9999		0 No Data	Oil	Cancelled APD
30-015-33619	JAMES RANCH UNIT #093	7 23S	31E	A	BEPCO, LP	9999		0 [80560] LOS MEDANOS, MORROW (GAS)	Gas	Cancelled APD
30-015-41590	MILLS RANCH SWD #001	7 23S	31E	A	OWL SWD OPERATING, LLC	9999	V	[96101] SWD, DEVONIAN	Salt Water Disposal	Cancelled APD
30-015-30830	JAMES RANCH UNIT #032	36 22S	30E	O	XTO PERMIAN OPERATING LLC.	2000	V	[S0443] QUAHADA RIDGE, DELAWARE, SOUTHEAST	Oil	Active
30-015-04735	JAMES RANCH UNIT #001	36 22S	30E	O	XTO PERMIAN OPERATING LLC.	1956	V	[80520] LOS MEDANOS, ATOKA (GAS)	Miscellaneous	Zones Permanently Plugged
30-015-27703	JAMES RANCH UNIT #027	36 22S	30E	I	XTO PERMIAN OPERATING LLC.	2000	V	[96336] LOS MEDANOS, WOLFCAMP, SOUTH	Oil	Active
30-015-31064	JAMES RANCH UNIT #034	36 22S	30E	P	XTO PERMIAN OPERATING LLC.	2000	V	[S0443] QUAHADA RIDGE, DELAWARE, SOUTHEAST	Oil	Active
30-015-36722	JAMES RANCH UNIT #112H	36 22S	30E	P	XTO PERMIAN OPERATING LLC.	2009		0 [S0443] QUAHADA RIDGE, DELAWARE, SOUTHEAST	Oil	Active
30-015-42324	JAMES RANCH UNIT #195H	36 22S	30E	P	XTO PERMIAN OPERATING LLC.	2014	H	[40295] LOS MEDANOS, BONE SPRING; [96336] LOS MEDANOS, WOLFCAMP, SOUTH	Oil	Active
30-015-42756	JAMES RANCH UNIT #146H	36 22S	30E	P	XTO PERMIAN OPERATING LLC.	2017	H	[96336] LOS MEDANOS, WOLFCAMP, SOUTH	Oil	Active
30-015-27702	JAMES RANCH UNIT #034	36 22S	30E	P	EOG RESOURCES INC	9999		0 No Data	Oil	Cancelled APD

Complete Water Analysis Report

Customer: **XTO ENERGY INC**
 Region: **Carlsbad, NM**
 Location: **James Ranch Unit 29 Federal Lease**
 System: **Production System**

Equipment: **SWD**
 Sample Point: **Inlet**
 Sample ID: **AL07042**
 Acct Rep Email: **Anthony.Baeza@ecolab.com**

Collection Date: **06/12/2018**
 Receive Date: **06/21/2018**
 Report Date: **06/25/2018**
 Location Code: **373826**

Field Analysis

Bicarbonate	12 mg/L	Dissolved CO2	350 mg/L	Dissolved H2S	9 mg/L
Pressure Surface	20 psi	Temperature	98 ° F	pH of Water	6.1
Oil per Day	0 B/D	Gas per Day	0 Mcf/D	Water per Day	6500 B/D

Sample Analysis

Calculated Gaseous CO2	0.12%	Calculated pH	6.10	Conductivity (Calculated)	437728 µS - cm3
Ionic Strength	5.82	Resistivity	0.023 ohms - m	Specific Gravity	1.200
Total Dissolved Solids	280169.9 mg/L				

Cations

Iron	15.7 mg/L	Manganese	8.03 mg/L	Barium	3.97 mg/L
Strontium	1480 mg/L	Calcium	27900 mg/L	Magnesium	4440 mg/L
Sodium	71900.00 mg/L	Potassium	1800 mg/L	Boron	28.7 mg/L
Lithium	10.8 mg/L	Copper	0.01 mg/L	Nickel	0.055 mg/L
Zinc	0.138 mg/L	Lead	0.033 mg/L	Cobalt	0.053 mg/L
Chromium	0.003 mg/L	Silicon	3.02 mg/L	Aluminum	Not Detected mg/L
Molybdenum	0.023 mg/L	Phosphorus	Not Detected mg/L		

Anions

Bromide	1832.85 mg/L	Chloride	174225 mg/L	Sulfate	184.663 mg/L
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PTB Value

	Barite PTB	Calcite PTB	Celestite PTB	Gypsum PTB	Halite PTB	Iron Carbonate PTB	Iron Sulfide PTB
50°	2.13	0.13	89.54	31.55	0.00	0.00	2.08
75°	1.79	0.00	70.73	0.00	0.00	0.00	1.75
100°	1.19	0.00	54.86	0.00	0.00	0.00	1.42
125°	0.28	0.00	43.34	0.00	0.00	0.00	1.11
150°	0.00	0.00	35.91	0.00	0.00	0.00	0.88
175°	0.00	0.00	31.81	0.00	0.00	0.00	0.66
200°	0.00	0.00	29.33	0.00	0.00	0.00	0.53
225°	0.00	0.00	28.19	0.00	0.00	0.00	0.45
250°	0.00	0.00	27.59	0.00	0.00	0.00	0.41
275°	0.00	0.00	27.18	0.00	0.00	0.00	0.41
300°	0.00	0.00	26.83	0.00	0.00	0.00	0.43
325°	0.00	0.00	26.54	0.00	0.00	0.00	0.46
350°	0.00	0.00	26.37	0.00	0.00	0.00	0.48
375°	0.00	0.00	26.26	0.00	0.00	0.00	0.47
400°	0.00	0.00	25.92	0.00	0.00	0.00	1.14

Saturation Index

	Barite SI	Calcite SI	Celestite SI	Gypsum SI	Halite SI	Iron Carbonate SI	Iron Sulfide SI
50°	1.01	0.05	0.60	0.14	-0.26	-1.89	1.55
75°	0.62	-0.14	0.40	-0.03	-0.29	-1.96	1.16
100°	0.31	-0.30	0.28	-0.13	-0.31	-2.03	0.85
125°	0.05	-0.44	0.20	-0.19	-0.33	-2.09	0.62
150°	-0.15	-0.55	0.16	-0.24	-0.35	-2.14	0.45
175°	-0.33	-0.64	0.14	-0.29	-0.37	-2.18	0.34
200°	-0.48	-0.70	0.14	-0.35	-0.39	-2.22	0.26
225°	-0.61	-0.75	0.12	-0.41	-0.41	-2.26	0.22
250°	-0.72	-0.78	0.12	-0.48	-0.43	-2.30	0.20
275°	-0.83	-0.80	0.12	-0.55	-0.45	-2.35	0.20
300°	-0.93	-0.81	0.12	-0.60	-0.47	-2.40	0.20
325°	-1.04	-0.82	0.12	-0.63	-0.48	-2.47	0.21
350°	-1.14	-0.83	0.11	-0.60	-0.51	-2.56	0.22
375°	-1.25	-0.86	0.11	-0.51	-0.52	-2.67	0.21
400°	-1.37	0.00	0.11	-0.33	-0.53	0.00	0.48

Scaling predictions calculated using Scale Soft Pitzer 2017

Scaling predictions dependent on provided field data. Incomplete/partial field data may impact results generated by scaling software.

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06/27/2018

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Exhibit D

Customer: **XTO ENERGY INC**

Region: **Carlsbad, NM**

Location: **James Ranch Unit 29 Federal Lease**

System: **Production System**

Equipment: **SWD**

Sample Point: **Inlet**

Sample ID: **AL07042**

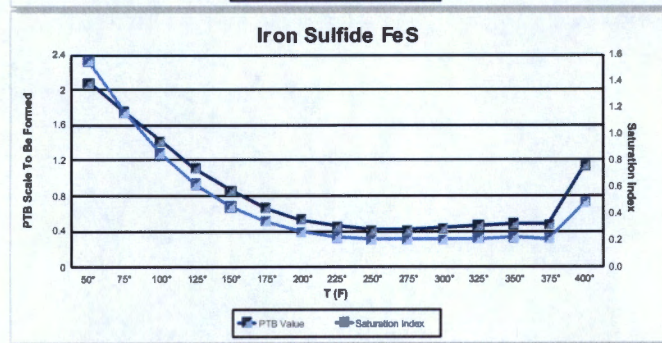
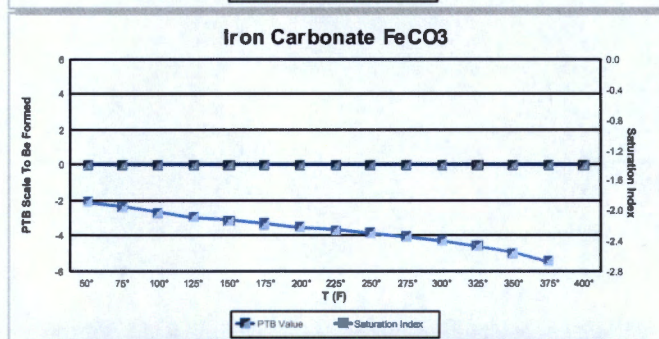
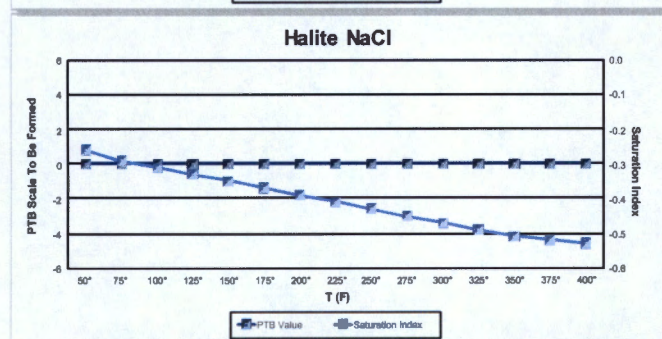
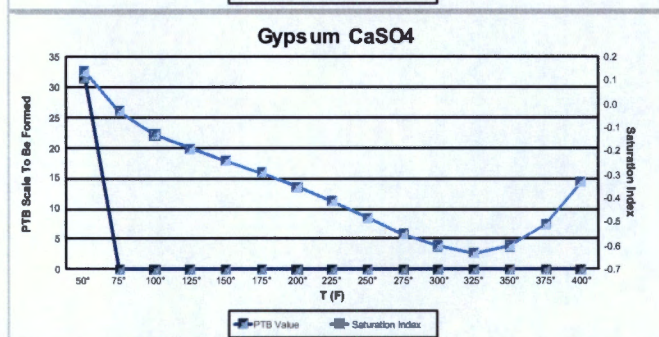
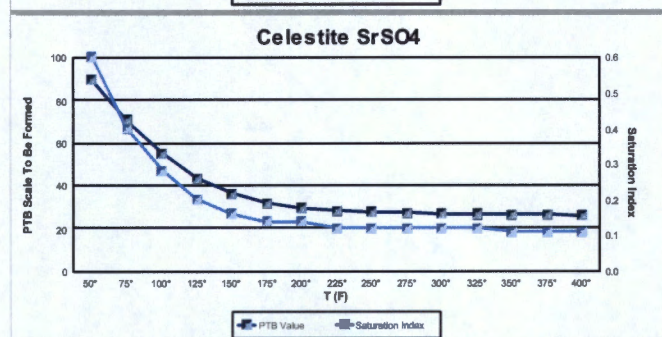
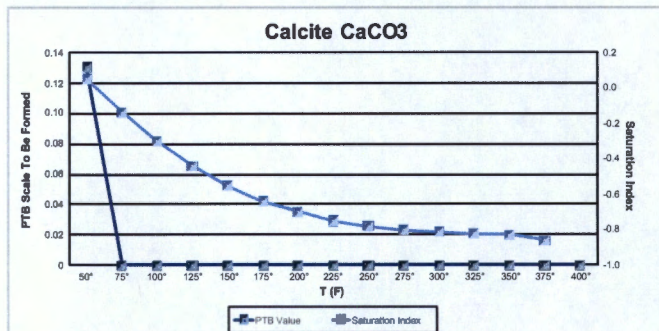
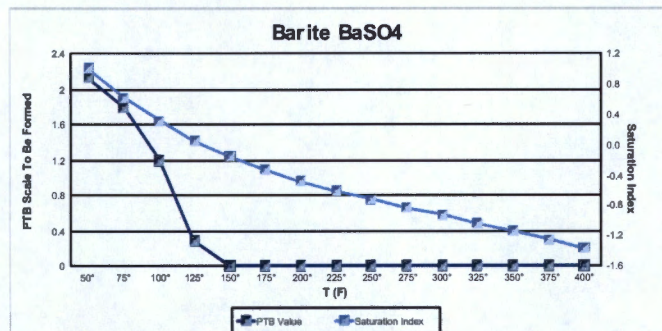
Acct Rep Email: **Anthony.Baeza@ecolab.com**

Collection Date: **06/12/2018**

Receive Date: **06/21/2018**

Report Date: **06/25/2018**

Location Code: **373826**



Comments

Scaling predictions calculated using Scale Soft Pitzer 2017

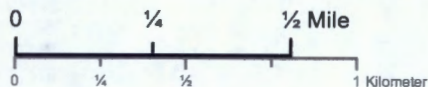
Scaling predictions dependent on provided field data. Incomplete/partial field data may impact results generated by scaling software.

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Water Well Review



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Exhibit E



New Mexico Office of the State Engineer

Water Right Summary




WR File Number: C 03668 **Subbasin:** C **Cross Reference:** -
Primary Purpose: STK 72-12-1 LIVESTOCK WATERING
Primary Status: PMT PERMIT
Total Acres: **Subfile:** - **Header:** -
Total Diversion: 3 **Cause/Case:** -
Owner: J T MILLS 2005 GST TRUST
Contact: STACY MILLS TRUSTEE

Documents on File

Trn #	Doc	File/Act	Status		Transaction Desc.	From/		Acres	Diversion	Consumptive
			1	2		To				
534227	72121	2013-09-19	PMT	APR	C 03668 POD1	T			3	

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			
C 02492 POD2		Shallow	3	2	2	07	23S	31E	611767	3576996	 SEE COMMENTS

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.

6/20/19 10:53 AM

 WATER RIGHT
SUMMARY



New Mexico Office of the State Engineer

Water Right Summary



WR File Number: C 03520 **Subbasin:** C **Cross Reference:** -
Primary Purpose: STK 72-12-1 LIVESTOCK WATERING
Primary Status: EXP EXPIRED
Total Acres: **Subfile:** - **Header:** -
Total Diversion: 0 **Cause/Case:** -
Owner: U.S. DEPT. OF INTERIOR BLM
Contact: STEVE DALY

Documents on File

Trn #	Doc	File/Act	Status		Transaction Desc.	From/		Acres	Diversion	Consumptive
			1	2		To				
487244	72121	2011-10-27	EXP	EXP	C 03520: STOCK	T			3	

Current Points of Diversion

POD Number	Well Tag	Source	Q				(NAD83 UTM in meters)		Other Location Desc
			64	Q16	Q4	Sec Tw	X	Y	
C 03520 POD1			3	1	1	07 23S 31E	610733	3576905	S/2 S/2 OF LOT 1

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.

6/19/19 3:52 PM

 WATER RIGHT
SUMMARY



LT Environmental, Inc.

3300 North A Street
Building 1, Unit 103
Midland, TX 79705
432.238.4292

August 12, 2019

Stacy Mills
16 Mills Ranch Road
Loving, New Mexico 88256

RE: Domestic Water Well Sampling

Dear Mr. Mills:

LT Environmental, Inc. (LTE), on behalf of XTO Energy (XTO), collected a water sample from the water well on your property in Loving, New Mexico on July 2, 2019. Sampling was conducted to comply with the New Mexico Oil Conservation Division (NMOCD) requirements on an application for authorization to inject to provide chemical analysis of fresh water from two or more wells within one mile of any injection well. This letter summarizes the laboratory analytical results for the water well sample.

During sampling, LTE measured the flow rate, pH, temperature, and conductivity using field instruments. Laboratory-prepared containers were filled with water samples and submitted to Hall Environmental Analysis Laboratory (HEAL), in Albuquerque, New Mexico, for analysis of general water quality and constituents that may be associated with oil and gas production including: Dissolved Methane, Ethane, Ethene, Acetylene, Propane, Diesel Range Organics (DRO), Motor Oil Range Organics (MRO), Gasoline Range Organics (GRO), Methyl tert-butyl ether (MTBE), Benzene, Toluene, Ethylbenzene, Xylenes, Total, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Alkalinity, Total, Alkalinity, Bicarbonate, Alkalinity, Carbonate, Bromide, Calcium, Chloride, Conductivity, Iron, Magnesium, Manganese, Nitrogen, Nitrite (as N), Nitrogen, Nitrate (as N), pH, Phosphorus, Sodium, Sulfate, Total Dissolved Solids, Bacteria, Total Coliform, Bacteria, E. coli.

The water sample was received by HEAL on July 3, 2019. Due to a 24-hour hold time requirement and the federal holiday on July 3, 2019, HEAL did not run coliform analysis. LTE returned to collect a subsequent sample on July 10, 2019, to be analyzed for total coliform and E. Coli. As part of XTO's voluntary sampling program for wells sampled before drilling and production occur, isotopic analyses of methane are performed to determine gas origin (thermogenic, biogenic, or an intermediate mix of both) if the methane concentration is greater than 2.0 milligram per liter (mg/L). Methane was not detected in your well; therefore, a free-gas sample was not submitted for further analysis.

The field measurements and results of the laboratory analysis are summarized in the attached table. The laboratory analytical reports are provided as an attachment to this letter. For comparison purposes, LTE has included United States Environmental Protection Agency (USEPA)





Drinking Water Standard, and of the USEPA Secondary Drinking Water Standard, where applicable, for each analysis conducted. While the regulatory limits presented may not be the applicable standard for your water use, it does provide you with values with which you can compare your water quality to help you better understand the results of this sampling event. Additionally, the following resource is available for reference relating to the attached results: https://www.env.nm.gov/drinking_water/private-wells/.

LTE and XTO appreciate your cooperation in this sampling effort. If you have any questions, please do not hesitate to contact me at aager@ltenv.com or 970-385-1096.

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in black ink that reads "Ashley L. Ager". The signature is written in a cursive, flowing style.

Ashley Ager
Senior Geologist

Attachments (2)

cc: Kyle Littrell, XTO



TABLE 1
DOMESTIC WATER WELL SAMPLING ANALYTICAL RESULTS

MILLS RANCH
LOVING, NEW MEXICO
XTO ENERGY, INC.

Sample Date: July 2, 2019 and July 10, 2019

Sample ID: Sample 1

Water Well Location: 16 Mills Ranch Rd, Loving, NM 88256

Analyte	USEPA Drinking Water Standard	USEPA Secondary Drinking Water Standard	Result	Units
Field Measurements:				
Flow Rate	NE	NE	1.25	gpm
pH	NE	NE	7.24	pH units
Temperature	NE	NE	20.9	°C
Conductivity	NE	NE	4,285	µS/cm
Laboratory Analytical Results:				
Dissolved Methane	NE	NE	<0.0100	mg/L
Ethane	NE	NE	<0.0130	mg/L
Ethene	NE	NE	<0.0130	mg/L
Acetylene	NE	NE	<0.0200	mg/L
Propane	NE	NE	<0.0186	mg/L
Diesel Range Organics (DRO)	NE	NE	<1.0	mg/L
Motor Oil Range Organics (MRO)	NE	NE	<5.0	mg/L
Gasoline Range Organics (GRO)	NE	NE	<0.050	mg/L
Methyl tert-butyl ether (MTBE)	NE	NE	<2.5	µg/L
Benzene	0.005	NE	<0.001	mg/L
Toluene	1	NE	<0.001	mg/L
Ethylbenzene	0.7	NE	<0.001	mg/L
Xylenes, Total	10	NE	<0.002	mg/L
1,2,4-Trimethylbenzene	NE	NE	<1.0	µg/L
1,3,5-Trimethylbenzene	NE	NE	<1.0	µg/L
Alkalinity, Total	NE	NE	158.7	mg/L
Alkalinity, Bicarbonate	NE	NE	158.7	mg/L
Alkalinity, Carbonate	NE	NE	<2.0	mg/L
Bromide	NE	NE	0.82	mg/L
Calcium	NE	NE	570.0	mg/L
Chloride	NE	250	440	mg/L
Conductivity	NE	NE	4,300	µmhos/cm
Iron	NE	0.3	<0.020	mg/L
Magnesium	NE	NE	170	mg/L

TABLE 1
DOMESTIC WATER WELL SAMPLING ANALYTICAL RESULTS

MILLS RANCH
LOVING, NEW MEXICO
XTO ENERGY, INC.

Sample Date: July 2, 2019 and July 10, 2019

Sample ID: Sample 1

Water Well Location: 16 Mills Ranch Rd, Loving, NM 88256

Analyte	USEPA Drinking Water Standard	USEPA Secondary Drinking Water Standard	Result	Units
Manganese	NE	0.05	<0.0020	mg/L
Nitrogen, Nitrite (as N)	1	NE	<2.0	mg/L
Nitrogen, Nitrate (as N)	10	NE	19	mg/L
pH	NE	6.5-8.5	7.61	pH Units
Phosphorus	NE	NE	<10	mg/L
Sodium	NE	30-60	250	mg/L
Sulfate	NE	250	2,100	mg/L
Total Dissolved Solids	NE	500	3,770	mg/L
Bacteria, Total Coliform	5%	0%	Absent	% of samples TC-positive
Bacteria, E. coli	NE	NE	Absent	NA

Notes:

gpm – gallons per minute

mg/L – milligrams per liter

NA – not applicable

NE – not established

TC - Total Coliform

USEPA – United States Environmental Protection Agency

µg/L - micrograms per liter

µmhos/cm – micromhos per centimeter

µS/cm – micro Siemens per centimeter

°C– degrees Celsius

< – Not detected above laboratory reporting limit



*Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com*

July 18, 2019

Brooke Herb
XTO Energy Carlsbad
3104 E. Greene St.
Carlsbad, NM 88220
TEL: (970) 317-1867
FAX

RE: Mills Ranch Well Sampling

OrderNo.: 1907192

Dear Brooke Herb:

Hall Environmental Analysis Laboratory received 2 sample(s) on 7/3/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1907192

Date Reported: 7/18/2019

CLIENT: XTO Energy Carlsbad

Client Sample ID: Sample 1

Project: Mills Ranch Well Sampling

Collection Date: 7/2/2019 10:15:00 AM

Lab ID: 1907192-001

Matrix: AQUEOUS

Received Date: 7/3/2019 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: BRM
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	7/9/2019 5:35:45 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	7/9/2019 5:35:45 PM
Surr: DNOP	106	70-130		%Rec	1	7/9/2019 5:35:45 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	7/8/2019 9:50:38 AM
Surr: BFB	92.1	72.8-125		%Rec	1	7/8/2019 9:50:38 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	7/8/2019 9:50:38 AM
Benzene	ND	1.0		µg/L	1	7/8/2019 9:50:38 AM
Toluene	ND	1.0		µg/L	1	7/8/2019 9:50:38 AM
Ethylbenzene	ND	1.0		µg/L	1	7/8/2019 9:50:38 AM
Xylenes, Total	ND	2.0		µg/L	1	7/8/2019 9:50:38 AM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/8/2019 9:50:38 AM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/8/2019 9:50:38 AM
Surr: 4-Bromofluorobenzene	95.7	80-120		%Rec	1	7/8/2019 9:50:38 AM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	440	25	*	mg/L	50	7/15/2019 9:23:59 PM
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	7/3/2019 10:39:28 PM
Bromide	0.82	0.10		mg/L	1	7/3/2019 10:02:25 PM
Nitrogen, Nitrate (As N)	19	2.0	*	mg/L	20	7/3/2019 10:39:28 PM
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	7/3/2019 10:39:28 PM
Sulfate	2100	25	*	mg/L	50	7/15/2019 9:23:59 PM
EPA METHOD 200.7: METALS						Analyst: ELS
Calcium	570	10		mg/L	10	7/9/2019 11:54:21 AM
Iron	ND	0.020		mg/L	1	7/8/2019 4:01:24 PM
Magnesium	170	5.0		mg/L	5	7/8/2019 4:03:44 PM
Manganese	ND	0.0020		mg/L	1	7/8/2019 4:01:24 PM
Sodium	250	5.0		mg/L	5	7/8/2019 4:03:44 PM
SM2510B: SPECIFIC CONDUCTANCE						Analyst: JRR
Conductivity	4300	5.0		µmhos/c	1	7/9/2019 7:02:35 PM
SM4500-H+B / 9040C: PH						Analyst: JRR
pH	7.61		H	pH units	1	7/9/2019 7:02:35 PM
SM2320B: ALKALINITY						Analyst: JRR
Bicarbonate (As CaCO3)	158.7	20.00		mg/L Ca	1	7/9/2019 7:02:35 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	7/9/2019 7:02:35 PM
Total Alkalinity (as CaCO3)	158.7	20.00		mg/L Ca	1	7/9/2019 7:02:35 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1907192

Date Reported: 7/18/2019

CLIENT: XTO Energy Carlsbad

Client Sample ID: Sample 1

Project: Mills Ranch Well Sampling

Collection Date: 7/2/2019 10:15:00 AM

Lab ID: 1907192-001

Matrix: AQUEOUS

Received Date: 7/3/2019 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: CJS
Total Dissolved Solids	3770	20.0	*	mg/L	1	7/11/2019 12:34:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

* Value exceeds Maximum Contaminant Level
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1907192

Date Reported: 7/18/2019

CLIENT: XTO Energy Carlsbad

Client Sample ID: Trip Blank

Project: Mills Ranch Well Sampling

Collection Date:

Lab ID: 1907192-002

Matrix: TRIP BLANK

Received Date: 7/3/2019 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	7/8/2019 10:14:01 AM
Benzene	ND	1.0		µg/L	1	7/8/2019 10:14:01 AM
Toluene	ND	1.0		µg/L	1	7/8/2019 10:14:01 AM
Ethylbenzene	ND	1.0		µg/L	1	7/8/2019 10:14:01 AM
Xylenes, Total	ND	2.0		µg/L	1	7/8/2019 10:14:01 AM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/8/2019 10:14:01 AM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/8/2019 10:14:01 AM
Surr: 4-Bromofluorobenzene	91.8	80-120		%Rec	1	7/8/2019 10:14:01 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1907192

18-Jul-19

Client: XTO Energy Carlsbad
Project: Mills Ranch Well Sampling

Sample ID: MB-C	SampType: MBLK	TestCode: EPA Method 200.7: Metals								
Client ID: PBW	Batch ID: C61217	RunNo: 61217								
Prep Date:	Analysis Date: 7/8/2019	SeqNo: 2075109 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Sodium	ND	1.0								

Sample ID: LLLCS-C	SampType: LCSLL	TestCode: EPA Method 200.7: Metals								
Client ID: BatchQC	Batch ID: C61217	RunNo: 61217								
Prep Date:	Analysis Date: 7/8/2019	SeqNo: 2075110 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Iron	0.021	0.020	0.02000	0	104	50	150			
Magnesium	ND	1.0	0.5000	0	104	50	150			
Manganese	0.0020	0.0020	0.002000	0	102	50	150			
Sodium	ND	1.0	0.5000	0	109	50	150			

Sample ID: LCS-C	SampType: LCS	TestCode: EPA Method 200.7: Metals								
Client ID: LCSW	Batch ID: C61217	RunNo: 61217								
Prep Date:	Analysis Date: 7/8/2019	SeqNo: 2075111 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Iron	0.50	0.020	0.5000	0	99.7	85	115			
Magnesium	50	1.0	50.00	0	100	85	115			
Manganese	0.49	0.0020	0.5000	0	99.0	85	115			
Sodium	50	1.0	50.00	0	99.0	85	115			

Sample ID: MB-A	SampType: MBLK	TestCode: EPA Method 200.7: Metals								
Client ID: PBW	Batch ID: A61238	RunNo: 61238								
Prep Date:	Analysis Date: 7/9/2019	SeqNo: 2075929 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	ND	1.0								
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Sample ID: LLLCS-A	SampType: LCSLL	TestCode: EPA Method 200.7: Metals								
Client ID: BatchQC	Batch ID: A61238	RunNo: 61238								
Prep Date:	Analysis Date: 7/9/2019	SeqNo: 2075931 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	ND	1.0	0.5000	0	101	50	150			
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Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Limit |
| S % Recovery outside of range due to dilution or matrix | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1907192

18-Jul-19

Client: XTO Energy Carlsbad
Project: Mills Ranch Well Sampling

Sample ID: LCS-A	SampType: LCS		TestCode: EPA Method 200.7: Metals							
Client ID: LCSW	Batch ID: A61238		RunNo: 61238							
Prep Date:	Analysis Date: 7/9/2019		SeqNo: 2075933		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	49	1.0	50.00	0	97.3	85	115			

Sample ID: LCSD-A	SampType: LCSD		TestCode: EPA Method 200.7: Metals							
Client ID: LCSS02	Batch ID: A61238		RunNo: 61238							
Prep Date:	Analysis Date: 7/9/2019		SeqNo: 2075935		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	48	1.0	50.00	0	96.3	85	115	1.00	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1907192

18-Jul-19

Client: XTO Energy Carlsbad
Project: Mills Ranch Well Sampling

Sample ID: MB	SampType: MBLK	TestCode: EPA Method 300.0: Anions								
Client ID: PBW	Batch ID: A61165	RunNo: 61165								
Prep Date:	Analysis Date: 7/3/2019	SeqNo: 2073089 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								

Sample ID: LCS	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSW	Batch ID: A61165	RunNo: 61165								
Prep Date:	Analysis Date: 7/3/2019	SeqNo: 2073090 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.98	0.10	1.000	0	98.3	90	110			
Bromide	2.5	0.10	2.500	0	98.1	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	102	90	110			
Phosphorus, Orthophosphate (As P)	4.9	0.50	5.000	0	98.8	90	110			

Sample ID: 1907192-001AMS	SampType: MS	TestCode: EPA Method 300.0: Anions								
Client ID: Sample 1	Batch ID: A61165	RunNo: 61165								
Prep Date:	Analysis Date: 7/3/2019	SeqNo: 2073107 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	1.0	0.10	1.000	0.03508	96.1	53.4	119			
Bromide	3.2	0.10	2.500	0.8169	94.1	81.9	109			

Sample ID: 1907192-001AMSD	SampType: MSD	TestCode: EPA Method 300.0: Anions								
Client ID: Sample 1	Batch ID: A61165	RunNo: 61165								
Prep Date:	Analysis Date: 7/3/2019	SeqNo: 2073108 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	1.0	0.10	1.000	0.03508	96.4	53.4	119	0.303	20	
Bromide	3.2	0.10	2.500	0.8169	94.3	81.9	109	0.178	20	

Sample ID: MB	SampType: MBLK	TestCode: EPA Method 300.0: Anions								
Client ID: PBW	Batch ID: R61386	RunNo: 61386								
Prep Date:	Analysis Date: 7/15/2019	SeqNo: 2081009 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								

Qualifiers:

* Value exceeds Maximum Contaminant Level
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1907192

18-Jul-19

Client: XTO Energy Carlsbad
Project: Mills Ranch Well Sampling

Sample ID: LCS		SampType: LCS		TestCode: EPA Method 300.0: Anions						
Client ID: LCSW		Batch ID: R61386		RunNo: 61386						
Prep Date:		Analysis Date: 7/15/2019		SeqNo: 2081010		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	95.4	90	110			
Sulfate	9.8	0.50	10.00	0	98.1	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1907192

18-Jul-19

Client: XTO Energy Carlsbad
Project: Mills Ranch Well Sampling

Sample ID: LCS-46076	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range								
Client ID: LCSW	Batch ID: 46076	RunNo: 61236								
Prep Date: 7/9/2019	Analysis Date: 7/9/2019	SeqNo: 2076127 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.7	1.0	5.000	0	114	71.8	135			
Surr: DNOP	0.55		0.5000		111	70	130			

Sample ID: MB-46076	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range								
Client ID: PBW	Batch ID: 46076	RunNo: 61236								
Prep Date: 7/9/2019	Analysis Date: 7/9/2019	SeqNo: 2076128 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.0		1.000		104	70	130			

Sample ID: 1907192-001DMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range								
Client ID: Sample 1	Batch ID: 46076	RunNo: 61236								
Prep Date: 7/9/2019	Analysis Date: 7/9/2019	SeqNo: 2076753 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	4.1	1.0	5.000	0	81.6	68.1	137			
Surr: DNOP	0.41		0.5000		82.9	70	130			

Sample ID: 1907192-001DMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range								
Client ID: Sample 1	Batch ID: 46076	RunNo: 61236								
Prep Date: 7/9/2019	Analysis Date: 7/9/2019	SeqNo: 2076754 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.5	1.0	5.000	0	111	68.1	137	30.1	20	R
Surr: DNOP	0.51		0.5000		102	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1907192

18-Jul-19

Client: XTO Energy Carlsbad
Project: Mills Ranch Well Sampling

Sample ID: RB	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBW	Batch ID: G61222	RunNo: 61222								
Prep Date:	Analysis Date: 7/8/2019	SeqNo: 2075475			Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		89.9	72.8	125			

Sample ID: 2.5UG GRO LCS	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSW	Batch ID: G61222	RunNo: 61222								
Prep Date:	Analysis Date: 7/8/2019	SeqNo: 2075476			Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.42	0.050	0.5000	0	84.2	77.7	130			
Surr: BFB	21		20.00		105	72.8	125			

Qualifiers:

* Value exceeds Maximum Contaminant Level
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1907192

18-Jul-19

Client: XTO Energy Carlsbad
Project: Mills Ranch Well Sampling

Sample ID: RB	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBW	Batch ID: B61222	RunNo: 61222								
Prep Date:	Analysis Date: 7/8/2019	SeqNo: 2075488 Units: µg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	2.5								
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
Surr: 4-Bromofluorobenzene	19		20.00		93.4	80	120			

Sample ID: 100NG BTEX LCS	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSW	Batch ID: B61222	RunNo: 61222								
Prep Date:	Analysis Date: 7/8/2019	SeqNo: 2075489 Units: µg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	17	2.5	20.00	0	83.3	64.5	120			
Benzene	19	1.0	20.00	0	94.1	80	120			
Toluene	20	1.0	20.00	0	98.9	80	120			
Ethylbenzene	20	1.0	20.00	0	100	80	120			
Xylenes, Total	60	2.0	60.00	0	100	80	120			
1,2,4-Trimethylbenzene	20	1.0	20.00	0	102	80	120			
1,3,5-Trimethylbenzene	20	1.0	20.00	0	101	80	120			
Surr: 4-Bromofluorobenzene	20		20.00		98.6	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1907192

18-Jul-19

Client: XTO Energy Carlsbad
Project: Mills Ranch Well Sampling

Sample ID: lcs-1 99.8uS eC		SampType: lcs		TestCode: SM2510B: Specific Conductance						
Client ID: LCSW		Batch ID: R61255		RunNo: 61255						
Prep Date:		Analysis Date: 7/9/2019		SeqNo: 2076410		Units: µmhos/cm				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	100	5.0	99.80	0	99.8	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1907192

18-Jul-19

Client: XTO Energy Carlsbad
Project: Mills Ranch Well Sampling

Sample ID: mb-1 alk	SampType: mbk	TestCode: SM2320B: Alkalinity								
Client ID: PBW	Batch ID: R61255	RunNo: 61255								
Prep Date:	Analysis Date: 7/9/2019	SeqNo: 2076376 Units: mg/L CaCO3								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: lcs-1 alk	SampType: lcs	TestCode: SM2320B: Alkalinity								
Client ID: LCSW	Batch ID: R61255	RunNo: 61255								
Prep Date:	Analysis Date: 7/9/2019	SeqNo: 2076377 Units: mg/L CaCO3								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	76.28	20.00	80.00	0	95.4	90	110			

Sample ID: mb-2 alk	SampType: mbk	TestCode: SM2320B: Alkalinity								
Client ID: PBW	Batch ID: R61255	RunNo: 61255								
Prep Date:	Analysis Date: 7/9/2019	SeqNo: 2076399 Units: mg/L CaCO3								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: lcs-2 alk	SampType: lcs	TestCode: SM2320B: Alkalinity								
Client ID: LCSW	Batch ID: R61255	RunNo: 61255								
Prep Date:	Analysis Date: 7/9/2019	SeqNo: 2076400 Units: mg/L CaCO3								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	77.44	20.00	80.00	0	96.8	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1907192

18-Jul-19

Client: XTO Energy Carlsbad
Project: Mills Ranch Well Sampling

Sample ID: MB-46067	SampType: MBLK	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: PBW	Batch ID: 46067	RunNo: 61310								
Prep Date: 7/9/2019	Analysis Date: 7/11/2019	SeqNo: 2078328		Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID: LCS-46067		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids						
Client ID: LCSW		Batch ID: 46067		RunNo: 61310						
Prep Date: 7/9/2019		Analysis Date: 7/11/2019		SeqNo: 2078329		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

1907192-001E SAMPLE 1

Collected date/time: 07/02/19 10:15

SAMPLE RESULTS - 01

L1116609

ONE LAB. NATIONWIDE



Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Methane	ND		0.0100	1	07/10/2019 11:45	WG1308730
Ethane	ND		0.0130	1	07/10/2019 11:45	WG1308730
Ethene	ND		0.0130	1	07/10/2019 11:45	WG1308730
Acetylene	ND		0.0200	1	07/10/2019 11:45	WG1308730
Propane	ND		0.0186	1	07/10/2019 11:45	WG1308730

Te

Ss

Cn

Sr

Qc

GI

AI

Sc

ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1116609

DATE/TIME:

07/11/19 09:35

WG1308780

Volatile Organic Compounds (GC) by Method RSK175

QUALITY CONTROL SUMMARY

L1116609-01

ONE LAB NATIONWIDE



Method Blank (MB)

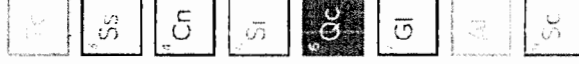
(MB) R3429281-1 07/10/19 11:33

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Methane	U		0.00291	0.0100
Ethane	U		0.00407	0.0130
Ethene	U		0.00426	0.0130
Propane	U		0.00548	0.0186
Acetylene	U		0.00560	0.0200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSd)

(LCS) R3429281-2 07/10/19 13:14 • (LCSd) R3429281-3 07/10/19 13:18

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Methane	0.0678	0.0723	0.0741	107	109	85.0-115			2.50	20
Ethane	0.129	0.117	0.120	90.8	92.7	85.0-115			1.99	20
Ethene	0.127	0.116	0.118	91.3	93.3	85.0-115			2.10	20
Propane	0.186	0.169	0.174	90.8	93.6	85.0-115			2.99	20
Acetylene	0.208	0.184	0.187	88.5	89.8	85.0-115			1.47	20



ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1116609

DATE/TIME:

07/11/19 09:35



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Te

Ss

Cn

Sr

Qc

Gl

Sc

Sc



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: XTO ENERGY CARLSBA

Work Order Number: 1907192

RcptNo: 1

Received By: Desiree Dominguez 7/3/2019 9:15:00 AM

Completed By: Michelle Garcia 7/3/2019 2:35:41 PM

Reviewed By: YC 7/3/19/20 7/3/19

Michelle Garcia

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? FedEx

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☒ No ☒ DAD 7/3/19 NA ☐
9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels? Yes ☒ No ☐ # of preserved bottles checked for pH: 2
(< 12 or > 12 unless noted)
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐ Adjusted? YES
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met? Yes ☒ No ☐ Checked by: DAD 7/3/19/ENM
(If no, notify customer for authorization.) 7/5/19

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

16. Additional remarks: Added approx. 5mL HNO_3 to sample C01 B for pH L2.

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.2	Good	Yes			

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Chain-of-Custody Record						
Client: XTO Energy - Kyle Little						
Mailing Address: 3104 E Green						
St. Charles NM 88220						
Phone #: 970 317 1867						
email or Fax#:						
QA/QC Package: <input type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation) <input checked="" type="checkbox"/> Accreditation: <input type="checkbox"/> Az Compliance <input type="checkbox"/> NELAC <input type="checkbox"/> Other <input type="checkbox"/> EDD (Type) _____						
Turn-Around Time: _____ <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush Project Name: Miller Ranch Well sampling Project #: 012919146 Project Manager: Brooke Herb						
Sampler: L. Laumbach On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No # of Coolers: 1 Cooler Temp (including CF): 4.7 +2.5 = 5.2 (°C)						
Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
07/04/19	10:15	w	Sample 1	Amber	None	1907192
	10:15	w	Sample 4	HDPPE (2)	None	DOI
	10:18	w	Calchem	Sediment glass container w/ H ₂ O		
	10:18	w	Sample 1	41	H ₂ SO ₄	
	10:20	w	Sample 1	Voon 1/3	hydrochloric	
	10:20	w	Sample 1	Voon 2/3		
	10:20	w	Sample 1	Voon 3/3		
-	-	TB	Trip Blank	ENH 715/19		-002

Date:	Time:	Relinquished by:		Received by:		Date Time
07/04/19	13:20			Brooke Herb		07/04/19 13:20
Date:	Time:	Relinquished by:		Received by:		Date Time
				FedEx		7/13/19 9:15

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Alkalinity, conductivity, pH, TDS

chloride, bromide, nitrate/nitrite, sulfate, phosphorus, calcium
iron, magnesium, manganese, sodium

Total coliform, iron related bacteria, sulfate reducing
bacteria, slime forming bacteria



*Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com*

July 15, 2019

Brooke Herb
XTO Energy Carlsbad
3104 E. Greene St.
Carlsbad, NM 88220
TEL: (970) 317-1867
FAX:

RE: Mills Ranch Domestic Well Sampling

OrderNo.: 1907513

Dear Brooke Herb:

Hall Environmental Analysis Laboratory received 1 sample(s) on 7/11/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1907513

Date Reported: 7/15/2019

CLIENT: XTO Energy Carlsbad

Client Sample ID: Coliform

Project: Mills Ranch Domestic Well Sampling

Collection Date: 7/10/2019 2:25:00 PM

Lab ID: 1907513-001

Matrix: AQUEOUS

Received Date: 7/11/2019 9:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM 9223B TOTAL COLIFORM							Analyst: MRA
Total Coliform	Absent	0		P/A	1	7/12/2019 3:23:00 PM	46128
E. Coli	Absent	0		P/A	1	7/12/2019 3:23:00 PM	46128

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: XTO ENERGY CARLSBA

Work Order Number: 1907513

RcptNo: 1

Received By: Yazmine Garduno

7/11/2019 9:50:00 AM

Completed By: Leah Baca

7/11/2019 11:36:52 AM

Reviewed By:

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐

2. How was the sample delivered? UPS

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐

4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☐ No ☒ NA ☐

Not required

5. Sample(s) in proper container(s)? Yes ☒ No ☐

6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐

7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐

8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐

9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒

10. Were any sample containers received broken? Yes ☐ No ☒

11. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐

12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐

13. Is it clear what analyses were requested? Yes ☒ No ☐

14. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH: _____
(<2 or >12 unless noted)
Adjusted? _____
Checked by: ENH7/11/19

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	11.5	Good	Yes			

May 28, 2019

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

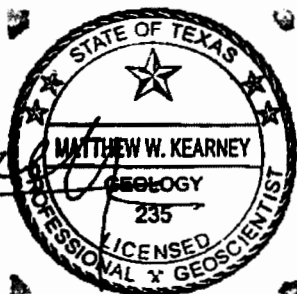
Re: Geology Statement per Question XII on the Application for Authorization to Inject Form C-108 for
XTO Energy Inc., an ExxonMobil subsidiary
James Ranch Unit (JRU) 6 Torino SWD 1,
Section 6, Township 23 South, Range 31 East,
Eddy County, New Mexico

To whom it may concern:

XTO Energy, Inc., an ExxonMobil subsidiary, has examined available geological data at the above-mentioned well located at 2,211 feet from north line and 1,402 feet from west line of Section 6, Township 23 South, Range 31 East, Eddy County, New Mexico; and finds no evidence of open faults or other hydrologic connection between the disposal zone and the underground sources of drinking water.

Respectively Submitted,


Matthew W. Kearney, P.G.



Division Geologist
XTO Energy Inc., an ExxonMobil subsidiary
22777 Springwoods Village Parkway
Spring, Texas 77389

Exhibit F

CARLSBAD
CURRENT-ARGUS

AFFIDAVIT OF PUBLICATION

Ad No.
0001289126

Tracie J Cherry
XTO ENERGY
6401 HOLIDAY HILL RD. BLDG 5

MIDLAND TX 79707

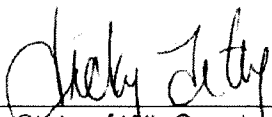
I, a legal clerk of the **Carlsbad Current-Argus**, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

06/21/19



Legal Clerk

Subscribed and sworn before me this
21st of June 2019.



State of WI, County of Brown
NOTARY PUBLIC

9/19/21

My Commission Expires

**NOTICE OF APPLICATION FOR WATER
DISPOSAL WELL PERMIT**

XTO Permian Operating, LLC. has applied to the New Mexico Oil Conservation Division for a permit to dispose of produced water into a porous formation not productive of oil or gas.

The applicant proposes to dispose of produced water into the James Ranch Unit 6 Torino SWD #1 (Siluro-Devonian and Fusselman Formations). The maximum injection pressure will be 3,122 psi and the maximum rate will be 40,000 bbls. produced water per day. The proposed disposal well is located approximately 17.5 miles Northeast of Malaga, New Mexico in Section 06, T23S, R31E, 2,211' FSL & 1,402' FWL, Eddy County, New Mexico. The produced water will be disposed at a subsurface depth of 15,610'-16,980'.

Any questions concerning this application should be directed to Tracie J Cherry, Regulatory Coordinator, XTO Energy, Inc, 6401 Holiday Hill Rd, Bldg 5, Midland, Texas 79707, (432) 221-7379.

Interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 S. St. Francis Dr., Santa Fe, New Mexico 87505 within 15 days.

June 21, 2019

Ad# 0001289126
P O : 1289126
of Affidavits : 0 00



Exhibit 6

CERTIFIED MAILING LIST
XTO PERMIAN OPERATING, LLC
JAMES RANCH UNIT 6 TORINO SWD #1

Surface Owner

Certified #7018 1130 0001 5531 4309

Jimmy Mills GST Trust
Stacy Mills
PO Box 1358
Loving, NM 88256

Offset Notices

Certified #7018 1130 0001 5531 4293

Bureau of Land Management
620 E. Greene Street
Carlsbad NM 88220-6292

Certified #7018 1130 0001 5531 4286

The New Mexico State Land Office
310 Old Santa Fe Trail
Santa Fe, NM 87501

Certified #7018 1130 0001 5531 4279

Oxy USA, Inc
Attn: Kelley Montgomery
PO Box 4294
Houston, TX 77210-4294

Certified #7018 1130 0001 5531 4262

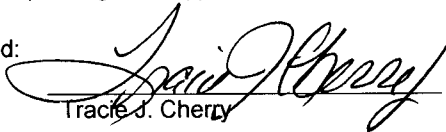
ConocoPhillips Company
Attn: Joey Moppert
935 N Eldridge Pkwy
Houston, TX 77079-2703

Certified #7018 1130 0001 5531 4255

Dr. Anderson Ward, Site Reg. Specialist
U.S. Department of Energy
4021 National Parks Highway
Carlsbad, NM 88221

I, Tracie J Cherry, do hereby certify the surface owner and offset parties for the well shown were furnished a copy of XTO Permian Operating, LLC's application for salt water disposal, via certified mail on this date.

Signed:


Tracie J. Cherry

Title: Regulatory Coordinator

Date:

06/21/19



Statements Regarding Seismicity

XTO has performed a seismicity risk assessment associated with the proposed James Ranch Unit 6 Torino 1 SWD Well by investigating historic seismicity, the presence of deep faulting, orientation of faults relative to the current stress regime and the potential for pore pressure build up that might cause a fault to slip. The analysis was done utilizing Stanford's Fault Slip Potential Tool version 2.0 (FSP; Walsh et al. 2017). To accommodate the tool's analytics, a simplified spatial relationship between the proposed well and possible faulting was established.

As part of our risk assessment we also consider mitigation options to address inherent uncertainties associated with the evaluation of possible seismicity. XTO has developed and will implement, as a precautionary measure, a seismicity monitoring plan to address the inherent uncertainty in the subsurface characterization, future rates of disposal and reservoir response.

A summary of the evaluation and seismicity monitoring plan follows:

Historic Seismicity

There are 3 seismic events reported by the USGS within ~6 miles of the proposed well. The New Mexico Tech Seismological Observatory determined that the March 18, 2012 event was linked to the collapse of a potash mine. Additionally, the Texas Bureau of Economic Geology's TexNet website shows no recent earthquakes in Texas within ~25 miles of the New Mexico border in the Delaware Basin (Figure 1).

Deep Faulting

Utilizing licensed 3D seismic data in the area of the proposed SWD well, XTO has interpreted two faults and/or linear features. Additionally, there are several seismic discontinuities that are interpreted as karst features in the Devonian section that do not appear to have significant lateral continuity.

Stress Regime

Utilizing data and analysis from Snee and Zoback, 'State of Stress in the Permian Basin, Texas and New Mexico: Implications for Induced Seismicity' (Feb 2018, The Leading Edge) the region of the proposed well is primarily a normal faulting regime (Figure 1).

Geomechanical Modeling

A simple screening level geometric / geomechanical assessment of the faults was performed utilizing the FSP tool. The models were run using the Aphi option which makes a simplifying and conservative assumption that faults are critically stressed and thus close to failure. Additionally, given the uncertainties in the geophysical interpretation and stress information, probabilistic scenarios were run varying fault and stress characteristics. FSP model deterministic and uncertainty inputs and results of the modeling are shown in Figure 2

Pore Pressure Modeling

A screening level investigation of possible pore pressure increases due to the proposed SWD well was performed utilizing the FSP tool and a range of reservoir parameters. For this screening level analysis a 'high-side', flat rate model was run assuming disposal of 40,000 BWPD beginning in

2019 and continuing at that rate until 2040. Sensitivities were performed by varying several reservoir parameters. Deterministic models, snap shots of the calculated pore pressure increases in 2025 and 2040 and cross-plots of pore pressure uncertainty analysis and fault slip probabilities are shown in Figure 3.

Integration of Geomechanical and Pore Pressure Modeling

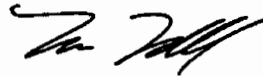
Integration of the geomechanical and hydrological elements of the assessment was performed using the FSP Integrated module. The results are shown in Figure 4. Note the y-axis in the lower right hand colored graphs in Figure 4 are labeled 'Fault Slip Potential'. This is a labeling convention within the tool but overstates the efficacy of the analysis. The FSP output should not be taken as calculating a reliable probability of a fault slipping but rather a screening method for assessing the relative potential of faults to slip.

Uncertainty

The analysis presented is a screening level approach that encompasses a range of uncertainties in several components that are difficult to individually constrain due to the limited static and dynamic data available for deep disposal wells. Accordingly, the analysis was done by varying key inputs to understand the relative importance of each and guide the focus of future data collection efforts.

Monitoring Plan

To manage the inherent uncertainty, XTO has contracted with a third party to provide seismicity monitoring using public seismometers augmented by a private array in the area of the proposed well. This will allow for a better determination of baseline seismicity as well as early detection should there be anomalous events. Additionally, XTO will determine the original pore pressure of the disposal interval prior to initiating operations. Upon request, XTO will share the results of this work with the EMNRD's UIC staff.



Tim Tyrrell
XTO Geoscience Technical Manager

James Ranch Unit 6 Torino 1 SWD Well Historic Seismicity and Stress Information

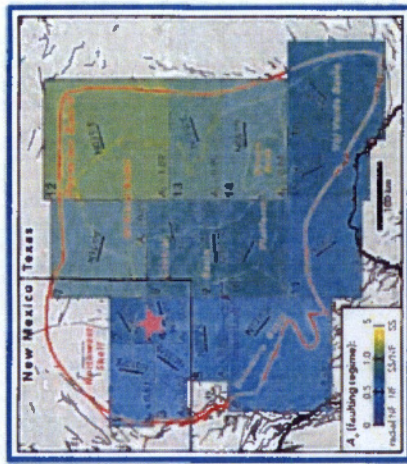
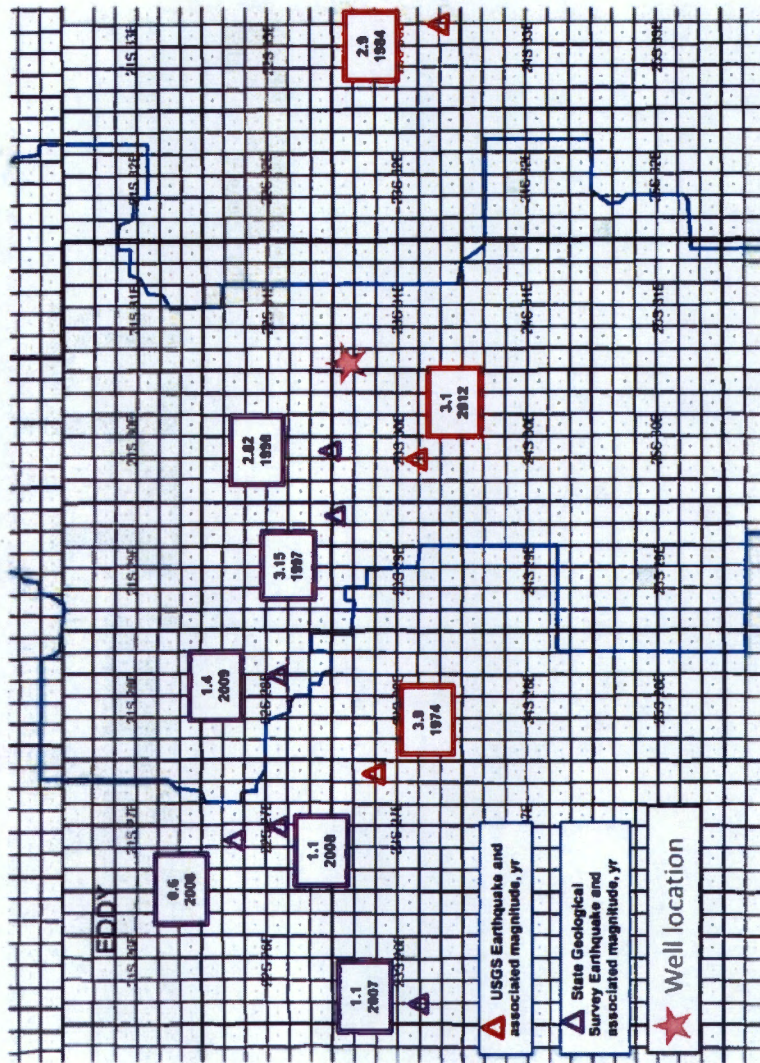
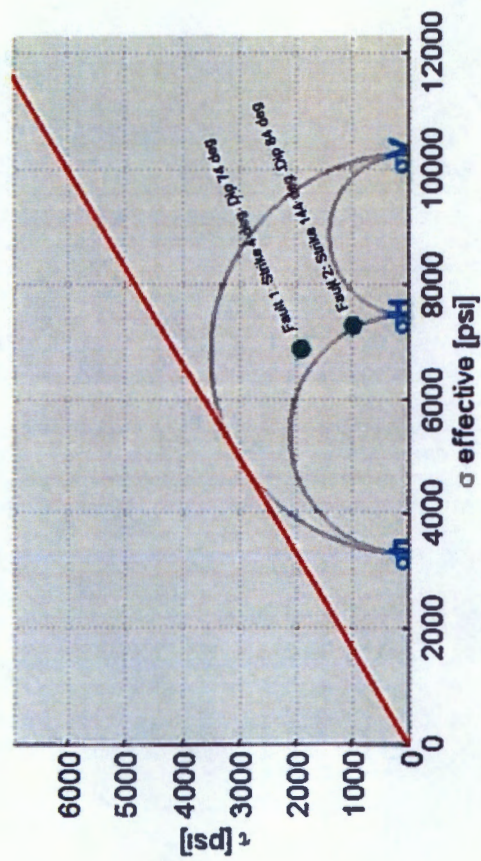


Figure 1

James Ranch Unit 6 Torino SWD 1 Well

Geomechanics

Stress Regime: Normal Faulting



Stress Regime Inputs

Vertical Stress Gradient (psi/ft)	1.1
A-PH Parameter	0.6
Clastic Stress Gradient Assumption (psi/ft)	
Maximum Stress Direction (deg N of E)	0°
Initial Day Pressure Gradient (psi/ft)	0.47
Reference Depth for Calculations (ft)	10750

Uncertainty Ranges

Slip Angle (radians, degrees)	95
Dip Angle (radians, degrees)	95
Max Horiz. Stress Dir (deg degrees)	95
Friction Coef (μ)	0.8
A-PH Parameter (μ)	0.2

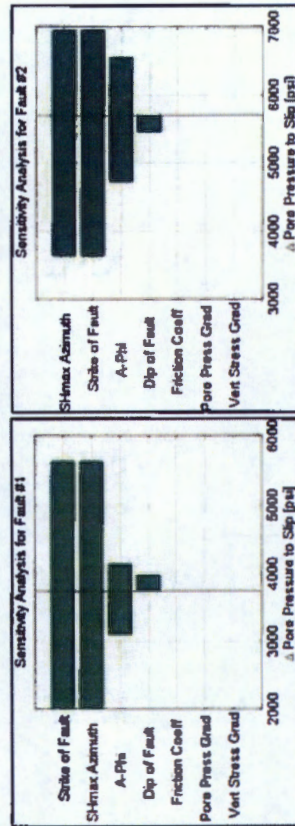
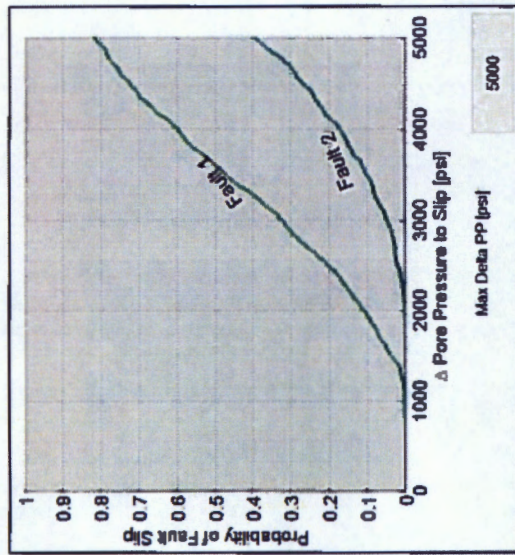
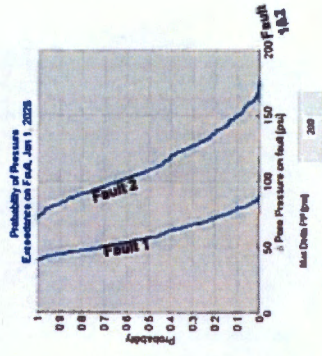
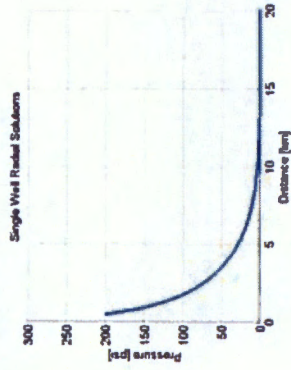
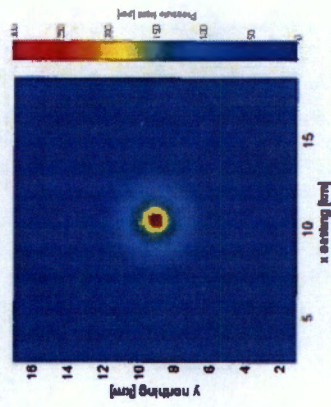


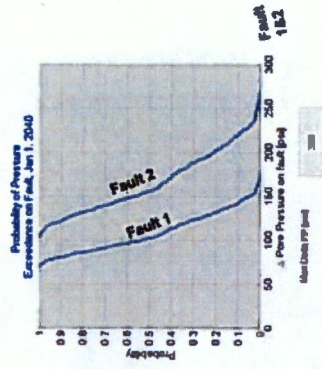
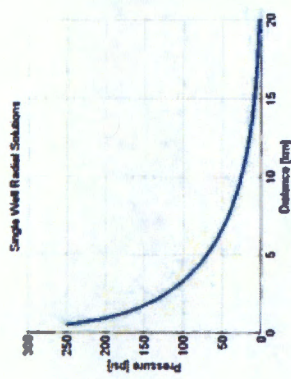
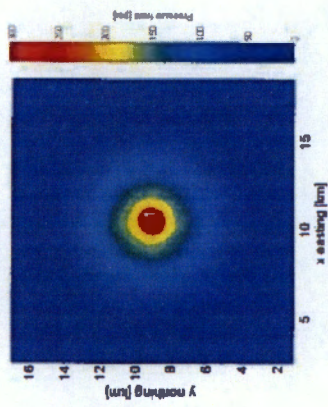
Figure 2

James Ranch Unit 6 Torino SWD 1 Well Pore Pressure Analysis

2025 Snapshot



2040 Snapshot



Uncertainty Ranges

Aquifer Thickness [150 ft]	250
Porosity [5 %]	3
Permeability [5 mD]	15

Figure 3

James Ranch Unit 6 Torino SWD 1 Well Geomechanical / Pore Pressure Integration

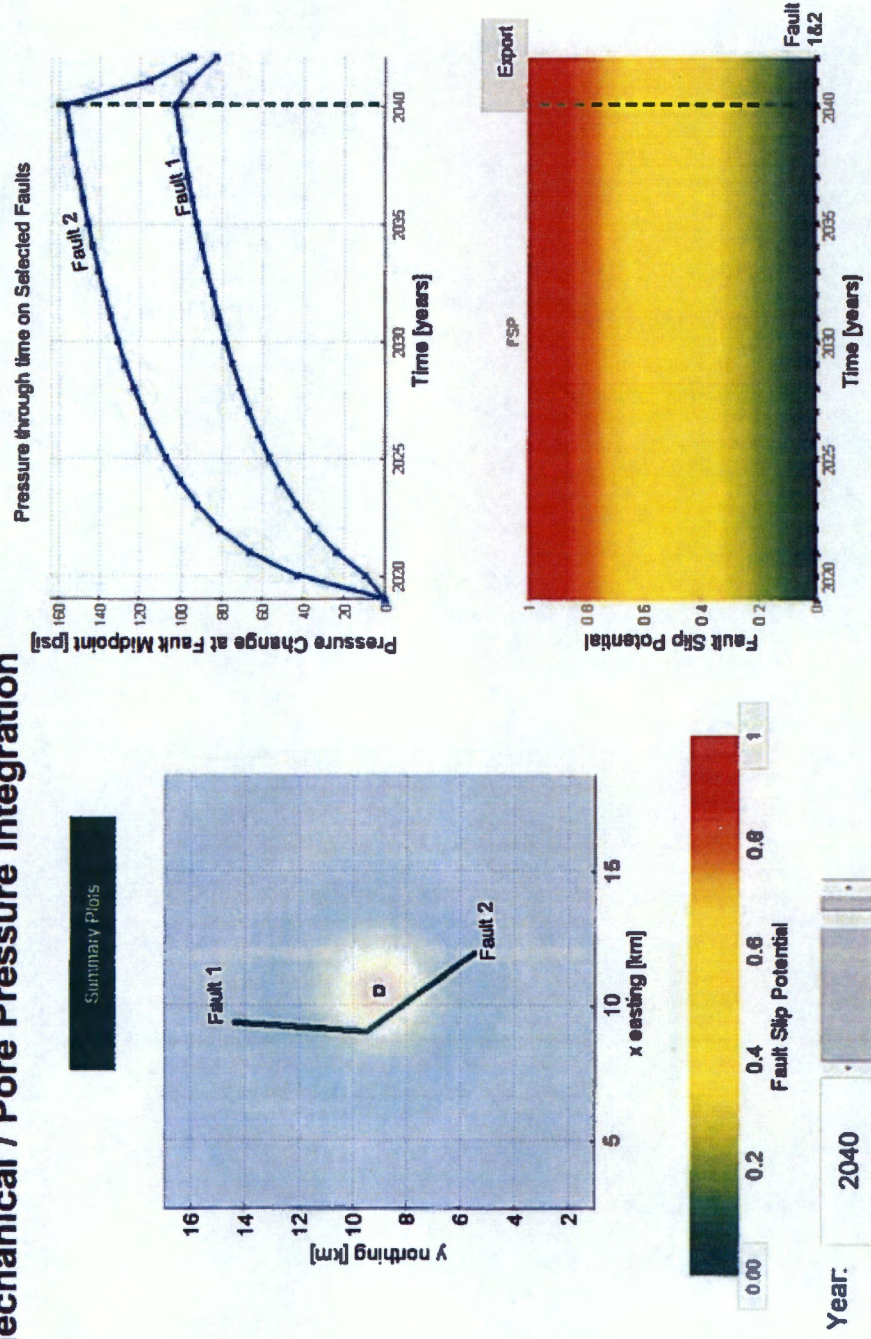


Figure 4



FORM C-108 Technical Review Summary [Prepared by reviewer and included with application; V17]

DATE RECORD: First Rec: 6/24/19 Admin Complete: 6/24/19 or Suspended: — Add. Request/Reply: 10/29/19
ORDER TYPE: WFX / PMX SWD Number: 2167 Order Date: 10/30/19 Legacy Permits/Orders: None Water sample update

Well No. 1 Well Name(s): James Ranch Unit 6 Torino SWD

API : 30-0 15-Pending Spud Date: TBD New or Old (EPA): New (UIC Class II Primacy 03/07/1982)

Footages 2211 PSL / 1402 FWL Lot — or Unit K Sec 6 Tsp 23S Rge 31E County Eddy

General Location: 16 mi east of Loving 13.6 mi S of 180 Pool: SWD, Devonian-Silurian Pool No: 97989

BLM 100K Map: Jal Operator: XTO Permian Operating LLC OGRID: 373075 Contact: Tracie Cherry / XTO

COMPLIANCE RULE 5.9: Total Wells: 802 Inactive: 0 Fincl Assur: OK Compl. Order? No IS 5.9 OK? Yes Date: 10/30/19

WELL FILE REVIEWED ☐ Current Status: NA-no API / no well file

WELL DIAGRAMS: NEW: Proposed ☒ or RE-ENTER: Before Conv. ☐ After Conv. ☐ Logs in Imaging: —

Planned Rehab Work to Well: * Honey Badger SWD No. 1 (Sec. 6/23S/30E) withdrawn

Well Construction Details		Sizes (in) Borehole / Pipe	Setting Depths (ft)	Cement Sx or Cf	Cement Top and Determination Method
Planned <input checked="" type="checkbox"/> or Existing <u>Surface</u>		<u>24 / 18 5/8</u>	<u>0 to 420</u>	<u>905</u>	<u>Circulated to surface</u>
Planned <input checked="" type="checkbox"/> or Existing <u>Interm/Prod</u>		<u>17 1/2 / 13 3/8</u>	<u>0 to 3812</u>	<u>3485</u>	<u>Circulated to surface</u>
Planned <input checked="" type="checkbox"/> or Existing <u>Interm/Prod</u>		<u>12 1/4 / 9 5/8</u>	<u>0 to 11660</u>	<u>3760 (1500+2180)</u>	<u>Circulated to surface</u>
Planned <input type="checkbox"/> or Existing <u>Prod/Liner</u>		<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
Planned <input checked="" type="checkbox"/> or Existing <u>Liner</u>		<u>8 1/2 / 7</u>	<u>11200 to 15610</u>	<u>650</u>	<u>TOL - Stipulate CBL</u>
Planned <input checked="" type="checkbox"/> or Existing <u>OH/PERF</u>		<u>6 to 11</u>	<u>15610 to 16980</u>	<u>Inj Length 1370</u>	

Injection Lithostratigraphic Units:		Depths (ft)	Injection or Confining Units	Tops	Completion/Operation Details:	
Adjacent Unit: Litho. Struc. Por.			<u>Mississippian</u>	<u>14983</u>	Drilled TD <u>—</u>	PBTD <u>—</u>
Confining Unit: Litho. Struc. Por.		<u>± 20</u>	<u>Woodford</u>	<u>15403</u>	NEW TD <u>16980</u>	NEW PBTD <u>—</u>
Proposed Inj Interval TOP:		<u>15610</u>	<u>Devonian</u>	<u>15593</u>	NEW Open Hole <input checked="" type="checkbox"/> or NEW Perfs <input type="checkbox"/>	
Proposed Inj Interval BOTTOM:		<u>16980</u>	<u>Fusileman</u>	<u>—</u>	Tubing Size <u>4 1/2 Tapered</u>	Inter Coated? <u>Yes</u>
Confining Unit: Litho. Struc. Por.		<u>± 20</u>	<u>Montoya</u>	<u>17003</u>	Proposed Packer Depth <u>15510</u>	ft
Adjacent Unit: Litho. Struc. Por.			<u>Simpson</u>	<u>—</u>	Min. Packer Depth <u>15510</u>	(100-ft limit)
					Proposed Max. Surface Press. <u>3122</u>	psi
					Admin. Inj. Press. <u>3122</u>	(0.2 psi per ft)

AOR: Hydrologic and Geologic Information

POTASH: R-111-P Yes Noticed Mosaic BLM Sec Ord ☒ WIPP Noticed Yes Salt/Salado T 563' B3693 NW: Cliff House fm

USDW: Aquifer(s) Rustler Max Depth ± 400' HYDRO AFFIRM STATEMENT By Qualified Person ☒

NMOSE Basin: Carlsbad CAPITAN REEF: thru — adj — NA ☒ No. GW Wells in 1-Mile Radius? 1 FW Analysis? Not available (Surface owner)

Disposal Fluid: Formation Source(s) WC/BS/DWG Analysis? Yes On Lease ☐ Operator Only ☒ or Commercial ☐

Disposal Interval: Inject Rate (Avg/Max BWPD): 20000/40000 Protectable Waters? No Source: Historical/Sampling System: Closed or Open

HC Potential: Producing Interval? No Formerly Producing? No Method: Logs/DST/P&A/Other Mudlog Required 2-Mi Radius Pool Map ☒

AOR Wells: 1/2-M — or ONE-M ☒ RADIUS MAP/WELL LIST: Total Penetrating Wells: 0 [AOR Hor: — AOR SWDs: —]

Penetrating Wells: No. Active Wells 0 No. Corrective? — on which well(s)? — Diagrams? —

Penetrating Wells: No. P&A Wells 0 No. Corrective? — on which well(s)? — Diagrams? —

Induced-Seismicity Risk Assess: analysis submitted Yes historical/catalog review Yes fault-slip model Yes probability Low

NOTICE: 1/2-M — or ONE-M ☒ : Newspaper Date 6/21/19 Mineral Owner BLM Surface Owner Fee N. Date 6/21/19

RULE 26.7(A): Identified Tracts? Yes Affected Persons*: BLM/SLO/Oxy/Conoco Phillips/Wipac Mills Trust N. Date 6/21/19

* new definition as of 12/28/2018 [any the mineral estate of United States or state of New Mexico; SWD operators within the notice radius]

Order Conditions: Issues: Application for SWD in proximity; CBL not in proposed activities

Additional COAs: * Mudlog; cont 95% to surface; BH pressure measurement; CBL for 7 inch liner; Standard

Cont
Notice

Goetze, Phillip, EMNRD

From: Bell, Ric <Ric.Bell@mosaicco.com>
Sent: Tuesday, May 21, 2019 7:22 AM
To: Hilger, Kenneth G
Cc: Morehouse, Dan
Subject: RE: Location Waiver, JRU 36 Rambler State SWD No. 1 and JRU 6 Torino SWD No. 1, James Ranch Unit, Eddy Co

Ken,
As a follow up to the meeting with Dan and me in Midland last month and pursuant to this email, Mosaic will not object to these two locations as described in the attachments. If you choose to move these locations for any reason we will reserve the right to review this approval. Good luck with your project.
Cheers,
Ric



Ric Bell | Senior Geologist

The Mosaic Company | 1361 Potash Mines Road | Carlsbad, New Mexico, 88220
P: 575.628.6242 | C: 575.361.3854 | E: ric.bell@mosaicco.com |
W: www.mosaicco.com

From: Hilger, Kenneth G [mailto:Kenneth_Hilger@xtoenergy.com]
Sent: Monday, May 20, 2019 2:10 PM
To: Bell, Ric C - Carlsbad <Ric.Bell@mosaicco.com>
Subject: Location Waiver, JRU 36 Rambler State SWD No. 1 and JRU 6 Torino SWD No. 1, James Ranch Unit, Eddy Co

CAUTION: External Email.

Ric,

Pursuant to our phone call earlier today, XTO is requesting Mosaic's waiver to drill the captioned wells each at a location not on an approved drilling island. The Rambler is located on a state tract approximately 150 feet to the NE of Drilling Island No. 8 in Section 36, T22S-R30E, and the Torino well is located on a private tract of land owned by Mr. Mills on the east side of Drilling Island 4 in Section 6, T23S-R31E. Mr. Mills is in agreement of the wells' location on his surface. The attached plats further define each wells' location by footage calls. Both wells will be permitted as Devonian injectors.

If Mosaic has no objection to the location of each well, your response to this note indicating such will be satisfactory to XTO as granting a waiver of each location. Should you have any questions, or require additional information, please let me know.

Thanks...ken

Kenneth Hilger, CPL
Division Landman – Delaware Basin/Permian

XTO Energy Inc
Land Dept. Loc. 115
22777 Springwoods Village Pkwy
Spring, TX 77389-1425
Phone: (832) 625-4032 – office
(817) 888-0819 – cell

Goetze, Phillip, EMNRD

From: Nathan Alleman <nalleman@all-llc.com>
Sent: Tuesday, September 17, 2019 6:32 AM
To: Goetze, Phillip, EMNRD
Cc: Jones, William V, EMNRD; Murphy, Kathleen A, EMNRD
Subject: [EXT] RE: Blackbuck - Honey Badger SWD Fed #1 Withdrawal

Mr. Goetze,

In the email below, we requested that the C-108 application for Blackbuck's Honey Badger SWD Fed #1 (App Tracking # pMAM1908154600) be withdrawn.

Could you please confirm that this application has been officially withdrawn or let me know if there's another channel we need to go through to make this request?

Thank You!

Nate Alleman

ALL Consulting
Office: 918-382-7581
Cell: 918-237-0559

From: Nathan Alleman <nalleman@all-llc.com>
Sent: Thursday, September 12, 2019 1:58 PM
To: 'Goetze, Phillip, EMNRD' <Phillip.Goetze@state.nm.us>
Subject: Blackbuck - Honey Badger SWD Fed #1 Withdrawal

Mr. Goetze,

Blackbuck Resources would like to officially withdraw their SWD application for the Honey Badger SWD Fed #1 (App Tracking # pMAM1908154600).

Please let us know once this withdrawal has been confirmed so we can update Blackbuck.

Thank You!

Nate Alleman

Energy & Environmental Consultant
ALL Consulting
1718 South Cheyenne Avenue
Tulsa, OK 74119
Office: 918-382-7581
Cell: 918-237-0559

Goetze, Phillip, EMNRD

From: Cherry, Tracie <Tracie_Cherry@xtoenergy.com>
Sent: Friday, March 8, 2019 10:36 AM
To: Goetze, Phillip, EMNRD; McMillan, Michael, EMNRD
Cc: Hall, James; Tyrrell, Timothy; Thompson, Michael
Subject: [EXT] Blackbuck Resources, LLC; Honey Badger SWD Fed #1

Good morning Gentlemen.

In response to SWD application referenced, please note that XTO objects to the application for disposal into the Devonian-Silurian formation proposed by Blackbuck Resources, LLC. XTO has not received the actual notice of this application at this time but is acting upon the published notice in the *Carlsbad Current-Argus* dated March 02, 2019.

Please contact me if the application is set for hearing.

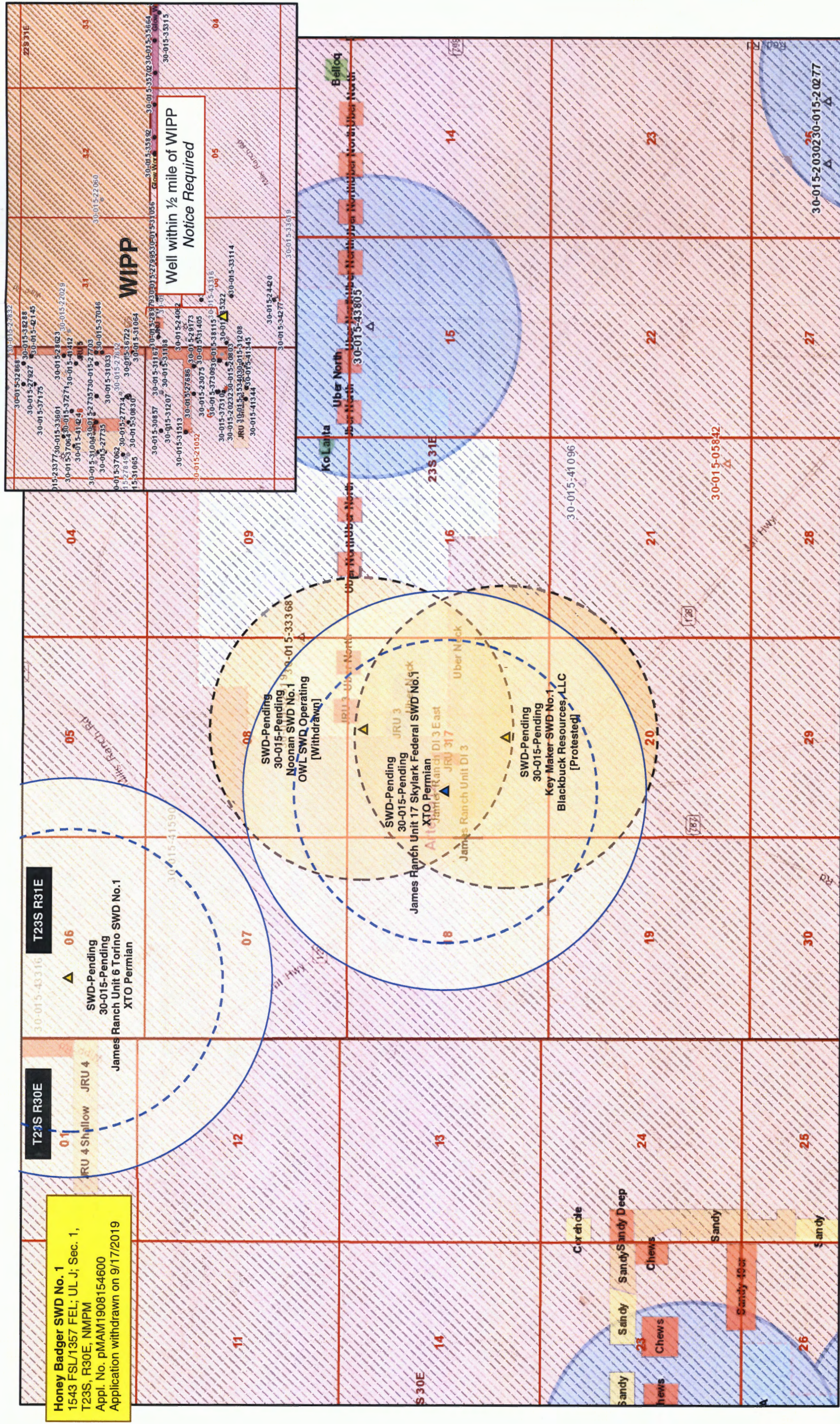
Thank you,
Tracie Cherry

Tracie J Cherry
Regulatory Coordinator
Direct number 432-221-7379



a subsidiary of ExxonMobil

Pending Application for High-Volume Devonian Disposal Well



Closest High-Volume Devonian Disposal Well: Uber North SWD No. 1 (30-015-43805); NGL Water Solutions

Township 23 South Range 31 East of the New Mexico Principal Meridian, New Mexico

County: Eddy - 015

BLM Field Office: Carlsbad

BUREAU OF LAND MANAGEMENT
STATUS OF PUBLIC DOMAIN
LAND AND MINERALS



CAVEAT STATEMENT
This plat is the Bureau's Record of Title, and should be used only as a graphic display of the township survey data. Records hereon do not reflect title changes which may have been affected by lateral movements of rivers or other bodies of water. Refer to the National Antiquities Act for National Monument information.

1 inch = 30 chains
1 Mile

T 23 S
R 31 E
NMPM

MTP

T23S R31E

Entire Township included
EO WdI NM 1 Pot Res 6 (3/11/1926)
Revised Pot Area of 10/16/1951, SO 5/11/1965
Designed Pot Area 10/7/1975
CI of Public Lands NM 0560202 (CI No 30-06-01)

IN 1977 DOE CONDEMNED THE EXISTING LEASEHOLD INTEREST
IN THIS AREA. THIS DOES NOT PRECLUDE OIL AND GAS LEASING
Sec 5: Lot 4, 5WNW, W2SW
Sec 6: Lots 3,4

DUE TO WIPP SITE LOCATION IN T22S R31E CONTACT DOE
PRIOR TO LEASING

NOTE: The Serial Numbers displayed are in the Bureau's LR2000 system format.
-if there is a zero in the 7th position (from the right), the serial number has a "prefix" zero;
example NM 001086 01
-if there is a zero in the 8th position (from the right), the serial number has a "prefix" zero;
example NM 012345

Goetze, Phillip, EMNRD

From: Cherry, Tracie <Tracie_Cherry@xtoenergy.com>
Sent: Tuesday, October 29, 2019 3:35 PM
To: Goetze, Phillip, EMNRD
Subject: [EXT] RE: James Ranch Unit 6 Torino Application

Phillip:

Actually the well is located on Fee acreage so the name submitted on the State APD is James Ranch Unit 6 Torino Fee SWD #001

I need to follow up on the water well. Until very recently, an agreement had not been worked out with the landowner; the water well may have been forgotten.

Tracie

From: Goetze, Phillip, EMNRD [mailto:Phillip.Goetze@state.nm.us]
Sent: Tuesday, October 29, 2019 3:52 PM
To: Cherry, Tracie <Tracie_Cherry@xtoenergy.com>
Subject: James Ranch Unit 6 Torino Application

Tracie:

Need to follow up on two items in the application:

1. Fresh water wells within one mile: The application identified a single POD, a stock well under C-3668, and notes that "XTO is working with owner to verify well activity and obtain water sample." Was this done?
2. Please verify that this well will require an APD from the BLM. If so, "Federal" will be added to the well name. PRG

Phillip Goetze, PG
Engineering Bureau, Oil Conservation Division
New Mexico Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive, Santa Fe, NM 87505
Direct: 505.476.3466
E-mail: phillip.goetze@state.nm.us

