

**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 and Natural Resources**  
**NM OIL CONSERVATION**  
**Oil Conservation Division** **ARTESIA DISTRICT**  AMENDED REPORT  
1220 South St. Francis Dr. **FEB 20 2019**  
Santa Fe, NM 87505

Form C-101  
Revised July 18, 2013

**RECEIVED**

**APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE**

1. Operator Name and Address XTO Energy, Incorporated 6401 Holiday Hill Road, Bldg 5 Midland, Texas 79707		2. OGRID Number 005380	
		3. APL Number 30-015-45757	
4. Property Code 325 002	5. Property Name Remuda 25 Observation Well		6. Well No. 001

**7. Surface Location**

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
E	25	23S	29E		2107	North	485	West	Eddy

**8. Proposed Bottom Hole Location**

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

**9. Pool Information**

Pool Name Stratigraphic	Pool Code 98210
----------------------------	--------------------

**Additional Well Information**

11. Work Type N	12. Well Type MW	13. Cable/Rotary Rotary	14. Lease Type State	15. Ground Level Elevation 3064
16. Multiple N	17. Proposed Depth 1200	18. Formation Salt	19. Contractor Stewart Brothers	20. Spud Date 2/22/2019
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

We will be using a closed-loop system in lieu of lined pits

**21. Proposed Casing and Cement Program**

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	8-3/4"	7"	20	330	130 C + 2% CaCl	0'
Prod	5-1/8"	2-7/8"	6.5	1200	260 C + 2% CaCl	0'

**Casing/Cement Program: Additional Comments**

--

**22. Proposed Blowout Prevention Program**

Type	Working Pressure	Test Pressure	Manufacturer
7-1/6" Annular	5000psi	3000psi	

<p>23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify that I have complied with 19.15.14.9 (A) NMAC <input checked="" type="checkbox"/> and/or 19.15.14.9 (B) NMAC <input checked="" type="checkbox"/>, if applicable. Signature: <i>Stephanie Rabadue</i></p> <p>Printed name: Stephanie Rabadue Title: Regulatory Coordinator E-mail Address: stephanie_rabadue@xtoenergy.com Date: 02/18/2019</p>	<p><b>OIL CONSERVATION DIVISION</b></p> <p>Approved By: <i>Raymond W. Dodany</i> Title: <i>Geologist</i> Approved Date: <i>2-20-19</i>      Expiration Date: <i>2-20-21</i></p> <p>Conditions of Approval Attached</p>
--	--



## Klein, Ranell, EMNRD

---

**From:** Rabadue, Stephanie <Stephanie\_Rabadue@xtoenergy.com>  
**Sent:** Thursday, February 21, 2019 9:48 AM  
**To:** Klein, Ranell, EMNRD  
**Cc:** Podany, Raymond, EMNRD  
**Subject:** [EXT] RE: Remuda Basin Observation well  
**Attachments:** Remuda South 25 Observation Well Sketch.pdf

Good morning, Rusty and Ray!

I have answers! And I apologize for the confusion. I believed we were drilling a standard monitoring well but we are not. We are drilling a monitoring geophysical well to study geology and to monitor subsidence.

1. The Remuda 25 Observation well is a shallow 1000' TVD (extra 200' permitted in case of unexpected changes but we plan to stop at 1000') well drilled through the shallow salt (potash) near to 101H. As NMOCD was informed back in October, there was some temporary and limited underground flow outside of casing during 101H completions activities into the adjacent salt zone that was quickly addressed and stopped. The 101H well is in the process of being repaired, this monitoring well is being drilled out of caution, as part of our commitment and close working relationship with Mosaic, and to make sure we understand any local shallow geology, flow paths, and conduits that could be in the area. This will support future well planning and risk management.
2. From the beginning of this issue in early October, we have been in regular (at least weekly) communication with Mosaic and both Dan Morehouse and Ric Bell of Mosaic are fully aware of our plans. XTO has a strong relationship with Mosaic, and both Ric and Dan have been invited to attend coring operations beginning on February 22, 2019, if we have our permit.
3. The wellbore will be cored from 450 to 650 feet so we can study the geology. We will not be perforating the well and the casing will not be open to the formation. We intend to log from 1000' to surface in order to study the geology, run and leave a 1/4" fiber optic cable in the 2-7/8" tbg annulus to monitor temperatures in the long-term. The fiber cable and 2-7/8" tbg will be cemented to surface. The well will be filled with brine to surface so long as the well is actively monitoring.

I've attached a wellbore diagram for your perusal and if you need anything else, don't hesitate to let me know! I'll follow up with a call in an hour or so if you need anything else but feel free to reach out in the meantime if you do!

I appreciate the help!

Happy Thursday!

Stephanie Rabadue  
Regulatory Coordinator – Delaware District / Permian Division  
432-620-6714  
stephanie\_rabadue@xtoenergy.com

**From:** Klein, Ranell, EMNRD [mailto:Ranell.Klein@state.nm.us]  
**Sent:** Wednesday, February 20, 2019 2:38 PM  
**To:** Rabadue, Stephanie <Stephanie\_Rabadue@xtoenergy.com>  
**Cc:** Podany, Raymond, EMNRD <Raymond.Podany@state.nm.us>  
**Subject:** Remuda Basin Observation well

Stephanie,

## Klein, Ranell, EMNRD

---

**From:** Rabadue, Stephanie <Stephanie\_Rabadue@xtoenergy.com>  
**Sent:** Thursday, February 21, 2019 12:01 PM  
**To:** Klein, Ranell, EMNRD  
**Subject:** [EXT] RE: Remuda Basin Observation well

Rusty,

This is the procedure for running and cementing the tubing for the well:

### Running and Cementing Tubing

- a. Assess hole conditions from the logging run and last trip out of the hole. Make a wiper trip if required to ensure tubing can be run to bottom. Strap tubing while on the rack and record measurements.
- a. Monitor well for one hour to ensure hole stands full and no flow is encountered. Once it is verified that the well is overbalanced and no flow is occurring, nipple down the annular preventer in order to run tubing. (The tubing adapter flange cannot be run through the annular.)
- b. Rig up tubing tongs. Make-up and run a 2-7/8" EUE 8Rd Halliburton float shoe (part no. 837.52000) on the bottom of the first joint. Pump through the joint to ensure the float works properly.
- c. Rig up fiber optic cable sheave and cable spool. Attach the 11mm encapsulated cable to the tubing as it is run in hole. Attach the cable to the pipe every joint using stainless steel bands and the provided banding machine. Use manual slips and take care not to pinch or damage the fiber optic cable when setting the slips or during the make-up of subsequent joints.
- d. Run 2-7/8" tubing to +/- 980'. Pick up the 2-7/8" EUE x 7-1/16" 3k adapter flange with ring gasket and make up on top of the tubing. Run the fiber optic cable through the port on the adapter flange. Land the adapter flange on the wellhead, spacing out the tubing so that it is as close to bottom as possible. Check the fiber optic cable for continuity/confirm no damage to cable before cementing.
- e. Tighten the bolts on the adapter flange and nipple up the 2-9/16 5K gate valve on the top of the tubing head adapter. Run a short pup from the top of the adapter flange to the rig floor. Pump down the 2-7/8" and up the annulus taking returns through the 2" side outlets on the wellhead. Once circulation is established, begin the cement job.
- f. Regulatory requirements mandate that cement is circulated to surface. Mix and pump the following down the tubing and up the annulus taking returns through both 2" outlets on the wellhead:
  - 5-1/8" hole x 2-7/8" tubing, annular capacity 0.01748 bbl/ft
  - 17.5 bbls x 100% excess = 35 bbls = 196.5 ft<sup>3</sup>
  - 260 sacks (includes 100% excess)
  - 14.8 lb Class C Cement + 2% Calcium Chloride
  - Displace with 5.8 bbls inhibited freshwater (add corrosion inhibitor)
- g. After pumping cement, break off cement lines and install wiper plug in tubing pup. Displace tubing with ~ 5.8 bbls of inhibited freshwater from the cement unit and bump plug to 500 psi over final circulating pressure.
- h. Bleed off pressure and monitor for flowback to the cement unit and note whether float held. Shut the 2-9/16 gate valve on the tubing head adapter.
- i. Back out the landing joint and install 2-7/8" EUE bull plug with pressure gauge. Note the tubing and annulus pressure before rigging down the rig.

