

DATE 08/02/13	SUSPENSE	ENGINEER PG	LOGGED IN 08/05/13	TYPE IPI	APP NO. PPAG1321741969
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NEW MEXICO OIL CONSERVATION DIVISION
- 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

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Simultaneous Dedication
☐ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☐ SWD ☒ IPI ☐ EOR ☐ PPR

[D] Other: Specify SWD-616

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[2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or Does Not Apply

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] ☐ Offset Operators, Leaseholders or Surface Owner

[C] ☐ Application is One Which Requires Published Legal Notice

[D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

copy mailed 7/30/13

[3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

[4] **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.~~

David Stewart
Print or Type Name

[Signature]
Signature

SE Regulatory Advisor 7/30/13
Title Date

david.stewart@oky.com
e-mail Address 432-685-5717

OKC USA Inc - 16694
Red Tank 35 Federal #3 SWD-616
30-025-33149

To: New Mexico Oil Conservation Division
Attn: Phillip R. Goetze, P.G.

OXY USA Inc. (16696) formally requests an increase in maximum injection pressure to 1300 psi for the following approved SWD permit. The justification will be presented herein.

Well Name: Red Tank 35 Federal 3
API#: 30-025-33149
2310 FSL 990 FWL NWSW(L) Sec 35 T22S R32E
Administrative Order SWD-616 12/27/95

The SWD well is completed in the Bell Canyon and Upper Cherry Canyon (4950-6252') with 2.875" composite lined tubing (2.25" ID) set at a depth of 4832'. See Figure 1 below:

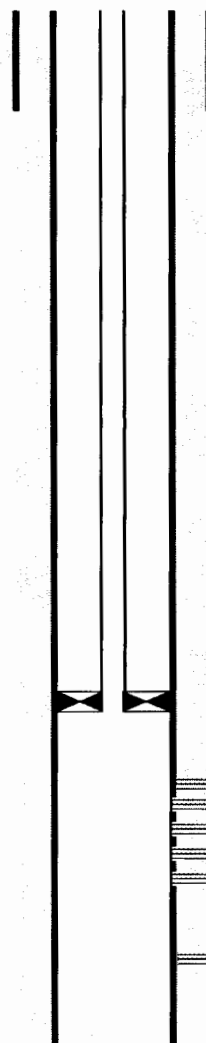
Well Name	Red Tank 35 Federal 0003
API	30-025-33149
Location	Sec 35-22S-32E
Spud	October 22, 1995
GR	3726'

Hole size	12-1/4"
Surface casing	8-5/8", 24#
Set @	807'
Cement	Surface

Hole size	7-7/8"
Production Casing	5-1/2", 17#
Set @	6543'
Cement	Surface
575 sxs	

<u>Tubing String</u>	
Tubing 2-7/8", 4.7# Set @	4832'
On/Off tool. Set @	4835'
5-1/2" packer Set @	4839'
(Guiberson Unit VI)	

PBTD	6552'
TD	6600'



$\frac{1300 \text{ psi}}{4950 \text{ ft}} = 0.263 \text{ psi/ft}$
Delaware:
Bell Canyon / upper
Cherry

Figure 1: Red Tank 35 Federal 3 Well Schematic.

On 6/28/2013 a planned step rate test was performed on the Red Tank 35 Federal 3 to identify the formation parting pressure, thus determining a maximum allowable injection pressure. The well was back flowed for 4hrs, then shut-in for an additional 12 hrs to ensure accurate testing results. The step-rate test was then conducted at the below rates utilizing treated water and a mobile pump truck. Pump rates were maintained for 15 minutes or until we achieved a stable injection pressure. Table 1 displays the injection rate for each step along with the corresponding surface treating pressure at the well head.

Rate [bbls/day]	Rate [bbls/min]	Cumulative Volume Pumped [bbls]	Tubing Head Pressure [psi]
1296	0.90	13	1227
1584	1.10	28	1332
1872	1.30	43	1378
2160	1.50	71	1444
2520	1.75	96	1541
2880	2.00	128	1686
3240	2.25	159	1810
3600	2.50	197	2000
3960	2.75	239	2100
4320	3.00	284	2343
4680	3.25	331	2504
5040	3.50	383	2740

Table 1: Red Tank 35 Federal 3 Step Rate test data.

The formation parting pressure was determined to be 3466 psi during the step-rate test (See Figure 2.) The corresponding surface treating pressure when the formation parted was 1344 psi. The requested 1300 psi surface injection pressure represents an equivalent bottom-hole pressure well below the formation parting pressure. A conservative approach was taken in regards to injection rates in order to eliminate the possibility of fracture propagation into a non-disposal zone, thus the step rate test was terminated once we were able to determine that the formation parted.

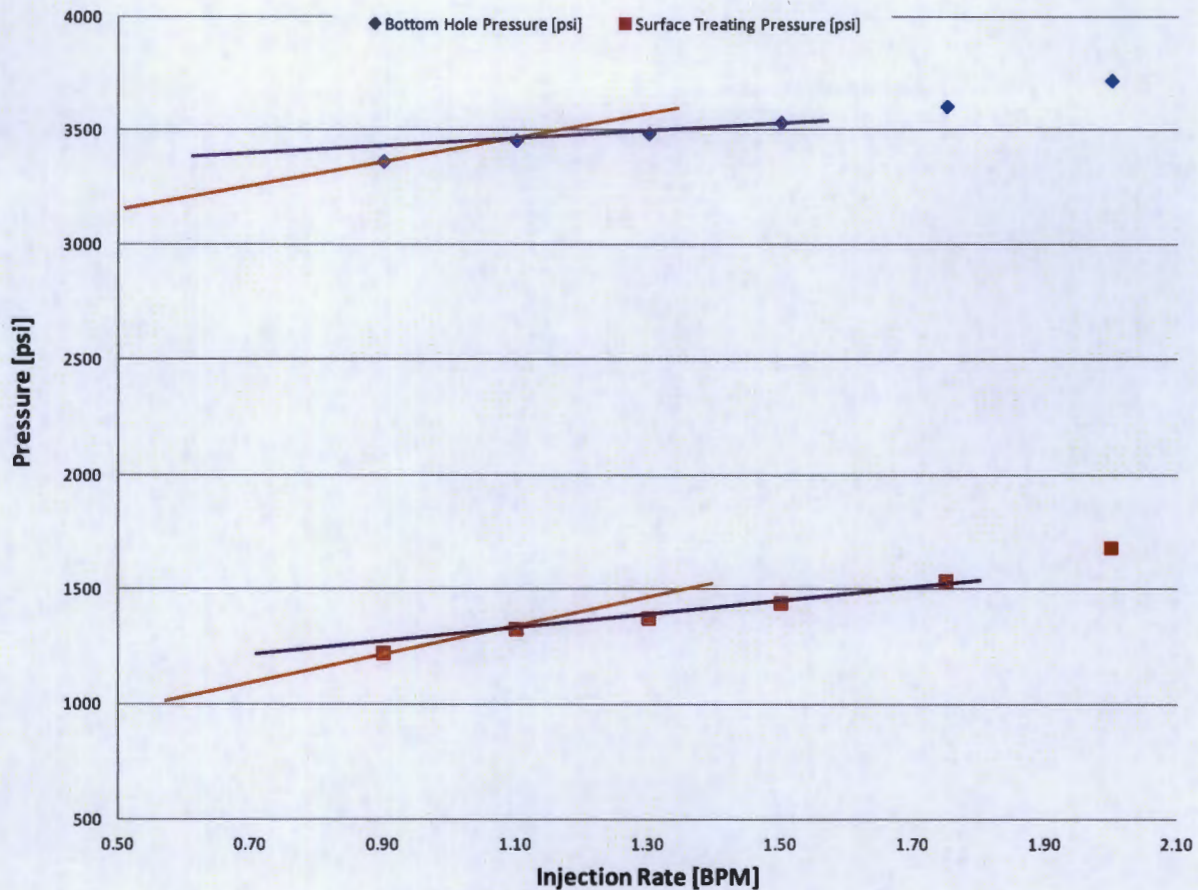


Figure 2: Surface Treating Pressure & Calculated Bottom Hole Pressure versus injection rate.

Please advise if any additional data is required in order to make a ruling of the proposed increase in permitted injection pressure.

Best regards

Joseph M. Evans
 Production Engineer
 SE New Mexico Reservoir Management Team
 OXY Permian Primary Development.
 Office - 713-350-4640
 Cell - 713-855-0624
joseph_evans@oxy.com

cc: NMOCD-Hobbs, BLM-Carlsbad

NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ADMINISTRATIVE ORDER SWD-616

APPLICATION OF POGO PRODUCING COMPANY FOR SALT WATER DISPOSAL, LEA COUNTY, NEW MEXICO.

ADMINISTRATIVE ORDER OF THE OIL CONSERVATION DIVISION

Under the provisions of Rule 701(B), Pogo Producing Company made application to the New Mexico Oil Conservation Division on November 28, 1995, for permission to complete for salt water disposal its Red Tank '35' Federal Well No.3 located 2310 feet from the South line and 990 feet from the West line (Unit L) of Section 35, Township 22 South, Range 32 East, NMPM, Lea County, New Mexico.

THE DIVISION DIRECTOR FINDS THAT:

- (1) The application has been duly filed under the provisions of Rule 701(B) of the Division Rules and Regulations;
- (2) Satisfactory information has been provided that all offset operators and surface owners have been duly notified;
- (3) The applicant has presented satisfactory evidence that all requirements prescribed in Rule 701 will be met; and
- (4) No objections have been received within the waiting period prescribed by said rule.

IT IS THEREFORE ORDERED THAT:

The applicant herein, is hereby authorized to complete its Red Tank '35' Federal Well No.3 located 2310 feet from the South line and 990 feet from the East line (Unit L) of Section 35, Township 22 South, Range 32 East, NMPM, Lea County, New Mexico, in such manner as to permit the injection of salt water for disposal purposes into the Bell Canyon and Upper Cherry Canyon formations at approximately 4950 feet to 6252 feet through 2-7/8 inch plastic lined tubing set in a packer located at approximately 4850 feet.

IT IS FURTHER ORDERED THAT:

The operator shall take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

Prior to commencing injection operations into the well, the casing shall be pressure tested from the surface to the packer setting depth to assure the integrity of said casing.

The casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge at the surface or left open to the atmosphere to facilitate detection of leakage in the casing, tubing, or packer.

The injection well or system shall be equipped with a pressure limiting device which will limit the wellhead pressure on the injection well to no more than 900 psi.

The Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the Bell Canyon and Upper Cherry Canyon formations. Such proper showing shall consist of a valid step-rate test run in accordance with and acceptable to this office.

The operator shall notify the supervisor of the Hobbs district office of the Division of the date and time of the installation of disposal equipment and of the mechanical integrity test so that the same may be inspected and witnessed.

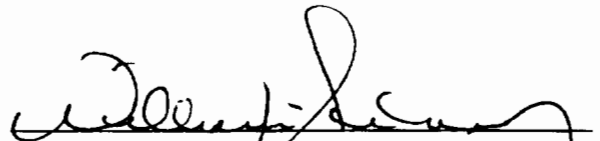
The operator shall immediately notify the supervisor of the Hobbs district office of the Division of the failure of the tubing, casing, or packer in said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

PROVIDED FURTHER THAT, jurisdiction of this cause is hereby retained by the Division for the entry of such further order or orders as may be deemed necessary or convenient for the prevention of waste and/or protection of correlative rights; upon failure of the operator to conduct operations in a manner which will ensure the protection of fresh water or in a manner inconsistent with the requirements set forth in this order, the Division may, after notice and hearing, terminate the injection authority granted herein.

The operator shall submit monthly reports of the disposal operations in accordance with Rule Nos. 706 and 1120 of the Division Rules and Regulations.

The injection authority granted herein shall terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject well, provided however, the Division, upon written request by the operator, may grant an extension thereof for good cause shown.

Approved at Santa Fe, New Mexico, on this 27th day of December, 1995.


WILLIAM J. LEMAY, Director

S E A L

WJL/BES

xc: Oil Conservation Division - Hobbs
Bureau of Land Management - Carlsbad