Revised March 23, 2017

RECEIVED:	REVIEWER:	TYPE:	APP NO:

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: Spur Energy Partners, LLC **OGRID Number:** 328947
Well Name: Secrest Et Al SWD No.1 **API:** 30-015-22321
Pool: SWD; Canyon **Pool Code:** 96184

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

FOR OCD ONLY
☐ Notice Complete
☐ Application Content Complete

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

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.

Ben Stone
Print or Type Name

Signature

11/14/2022
Date

936-377-5696
Phone Number

ben@sosconsulting.us
e-mail Address

November 11, 2022

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

Attn: Mr. Phillip Goetze, Engineering Bureau

Re: Request of Spur Energy Partners, LLC for an injection pressure increase on its Secrest Et Al SWD No.1 (API No.30-015-22321) located in Section 7, Township 19 South, Range 26 East, NMPM, Eddy County, New Mexico.

Dear Mr. Goetze,

Spur Energy Partners acquired the Secrest Et Al SWD No.1 from Percussion Petroleum in its large purchase of Percussion assets in New Mexico. The well was spud in October 1977 by Dorchester and subsequently P&A'd in December 1977. The well was permitted for salt water disposal by Cimarex Energy Company of Colorado under hearing order R-13494 and later purchased by Percussion. The well was completed and configured as expected with 2-7/8" tubing and is currently authorized for disposal into the Pennsylvanian Canyon formation from 7780 feet to 8038 feet with a maximum surface injection pressure of 1556 psi (0.2 psi/ ft.). The well is currently in use for SWD by Spur for its private use and is critical to Spur's area operations. .

Percussion ran a step-rate test in January 2018 and submitted a request for an injection pressure increase however, OCD determined that the test failed in its application and execution by providing too few steps and corresponding data points. It should be noted that while the test was not adequate for justifying an increase in pressure, it did generally show similar characteristics under similar induced rates and pressures.

Spur submitted a notice of intent sundry report which was approved by OCD on September 27, 2022. The SRT was executed as proposed in the sundry and went smoothly with no equipment issues and an adequate supply of water was on hand. 7 steps were completed in full at the specified rates and durations. As with the Percussion test 2-1/2 years earlier, formation parting or fracture never occurred during the test. Pressure fell off quickly upon conclusion of pumping. The data are presented in various annotated charts along with procedural narratives, current wellbore diagram and other documentation in support of this request for injection pressure increase.

Based on the results of the step-rate test, we hereby request that maximum permitted surface injection pressure be increased to 2915 psi (~0.375 psi/ ft. gradient). (Note: if OCD would approve 3000 psi, all the better for potential rate increases.) We believe that the test resulted in data to appropriately support this increase. I respectfully request that the approval of this injection pressure increase proceed swiftly and if you require additional information or have any questions, please do not hesitate to call or email me.

Best regards,

Ben Stone, Partner
SOS Consulting, LLC
Agent for Spur Energy Partners, LLC

Cc: Project file

Secrest Et Al SWD #1

Step-Rate Test 10/20/2022
30-015-22321
B-7-19S-26E, Eddy County

Background

Cimarex Energy of Colorado permitted the well for SWD by hearing order R-13494, issued December 21, 2011. The plugged well was reentered for conversion to SWD by a workover conducted March 7th thru March 15th, 2012. In the process, the well was cleaned out to 8470 feet and 5-1/2" casing was set and cemented to that depth. Upon determination of additional porosity, Cimarex requested and received approval to extend the bottom to 8038 feet, from the permitted 8010 feet. The workover resulted in the current utilized interval of 7780 feet to 8038 feet. The well has been in regular use since originally configured for SWD with daily average rates running from ~500 bwpd to ~3500 bwpd. Injection pressure has been at or below the allowable permit surface pressure of 1556 psi.

When Percussion Petroleum owned and operated the well, they determined it would be advantageous to increase the daily disposal volumes, if possible, to further disposal capacity for area operations. Percussion performed a step-rate test in early 2018 but failed to obtain adequate data points for OCD to be able to authorize an increase of injection pressure.

Spur acquired the well along with all producing wells and operations in the area. Spur came to the same conclusion, that an increase in this SWD's capacity would be a good economic decision for current activity levels. A NOI sundry was submitted to outline the new step-rate test which would be preformed per OCD and BLM guidelines to acquire suitable SRT data so that an increase in pressure could be approved. OCD approved that sundry on September 27, 2022. Spur moved to coordinate field operations to perform the test and a bottomhole pressure gauge was installed on October 14th about noon. Disposal operations continued for a couple more days until the well was shut-in for 48+ hours of static observation.

On October 20, 2022, a successful 30-minute mechanical integrity test was conducted. Upon conclusion of the MIT, the step-rate test commenced.

While the 2018 SRT performed by Percussion was not approvable, it did show enough anecdotal data to surmise that the formation is still behaving such that at similar rates and pressures, no fracture or parting of the formation ever occurred.

Note on Specific Pressure Request: During the test, 50 data points were obtained at surface pressures greater than 2900 psi. The average of those 50 points yields 2915 psi, so that is the request amount. Given that no break was ever indicated, if OCD would allow 3000 psi, all the better for possible rate increases.

The procedure, job summary and test data follow this page. A copy of the NOI sundry)which includes the wellbore diagram), the original permit and other supporting documents are included.

Secrest Et Al #1

Step Rate Test
Hunter Spragg – 817.914.0987
AFE – X22543

SPUR ENERGY PARTNERS
NW Shelf
Eddy County, NM

OBJECTIVES

Perform a step rate test on the Secrest SWD to determine if injection pressure can be raised without fracturing the formation. 45-minute steps chosen due to lower permeability. Literature suggests Cisco/Canyon averages 5-10 md.

- Estimated BHP Bomb set date – 10/14/2022
- Estimated Well SI date - 10/17/2022
- Estimated SRT Date - 10/19/2022 (minimum of 48 hours after well is shut in)
- Pressure Bomb retrieval date – 10/20/2022

Well Information	
Surface Location (NAD83)	Latitude: 32.6808357° / Longitude: -104.41922°
Ground Elevation / KB	3,370' / 12'
API Number	30-015-22321
AFE Number	**X22543 - $75,000**

Wellbore Details	
TVD / PBTD	TVD: 9,415' / PBTD: 8,368'
Perforations MD'	***7,780' - 8,038'***

Casing & Tubing Details - Current/Planned										
Size	**Depth** *(MD)*	**Weight** *lb/ft*	**Grade**	**ID** *In*	**Drift** *In*	**Thread**	**Burst** *psi*	**Collapse** *psi*	**Yield** *Mlbs*	**Cap** *bbl/ft*
5.500" *csg*	0' - 8,368'	17.0	L-80	4.892	4.767	LTC	7,740	6,280	320	0.023
2.875" IPC *tbg*	0' - 7,722'	6.5	L-80	2.411	2.317	EUE 8RD	10,570	11,160	144	0.00579

PROCEDURE

Spur Energy Partners LLC is committed to providing a safe working environment for all personnel. A safety meeting will be held prior to commencing each operation in order to define/clarify objectives, roles and responsibilities, identify all potential risk/hazards and establish a work procedure that is safe and environmentally sound. Meetings are to be documented on the reports returned to Spur Energy Partners LLC.

PERFORM SAFETY CHECKS AND SAFETY MEETING

1. Perform a safety meeting prior to rigging up **ANY** equipment on location. Discuss the job procedure and objective with all personnel on location. Document the safety meeting on the daily report sent to Spur. Make note of all potential risks/hazards, and clearly identify an emergency route and emergency vehicle. Also make note of any new or inexperienced personnel on location. Ensure proper Personal Protective Equipment (PPE) is used during the job. Minimums are hard hats, steel toes, safety glasses, H_2S monitors, and FR certified clothing as required. Designate a smoking area off location and 100' from any potential hydrocarbons.

Preparation

1. Set 2 - 500 bbl Frac tanks on location and begin filling with produced water from the facility. Do not use fresh water or produced water from any of the other surrounding facilities. Fill completely. Leave hoses attached to water tanks at the facility so water in water tanks can be utilized at the end of the test if needed.

2. Wellhead is shown to be rated to 3k psi. Ensure all wellhead valves have the same or higher rating.

72 hours before SRT

3. Notify OCD representative that SRT is planned to occur in 72 hours.

4. Notify OCD that a MIT will be ran with the pump truck and recorded in the data van on the date of the SRT. Ask if a chart recorder is required, if so, ensure one is on location for the day of the SRT.

5. Ensure well is on a vacuum; MIRU Precision Pressure Data Slickline truck and crane, utilize a pack-off for well control.

6. Run in hole with BHP Bomb and set at 7,722' from surface on top of the F profile nipple.

    a) Ensure bomb is rated to 10k psi or greater and can collect 1 million data points and is set to collect data 1 time every second. This will give us 11.5 days of data collection in case we occur any delays.

48 hours before SRT

7. Shut in well and isolate injection line. Ensure 0 injection is able to occur.

Step Rate Test Procedure

8. RU pump and manifold both frac tanks together. Run 2 – 2" injection lines.

    a) RU an injection line and pressure transmitter to the production casing-tubing annulus and pressure up to 500 psi and preform an MIT.

        i. Have the service company save and export this data, call this file "Secrest MIT prior to SRT" and clear the data and prepare for SRT data collection.

    b) Ensure pumps can pump can output 9 bpm at 5000 psi.

    c) Max pressure limit for this job is 3000 psi.

    d) Install pressure transmitters on the tubing, not the discharge of the pump, and another transmitter on the production casing.

    e) A turbine meter is to be used to measure injection rate.

    f) Rig both injection lines up to the tubing.

9. Close bottom master valve and open all other valves and test Iron and wellhead to 5000 psi.

10. Open lower master valve and begin step rate test. Follow the below schedule exactly. Do not stop injection. Do not alter schedule. Steps need to be exactly at prescribed rates and for exactly 45 minutes unless:

    a) Breakdown is observed and 2 more steps passed that are not in the schedule.

        i. If this is the case and there is pressure headroom, we will divide the remaining pressure rating of the wellhead by number of remaining steps needed to get to 3 and add 1 – target a starting pressure for those remaining step instead of rate.

1. I.e. Stage 6 break is observed at 2500 psi and wellhead is rated to 3000 psi. 3000-2500 = 500 psi. 2 more stages needed, add one. 500/3= 166 psi. Stage 7 should be started at 2666 psi and stage 8 started at the end of stage 7 pressure plus 166 psi. Rate is to be held steady through the remainder of the stage. Stage length is to be the same as the previous stages.

ii. If there is no more pressure headroom available, hold the rate steady for the amount of time equivalent to running the needed number of extra stages add notes in stage notes.

1. I.e. if breakdown is observed on stage 6, and the ending pressure of stage 6 is 2950 psi and wellhead is rated to 3000 psi, keep the same rate of stage 6 for stage 7 and 8.

Step Rate Test					
Step	Time Start (mins)	Time End (mins)	Rate (BPM)	Stage Volume (Bbl)	Cumulative Volume (Bbl)
1	0	45	0.3	14	13.5
2	45	90	0.6	27	40.5
3	90	135	1.2	54	94.5
4	135	180	2.4	108	202.5
5	180	225	3.6	162	364.5
6	225	270	4.8	216	580.5
7	270	315	6.0	270	850.5

11. RD pump and iron.

12. MIRU Slickline unit and crane if required.

13. RIH to 7,722’ to retrieve the BHP Bomb. Send all data to Engineer.

Appendix

Current Tubing Detail

Current Tubing String

Tubing Description					Set Depth (ftKB)		Run Date		
Tubing - Production					7,732.3				
Item Des	Grade	Wt (lb/ft)	OD (in)	ID (in)	Len (ft)	Jts	Cum Len (ft)	Top (ftKB)	Btm (ftKB)
L-80 6.5# EUE 8rd IPC			2 7/8		7,708.50		7,720.30	12.0	7,720.5
F profile					2.00		11.80	7,720.5	7,722.5
On/Off tool			5 1/2		2.30		9.80	7,722.5	7,724.8
AS1X nickel plated pkr			2 3/8		7.00		7.50	7,724.8	7,731.8
rd WL re-entry guide			2 7/8		0.50		0.50	7,731.8	7,732.3

10/10/2022

2 frac tanks set and filled with produced water from battery. Same produced water that is currently being injected at this facility.

10/14/2022

Set BHPG with slickline. Tandem BHPG set on 1 second data, have 1mm data point capturing capability. enough for 11.5 days.

10/17/2022

Dave Alvarado with the OCD was notified of the upcoming SRT. Was told to contact Dan Smolik, forwarded notification to Dan Smolik.

10/20/2022

Arrived on location, Acid tech already on location. rig up iron. rig up hose to casing, pressure up to 500 psi and monitor pressure with transducer to data van, can be seen on pump chart, leave casing shut in and monitor for entire job. Rig up pumps back to iron and after 30 minutes, pressure tested up to master valve to 3200 psi, tubing transmitter located on the tubing right above master valve. began SRT

Step 1: .3 BPM for 45 mins - tubing pressure at the end of the stage - 155

Step 2: .6 BPM for 45 mins - tubing pressure at the end of the stage - 175

Step 3: 1.2 BPM for 45 mins - tubing pressure at the end of the stage - 337

Step 4: 2.4 BPM for 45 mins - tubing pressure at the end of the stage - 865

Step 5: 3.6 BPM for 45 mins - tubing pressure at the end of the stage - 1445

Step 6: 4.8 BPM for 45 mins - tubing pressure at the end of the stage - 2175

Step 7: 6 BPM for 45 mins - tubing pressure at the end of the stage - 2925

ISIP - 1500

5 min shut in pressure - 1130

10 min shut in pressure - 915

15 min shut in pressure - 765

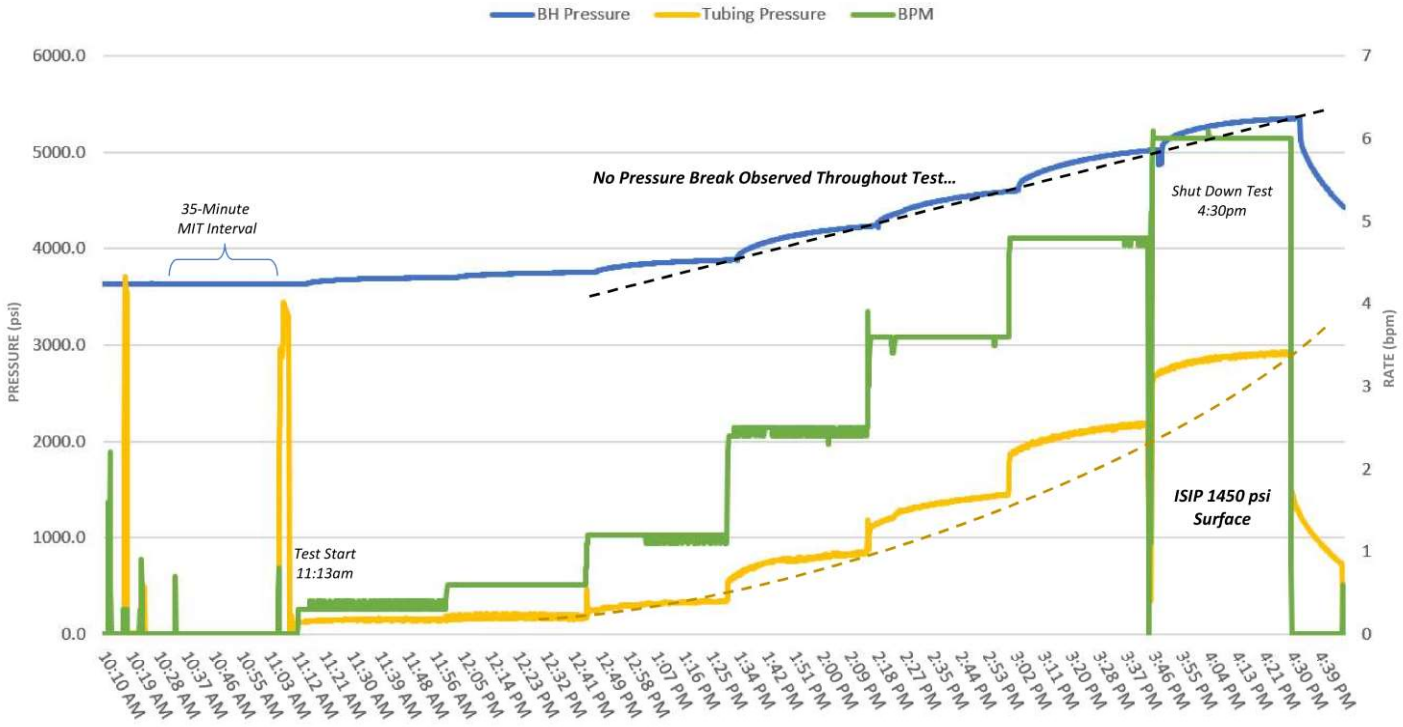
Rig down and move out pump.

10/21/2022

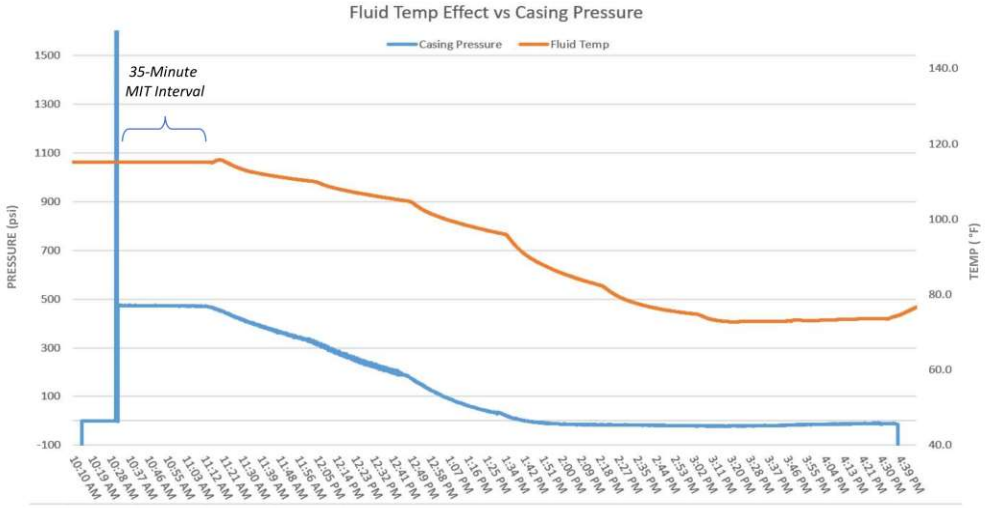
RU slickline truck and retrieve BHPG. Data sent to engineer to begin processing.

Secrest Et Al SWD #1

Step-Rate Test Data, October 20, 2022

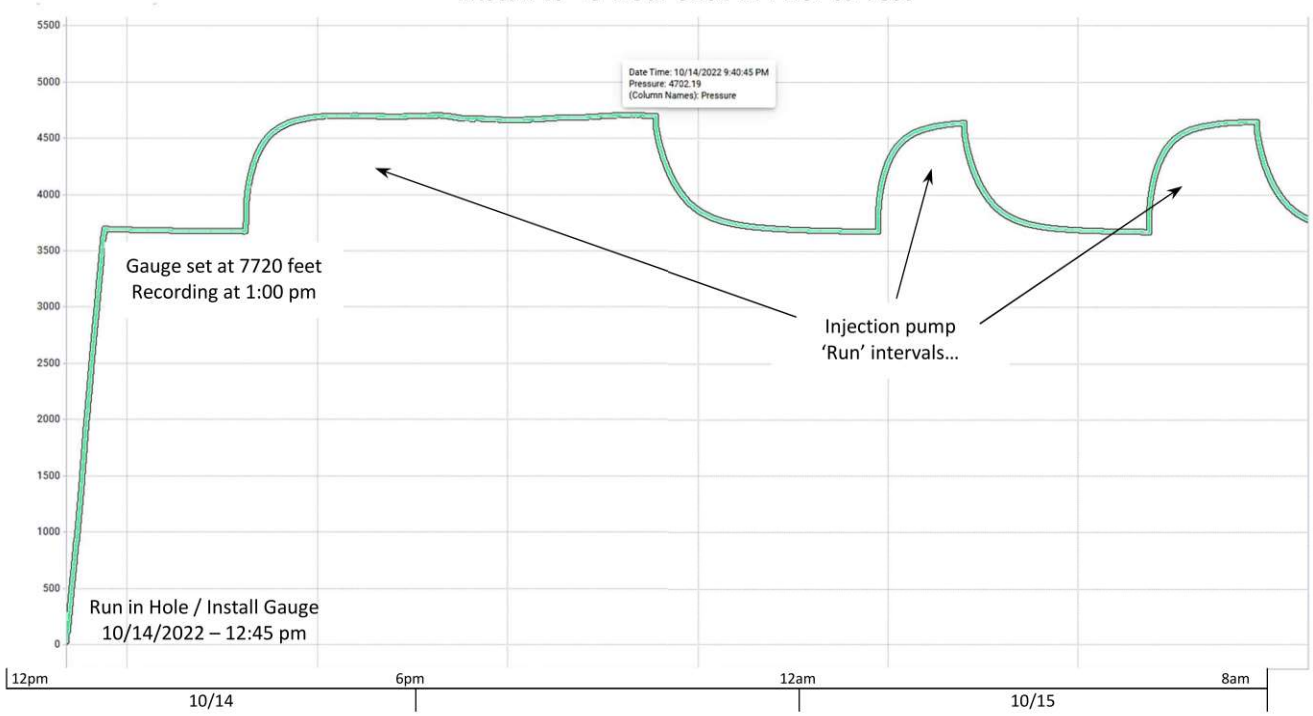


At the conclusion of the Mechanical Integrity Test (MIT) the casing pressure was monitored throughout the step-rate test. Interestingly, the reduction in the temperature of the fluid being pumped downhole created sufficient contraction of the tubing to reduce the tubing/ casing annulus pressure to 'zero'…

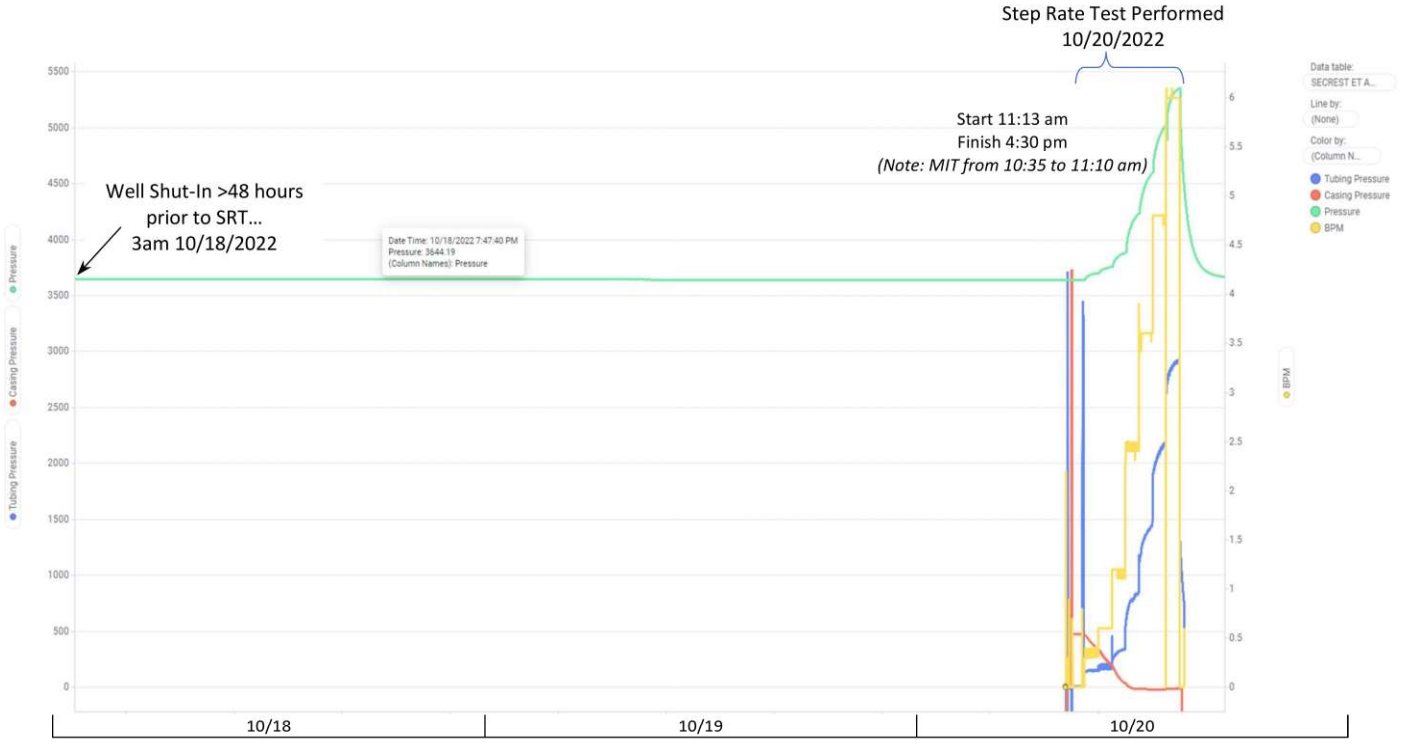


Bottom Hole Pressure Gauge Events

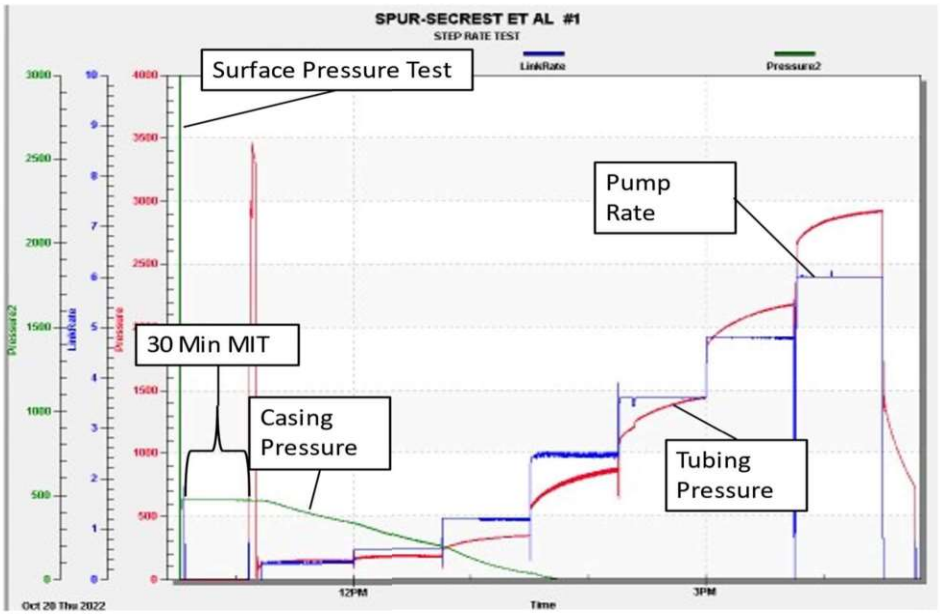
Install to 48-Hour Shut-In Prior to Test



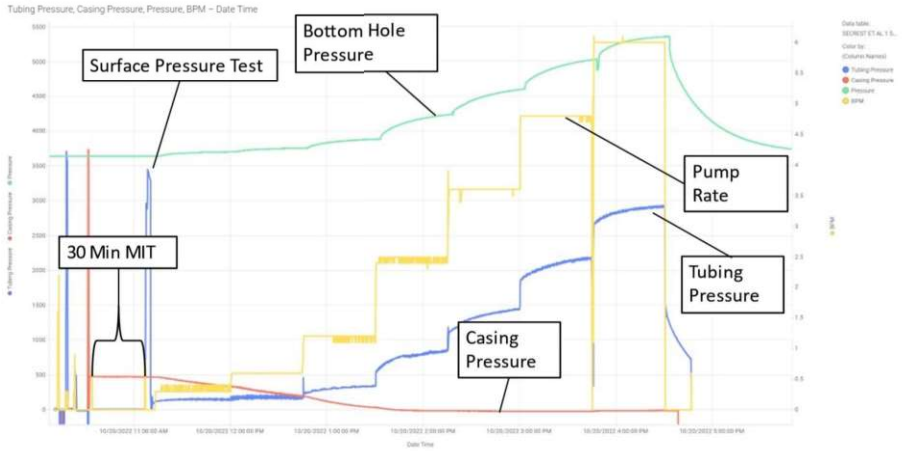
48-hour Shut-In thru Step-Rate Test Completion



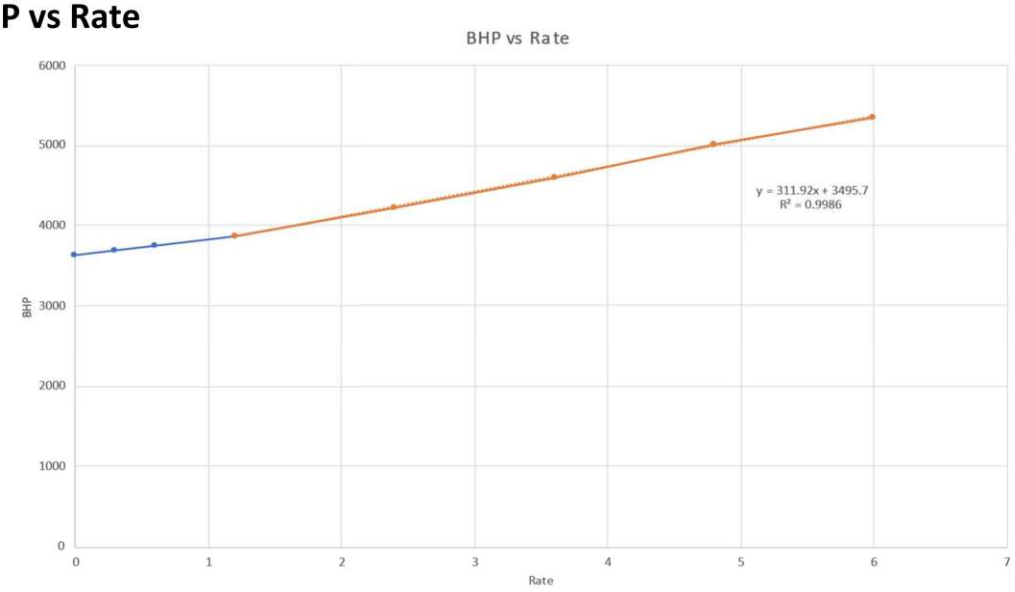
Field Data Chart



Pump SRT Chart with BHP Data



BHP vs Rate



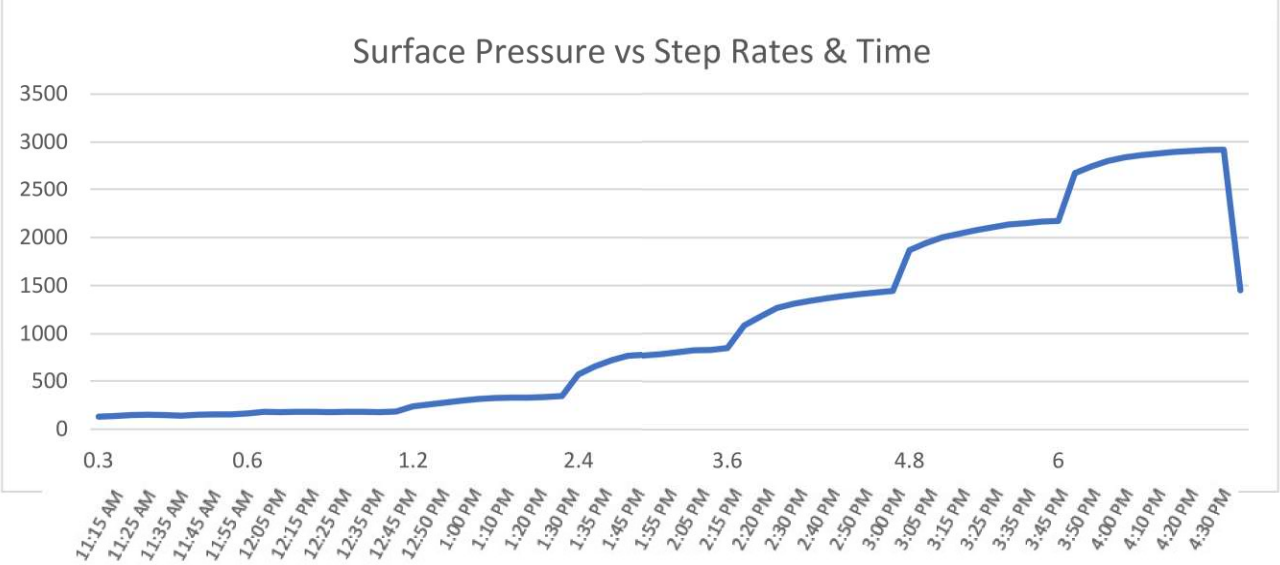
Secrest Et Al SWD #1

Step-Rate Test Data

October 20, 2022

Notes: Gauge accuracy improves with increased pressure. Data extracted from continuous recording at 10 second intervals (2380 rows of data). Pressures shown are average of 10 numbers at step-rate mark (5 either side of the mark). Rate changes occurred within 5 seconds of indicated time of day. Line chart based on extracted numbers in the table below.

11:13am Step #1 – 0.3 bpm ***(5% of max rate)***										
Time	0	+5	+10	+15	+20	+25	+30	+35	+40	+45
Pressure	133	138	147	151	146	139	150	153	155	163
12:00pm Step #2 – .6 bpm ***(10%)***										
Time	0	+5	+10	+15	+20	+25	+30	+35	+40	+45
Pressure	163	179	178	182	181	178	182	179	177	184
12:45pm Step #3 – 1.2 bpm ***(20%)***										
Time	0	+5	+10	+15	+20	+25	+30	+35	+40	+45
Pressure	239	259	279	296	313	324	327	329	334	344
1:30pm Step #4 – 2.4 bpm ***(40%)***										
Time	0	+5	+10	+15	+20	+25	+30	+35	+40	+45
Pressure	569	652	714	761	773	785	806	825	829	850
2:15pm Step #5 – 3.6 bpm ***(60%)***										
Time	0	+5	+10	+15	+20	+25	+30	+35	+40	+45
Pressure	1082	1177	1267	1310	1342	1369	1391	1412	1429	1446
3:00pm Step #6 – 4.8 bpm ***(80%)***										
Time	0	+5	+10	+15	+20	+25	+30	+35	+40	+45
Pressure	1869	1942	2002	2041	2078	2106	2135	2150	2167	2175
3:45pm Step #7 – 6.0 bpm ***(100% max rate)***										
Time	0	+5	+10	+15	+20	+25	+30	+35	+40	+45
Pressure	2672	2743	2798	2835	2858	2877	2893	2903	2913	2917
4:30 pm ISIP: 1450 psi 5 min: 1121 psi 15 min: 760 psi										
(Knocked off pump line from wellhead @ 4:46 pm)										



Submit 1 Copy To Appropriate District Office
District I – (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II – (575) 748-1283
811 S. First St., Artesia, NM 88210
District III – (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV – (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103
Revised July 18, 2013

WELL API NO. 30-015-22321

5. Indicate Type of Lease STATE ☐ FEE ☒

6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name: SECREST ET AL

1. Type of Well: Oil Well ☐ Gas Well ☒ Other SWD

8. Well Number 1

2. Name of Operator: SPUR ENERGY PARTNERS LLC

9. OGRID Number 328947

3. Address of Operator: 9655 KATY FREEWAY, SUITE 500, HOUSTON, TX 77024

10. Pool name or Wildcat: SWD; CANYON

4. Well Location
Unit Letter B : 660 feet from the NORTH line and 1980 feet from the EAST line
Section 7 Township 19S Range 26E NMPM EDDY County

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)* 3365' GR

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☒	COMMENCE DRILLING OPNS.	☐	P AND A	☐
PULL OR ALTER CASING	☐	MULTIPLE COMPL	☐	CASING/CEMENT JOB	☐		
DOWNHOLE COMMINGLE	☐						
CLOSED-LOOP SYSTEM	☐						
OTHER:	☐			OTHER:			☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Spur Energy Partners LLC requests to perform a step rate test to determine if injection pressure can be raised without fracturing the formation.

Proposed procedure and all other documentation is attached for your use.

Thank you.

Spud Date: | Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Sarah Chapman TITLE REGULATORY DIRECTOR DATE 08/17/2022

Type or print name SARAH CHAPMAN E-mail address: SCHAPMAN@SPURENERGY.COM PHONE: 832-930-8613

For State Use Only

APPROVED BY: MG TITLE Petroleum Specialist A DATE 09/27/2022

Conditions of Approval (if any):

API #	30-015-22321	County, ST	Eddy County, NM
Operator	Percussion Petroleum	Sec-Twn-Rng	7-19S-26E
Field	SWD; Canyon	Footage	660' FNL and 1980' FEL
Spud Date	10/28/1977	Survey	32.6808357,-104.41922

Secrest Et Al #1 SWD

Formation (MD)	
Grayburg	
San Andreas	
Glorieta	
Tubb	
Abo	
Wolfcamp	
Canyon	
Strawn	
Atoka	

RKB	3382'
GL	3370'

Hole Size	17-1/2"
TOC	surf
Method	circ returns

Csg Depth	296'
Size	13-3/8"
Weight	48#
Grade	H-40
Connections	
Cement	350sx

Hole Size	12-1/4"
TOC	surf
Method	circ returns

Csg Depth	1315'
Size	8-5/8"
Weight	32#
Grade	K-55
Connections	
Cement	905sx

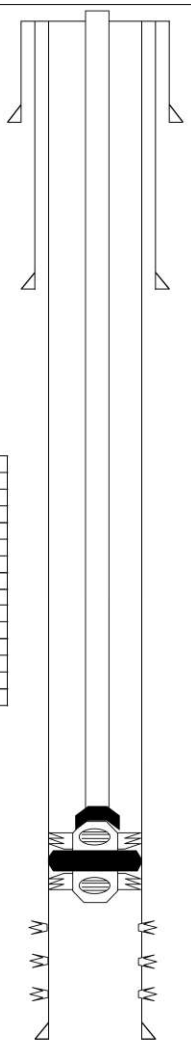
Tubing Detail				
Jts	Size	Depth	Length	Detail
1	KB	12	12	KB Correction
236	2-7/8"	7720.5	7708.5	2-7/8" L-80 6.5# EUE 8rd IPC
1		7722.5	2	F Profile
1	O/O	7724.8	2.3	5-1/2" x 2-7/8" On/Off Tool
1	PKR	7731.8	7	2-3/8"x5-1/2" AS1X nickel plated pkr
1	2-7/8"	7732.3	0.5	2-7/8" rd WL Re-entry guide

Hole Size	7-7/8"
TOC	surf
Method	circ returns

Csg Depth	8470'
Size	5-1/2"
Weight	17#
Grade	L-80
Connections	LTC
Cement	1350sx

PBTD	8368'
TD MD	9415'
TD TVD	9415'

Last Update	12/17/2018
By	Kenny Norton



2-7/8" tbg w/ pkr set at 7732'

Perforations
7780'-8038'
492 holes, 0.42", 90° phasing

Well History

2/22/2012	Rig up and drill out cement plugs to top of plug @ 8470'. Circulate Hole Clean Rand and cemented 5 1/2" Casing.
3/7/2012	Rig up and drill DV tool. Continue in hole and tag @ 8368'
	Perforate Canyon 2 SPF: 7780 - 8010 and 8022 - 8038 (Total 492 holes)
3/12/2012	Acidize with 15,00g 15% HCl + 738 RCNBS (20/10 bbls) 6 bpm @ 4166 psi. ISIP 0 psi.
3/14/2012	Ran 2 7/8" IPC and packer. Set packer and ran MIT.
6/7/2012	Pull 2 7/8" tubing and packer. Ran 3 1/2" ICP Ultra Flush Joint and packer.
	Set Packr and ran MIT.
2/24/2016	Clean up after spill
2/23/2018	Step-Rate Test
6/27/2018	Acidize well
10/26/2018	HIT
10/31/2018	Acidize well

Secrest Et Al #1

Step Rate Test
Hunter Spragg – 817.914.0987
AFE – TBD

SPUR ENERGY PARTNERS
NW Shelf
Eddy County, NM

OBJECTIVES

Perform a step rate test on the Secrest SWD to determine if injection pressure can be raised without fracturing the formation. 45-minute steps chosen due to lower permeability. Literature suggests Cisco/Canyon averages 5-10 md.

- Estimated BHP Bomb set date – 8/8/2022
- Estimated Well SI date - 8/9/2022
- Estimated SRT and Pressure Bomb retrieval date - 8/11/2022 (minimum of 48 hours after well is shut in)

Well Information	
Surface Location (NAD83)	Latitude: 32.6808357° / Longitude: -104.41922°
Ground Elevation / KB	3,370' / 12'
API Number	30-015-22321
AFE Number	**TBD**

Wellbore Details	
TVD / PBTD	TVD: 9,415' / PBTD: 8,368'
Perforations MD'	***7,780' - 8,038'***

Casing & Tubing Details - Current/Planned										
Size	**Depth** *(MD)*	**Weight** *lb/ft*	**Grade**	**ID** *In*	**Drift** *In*	**Thread**	**Burst** *psi*	**Collapse** *psi*	**Yield** *Mlbs*	**Cap** *bbl/ft*
5.500" *csg*	0' – 8,368'	17.0	L-80	4.892	4.767	LTC	7,740	6,280	320	0.023
2.875" IPC *tbg*	0' – 7,722'	6.5	L-80	2.411	2.317	EUE 8RD	10,570	11,160	144	0.00579

PROCEDURE

Spur Energy Partners LLC is committed to providing a safe working environment for all personnel. A safety meeting will be held prior to commencing each operation in order to define/clarify objectives, roles and responsibilities, identify all potential risk/hazards and establish a work procedure that is safe and environmentally sound. Meetings are to be documented on the reports returned to Spur Energy Partners LLC.

PERFORM SAFETY CHECKS AND SAFETY MEETING

1. Perform a safety meeting prior to rigging up **ANY** equipment on location. Discuss the job procedure and objective with all personnel on location. Document the safety meeting on the daily report sent to Spur. Make note of all potential risks/hazards, and clearly identify an emergency route and emergency vehicle. Also make note of any new or inexperienced personnel on location. Ensure proper Personal Protective Equipment (PPE) is used during the job. Minimums are hard hats, steel toes, safety glasses, H_2S monitors, and FR certified clothing as required. Designate a smoking area off location and 100' from any potential hydrocarbons.

Preparation

1. Set 2 - 500 bbl Frac tanks on location and begin filling with produced water from the facility. Do not use fresh water or produced water from any of the other surrounding facilities. Fill completely. Leave hoses attached to water tanks at the facility so water in water tanks can be utilized at the end of the test if needed.

2. Wellhead is shown to be rated to 3k psi. Ensure all wellhead valves have the same or higher rating.

72 hours before SRT

3. Notify OCD representative that SRT is planned to occur in 72 hours.

4. Notify OCD that a MIT will be ran with the pump truck and recorded in the data van on the date of the SRT. Ask if a chart recorder is required, if so, ensure one is on location for the day of the SRT.

5. Ensure well is on a vacuum; MIRU Precision Pressure Data Slickline truck and crane, utilize a pack-off for well control.

6. Run in hole with BHP Bomb and set at 7,722' from surface on top of the F profile nipple.

    a) Ensure bomb is rated to 10k psi or greater and can collect 1 million data points and is set to collect data 1 time every second. This will give us 11.5 days of data collection in case we occur any delays.

48 hours before SRT

7. Shut in well and isolate injection line. Ensure 0 injection is able to occur.

Step Rate Test Procedure

8. RU pump and manifold both frac tanks together. Run 2 – 2" injection lines.

    a) RU an injection line and pressure transmitter to the production casing-tubing annulus and pressure up to 500 psi and preform an MIT.

        i. Have the service company save and export this data, call this file "Secrest MIT prior to SRT" and clear the data and prepare for SRT data collection.

    b) Ensure pumps can pump can output 9 bpm at 5000 psi.

    c) Max pressure limit for this job is 3000 psi.

    d) Install pressure transmitters on the tubing, not the discharge of the pump, and another transmitter on the production casing.

    e) A turbine meter is to be used to measure injection rate.

    f) Rig both injection lines up to the tubing.

9. Close bottom master valve and open all other valves and test Iron and wellhead to 5000 psi.

10. Open lower master valve and begin step rate test. Follow the below schedule exactly. Do not stop injection. Do not alter schedule. Steps need to be exactly at prescribed rates and for exactly 45 minutes unless:

    a) Breakdown is observed and 2 more steps passed that are not in the schedule.

        i. If this is the case and there is pressure headroom, we will divide the remaining pressure rating of the wellhead by number of remaining steps needed to get to 3 and add 1 – target a starting pressure for those remaining step instead of rate.

1. I.e. Stage 6 break is observed at 2500 psi and wellhead is rated to 3000 psi. 3000-2500 = 500 psi. 2 more stages needed, add one. 500/3= 166 psi. Stage 7 should be started at 2666 psi and stage 8 started at the end of stage 7 pressure plus 166 psi. Rate is to be held steady through the remainder of the stage. Stage length is to be the same as the previous stages.

ii. If there is no more pressure headroom available, hold the rate steady for the amount of time equivalent to running the needed number of extra stages add notes in stage notes.

1. I.e. if breakdown is observed on stage 6, and the ending pressure of stage 6 is 2950 psi and wellhead is rated to 3000 psi, keep the same rate of stage 6 for stage 7 and 8.

Step Rate Test					
Step	**Time Start (mins)**	**Time End (mins)**	**Rate (BPM)**	**Stage Volume (Bbl)**	**Cumulative Volume (Bbl)**
1	**0**	**45**	**0.3**	**14**	**13.5**
2	**45**	**90**	**0.6**	**27**	**40.5**
3	**90**	**135**	**1.2**	**54**	**94.5**
4	**135**	**180**	**2.4**	**108**	**202.5**
5	**180**	**225**	**3.6**	**162**	**364.5**
6	**225**	**270**	**4.8**	**216**	**580.5**
7	**270**	**315**	**6.0**	**270**	**850.5**

11. RD pump and iron.

12. MIRU Slickline unit and crane if required.

13. RIH to 7,722’ to retrieve the BHP Bomb. Send all data to Engineer.

Appendix

Current Tubing Detail

Current Tubing String

Tubing Description					Set Depth (ftKB)		Run Date		
Tubing - Production					7,732.3				
Item Des	Grade	Wt (lb/ft)	OD (in)	ID (in)	Len (ft)	Jts	Cum Len (ft)	Top (ftKB)	Btm (ftKB)
L-80 6.5# EUE 8rd IPC			2 7/8		7,708.50		7,720.30	12.0	7,720.5
F profile					2.00		11.80	7,720.5	7,722.5
On/Off tool			5 1/2		2.30		9.80	7,722.5	7,724.8
AS1X nickel plated pkr			2 3/8		7.00		7.50	7,724.8	7,731.8
rd WL re-entry guide			2 7/8		0.50		0.50	7,731.8	7,732.3

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

CONDITIONS

Action 134904

CONDITIONS

Operator: Spur Energy Partners LLC 9655 Katy Freeway Houston, TX 77024	OGRID: 328947
	Action Number: 134904
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
mgebremichael	None	9/27/2022

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

CASE NO. 14752
ORDER NO. R-13494

APPLICATION OF CIMAREX ENERGY COMPANY OF COLORADO FOR APPROVAL OF A WATER DISPOSAL WELL, EDDY COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

This case came for hearing at 8:15 a. m. on October 27, 2011, at Santa Fe, New Mexico, before Examiner Richard Ezeanyim.

NOW, on this 21st day of December, 2011, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner.

FINDS THAT:

(1) Due public notice has been given, and the Division has jurisdiction of this case and its subject matter.

(2) The applicant, Cimarex Energy Company of Colorado ("Cimarex" or "Applicant"), seeks approval to re-enter and utilize its Secrest et al Well No. 1 API No. 30-015-22321 (the subject well), located 660 feet from the North line and 1980 feet from the East line of Section 7, Township 19 South, Range 26 East, NMPM, Eddy County, New Mexico for the purpose of disposing oil field produced water.

(3) Cimarex proposes to dispose of produced water from its nearby operated wells into the Pennsylvanian Canyon formation, at an interval between approximately 7780 feet and 8010 feet below the surface.

(4) Cimarex submitted this application administratively to the Division on August 31, 2011. The application was protested by both COG Operating LLC ("COG") and Nearburg Producing Company ("Nearburg"). Cimarex applied for an examiner hearing and COG withdrew its protest on October 25, 2011, just before the hearing.

(5) Nearburg appeared at the hearing through counsel and questioned the presentation of Cimarex but presented no evidence.

(6) No other party appeared at the hearing or otherwise opposed the application.

(7) At the hearing, Cimarex presented facts including the required Division form C-108. Division records and the Cimarex presentation indicate the following:

(a) This well is located approximately 3 miles northwest of Lake McMillan in Eddy County, just east of the North Dagger Draw-Upper Pennsylvanian Pool.

(b) Cimarex operates oil wells within the Yeso formation that produce large volumes of water along with the oil. This disposal well is needed in order to economically produce those oil wells.

(c) The subject well was drilled in 1977 as a Pennsylvanian Morrow test to a depth of 9415 feet. Intermediate casing was set at 1315 feet but no production pipe was installed. The well was deemed a dry hole and immediately plugged and abandoned.

(d) As preparation for disposal, Cimarex plans to re-enter the subject well to the existing cement plug located at 8470 feet, run 5-1/2 inch casing to that depth and cement to surface. The well will be perforated from 7780 to 8010 feet, acidized, and 2-7/8 inch plastic coated tubing run to 7740 feet and set with an injection packer.

(e) The Pennsylvanian aged Canyon formation is not prospective for hydrocarbon production within ½ mile of this well and disposal into this formation within the proposed vertical interval will not adversely affect the recovery of oil or gas.

(f) The Pennsylvanian Canyon formation at this location consists of interbedded limestone and dolomite. A drill stem test over the proposed disposal interval yielded high volumes of sulfur water with a trace of oil and gas.

(g) According to the geologist testifying at the hearing, the Pennsylvanian Canyon near the subject well is structurally and stratigraphically distinct from the North Dagger Draw-Upper Pennsylvanian Pool.

(h) The Pennsylvanian Canyon formation will contain the disposed waters and waters will not escape to other formations or into fresh water sands or onto the surface.

(i) Other than the subject well, there are two plugged wells located within the ½ mile Area of Review, and these wells were cased, cemented,

offsetting disposed waters.

(j) There is one non-plugged well within ½ mile of the subject well that was drilled to depths of the Pennsylvanian Canyon formation. This well is considered as "temporarily abandoned" and has an adequate cement top.

(k) Fresh water exists from 69 to 371 feet and is protected by multiple steel casing and cement. Cimarex will maintain and monitor a tubing-casing annulus down to the 7740 feet packer setting depth to ensure fresh waters are protected and disposed waters enter only the intended disposal interval.

(l) Cimarex located only one fresh-water well within 1 mile of the subject well, but it was inactive.

(m) Cimarex Energy Company of Colorado (OGRID 162683) operates approximately 1216 oil and gas wells in New Mexico and currently has no wells considered "inactive" and no additional required bonds and is in compliance with Division Rule 19.15.5.9 NMAC.

(n) According to Cimarex, the surface owner of this well-site is Virginia Weinmann Trust et al c/o Harding & Carbone Inc. of Houston Texas. Mailed certified notice to this affected person was stamped on August 24, 2011.

(o) Operators, lessees, and un-leased mineral owners of tracts located within ½ mile of this well were provided notice of this application to use this well for disposal.

(8) The applicant has presented satisfactory evidence that all requirements prescribed in 19.15.26.8 NMAC have been met and the operator is in compliance with 19.15.5.9 NMAC.

(9) Cimarex's proposal to use the subject well for disposal of oil field produced waters (UIC Class II only) into the Pennsylvanian Canyon formation from depths of 7780 feet and 8010 feet will protect correlative rights, prevent waste and protect the environment.

(10) The Cimarex application as proposed should be approved.

IT IS THEREFORE ORDERED THAT:

(1) Cimarex Energy Company of Colorado [OGRID 162683] ("Cimarex" or "operator") is hereby authorized to re-enter and utilize its Secrest et al Well No. 1 (API

Unit letter B of Section 7, Township 19 South, Range 26 East, NMPM, Eddy County, New Mexico for disposing oil field produced water (UIC Class II only) into the Pennsylvanian aged Canyon formation through perforations from approximately 7780 to 8010 feet through lined tubing with a packer set less than 100 feet above the permitted disposal interval.

(2) Operator shall take all steps necessary to ensure that the injected fluid enters only the disposal interval and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

(3) After installing tubing, the casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge or an approved leak detection device in order to determine leakage in the casing, tubing, or packer. The casing shall be pressure tested from the surface to the packer setting depth to assure casing integrity.

(4) The well shall pass an initial mechanical integrity test ("MIT") prior to initially commencing disposal and prior to resuming disposal each time the disposal packer is unseated. All MIT testing procedures and schedules shall follow the requirements in Division Rule 19.15.26.11A. NMAC.

(5) The wellhead injection pressure on the well shall be limited to **no more than 1556 psi**. In addition, the disposal well or system shall be equipped with a pressure limiting device in workable condition which shall, at all times, limit surface tubing pressure to the maximum allowable pressure for this well.

(6) The Director of the Division may authorize an increase in tubing pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the disposed fluid from the target formation. Such proper showing shall be demonstrated by sufficient evidence including but not limited to an acceptable Step-Rate-Test.

(7) The operator shall notify the supervisor of the Division's district office of the date and time of the installation of disposal equipment and of any MIT test so that the same may be inspected and witnessed. The operator shall provide written notice of the date of commencement of disposal to the Division's district office. The operator shall submit monthly reports of the disposal operations on Division Form C-115, in accordance with Division Rules 19.15.26.13 and 19.15.7.24 NMAC.

(8) Without limitation on the duties of the operator as provided in Division Rules 19.15.29 and 19.15.30 NMAC, or otherwise, the operator shall immediately notify the Division's district office of any failure of the tubing, casing or packer in the well, or of any leakage or release of water, oil or gas from around any produced or plugged and abandoned well in the area, and shall take such measures as may be timely and necessary to correct such failure or leakage.

upon Division approval. The Division may require the operator to demonstrate mechanical integrity of any injection well that will be transferred prior to approving transfer of authority to inject.

(10) The Division may revoke this injection permit after notice and hearing if the operator is in violation of 19.15.5.9 NMAC.

(11) The disposal authority granted herein shall terminate:

a. Two years after the effective date of this order if the operator has not commenced injection operations into the subject well; or

b. One year after the last date of reported disposal into this well.

(12) In either such event, the Division shall consider the well abandoned, and the authority to dispose will terminate *ipso facto*. The Division, upon written request mailed by the operator prior to the termination date, may grant an extension thereof for good cause.

(13) This order does not relieve the operator of responsibility should its operations cause any actual damage or threat of damage to protectable fresh water, human health or the environment, nor does it relieve the operator of responsibility for complying with applicable Division rules or other state, federal or local laws or regulations.

(14) Upon failure of the operator to conduct operations (1) in such manner as will protect fresh water, or (2) in a manner consistent with the requirements in this order, the Division may, after notice and hearing, (or without notice and hearing in event of an emergency, subject to the provisions of NMSA 1978 Section 70-2-23), terminate the disposal authority granted herein.

(15) Jurisdiction of this case is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

SEAL

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

Gabriella A. Gerke

for JAMI BAILEY
Director

New Mexico Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

John H. Bemis
Cabinet Secretary

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

Jami Bailey
Division Director
Oil Conservation Division

March 6, 2012

Cimarex Energy Co of Colorado
C/o Kay C. Havenor, Ph.D
904 Moore Ave
Roswell, NM 88201-1144

Re: Division Order No. R-13494, Case No. 14752 Disposal Interval
Secrest et al Well No. 1 (API 30-015-22321)
660 FNL, 1980 FEL, Unit letter B, Sec 7, T19S, R26E, NMPM, Eddy County
Disposal into the Canyon formation, Approximate Depths: 7780 to 8010 feet

You have submitted a request on behalf of Cimarex Energy Co of Colorado, for permission to extend the disposal interval in this well from 8010 feet to 8038 feet.

This well was re-entered to be used for disposal after the permit was issued and the permitted disposal depths were noticed and permitted as "approximate" because of this. The addition of 28 additional feet of allowed perforations on the bottom of the already permitted interval will provide direct access to the extent of an apparent Canyon formation porosity interval and may increase disposal rates and reduce surface pump pressure.

This request will not harm correlative rights or cause waste and is approved. Cimarex is granted permission to dispose of oil field waste waters into depths between 7780 to 8038 feet.

All other requirements of the above referenced disposal Order and requirements in Division Rules regarding disposal remain in full force and effect.

JAMI BAILEY
Director

JB/wvjj

Cc: Oil Conservation Division – Artesia
File: Case No. 14752 and API: 30-015-22321

Kay C. Havenor, Ph.D

Geoscience Technologies

Office: 575-626-4518
e-mail: KHavenor@GeoResources.com
904 Moore Ave
Roswell, New Mexico 88201-1144

February 28, 2012

New Mexico OCD Engineering Bureau
Attn: Mr. William Jones
1220 So. St. Francis Drive
Santa Fe, NM 87505

Re: Cimarex Secrest et al #1 SWD
Order No. R-13494, API 30-015-22321
660 FNL & 1980 FEL Sec. 7, T19S-R26E
Eddy Co. NM

Dear Mr. Jones:

Cimarex has completed the reentry of the subject well that is permitted for perforations from 7,780' to 8,010'. The clean-out was to a depth of 8,470' where they set and cemented 5-1/2" casing. The Canyon formation's lowest permitted perforation is at the top of additional Canyon porosity zone that extends to a depth of 8,038'. The lowest currently permitted perforations (8,010'), when treated with acid, will undoubtedly be in communication with the additional 28' of underlying porosity. The lower zone is also Canyon formation. There is a good shale zone below 8, 038' that will isolate additional Canyon formation beneath.

Cimarex respectfully requests the permitted depth of disposal be amended for an additional 28' to 8,038'. The underlying interval being requested is also completely within the Canyon and has no indications of hydrocarbon potential. While the additional 28' will accept water disposal, it is Cimarex's primary concern that they be permitted for what will most certainly occur on its own.

The re-entry is completed and ready for perforation. Cimarex respectfully requests consideration at the earliest possible time.

Respectfully submitted,

Kay Havenor

Kay Havenor
Consultant on behalf of Cimarex Energy Company of Colorado

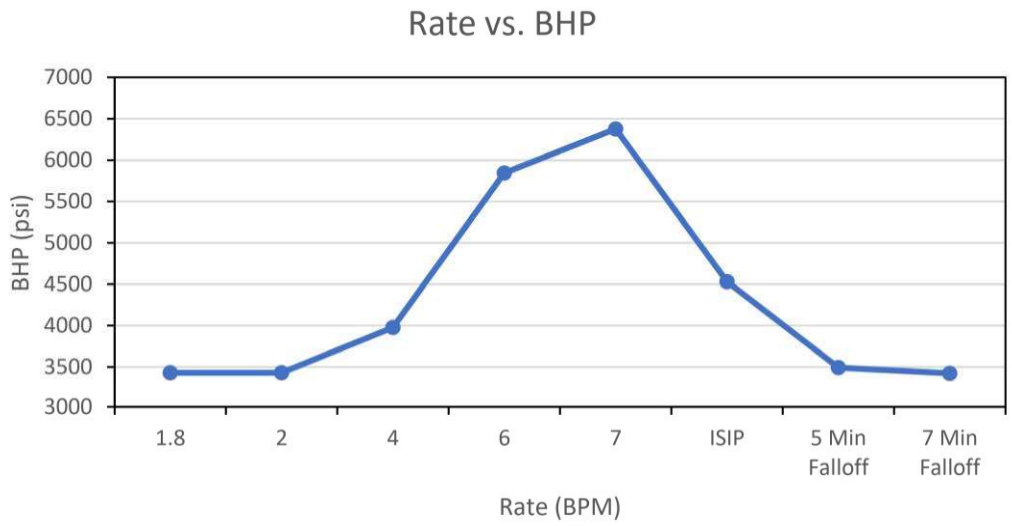
2018 Step Rate Test Data

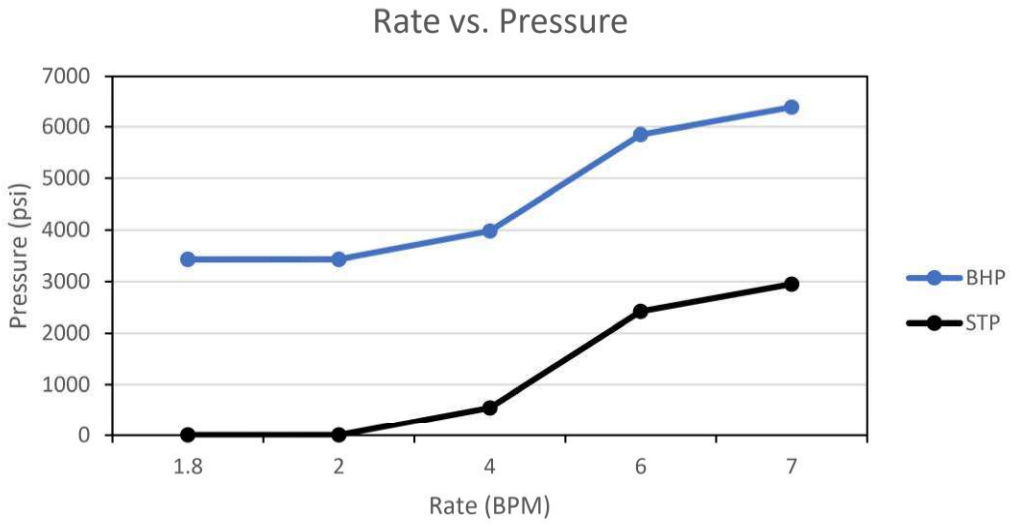
(Included for comparison purposes)

PERCUSSION PETROLEUM LLC

Step Rate Test

Rate (BPM)	Date	Time	BHP (psi)	STP (psi)
1.8	1/11/2018	9:05	3430	5
2	1/11/2018	9:22	3432	7
4	1/11/2018	9:54	3979	554
6	1/11/2018	10:22	5846	2421
7	1/11/2018	10:55	6378	2953
ISIP	1/11/2018	3:18	4531	1106
5 Min Falloff	1/11/2018	3:23	3495	70
7 Min Falloff	1/11/2018	3:25	3425	0





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

CONDITIONS

Action 197608

CONDITIONS

Operator: CIMAREX ENERGY CO. OF COLORADO 600 N. Marienfeld Street Midland, TX 79701	OGRID: 162683
	Action Number: 197608
	Action Type: [IM-SD] Admin Order Support Doc (ENG) (IM-AAO)

CONDITIONS

Created By	Condition	Condition Date
mgebremichael	None	3/15/2023