

ABOVE THIS LINE FOR DIVISION USE ONLY

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 _____

- IPI
 - Capstone Natural Resources LLC
 284372

2015 MAR 11 AM 10:10
 RECEIVED OOD

- [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

wey
 - Leach Federal #4
 30-015-05132
 Pool
 - Graybury Jackson
 SN-9-654
 28509

- [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.

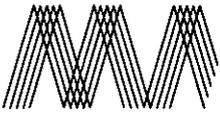
Clint BRIAN
 Print or Type Name

Clint Brian
 Signature

V.P. OPERATIONS
 Title

3 MARCH 2015
 Date

CBRIAN@CAPSTONE.NR.COM
 e-mail Address



**MONTGOMERY
& ANDREWS**
LAW FIRM

J. Scott Hall

Office: (505) 982-3873
Email: shall@montand.com
Reply To: Santa Fe Office
www.montand.com

March 11, 2015

Mr. David Catanach, Director
New Mexico Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505

Hand Delivered

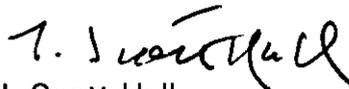
**Re: Capstone Natural Resources, LLC
Request to Increase Maximum Allowable Injection Pressure & Volume
Lea C (Federal #4 inj: 1980' FSL & 1980' FEL, Sec 11 T17S, R31E,
Eddy County Order No. R-4697-B API 30-015-05132**

Dear Mr. Catanach:

On behalf of Capstone Natural Resources, LLC, enclosed for filing are an original and one copy of an Administrative Application for Injection Pressure Increase.

Thank you.

Very truly yours,


J. Scott Hall

Enclosures

cc: Bureau of Land Management, Carlsbad Field Office
Clint Brian, Capstone Natural Resources

658406

325 Paseo de Peralta
Santa Fe, New Mexico 87501

T: 505.982.3873
F: 505.982.4289

P.O. Box 2307
Santa Fe, New Mexico 87504-2307

March 3 2015

Mr. Phillip Goetze
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

RE: Capstone Natural Resources, LLC
Request to Increase Maximum Allowable Injection Pressure & Volume
Lea C (Federal) #4inj: 1980' FSL & 1980' FEL, Sec 11, T17S, R31E, Eddy County
Order No. R-4697-B API 30-015-05132

Dear Mr. Goetze:

Capstone Natural Resources, LLC (CNR) respectfully requests administrative approval to increase the maximum allowable injection pressure on the referenced injection well from 681 psi to 2500 psi (average pressure of the last step during the step rate test). CNR performed a step rate test on February 24, 2015. Pursuant to the Conditions Of Approval (attached for your review) from the Notice of Intent sundry sent to the BLM, the max injection rate of 5 BPM was broken down into 7 steps: 0.25 BPM, 0.50 BPM, 1 BPM, 2 BPM, 3 BPM, 4 BPM & 5 BPM. Also as requested by the BLM, CNR ran a down hole pressure gauge on wireline to measure the BHP real-time during the step rate test. The BLM requested their data to be reported in 5 minute increments. Attached for your review are both the 5 minute BLM version and the full 3 second interval version provided to CNR by Cardinal Services.

CNR was not able to perform all 7 steps in the step rate test. Upon increasing the rate to 4 BPM in the beginning two minutes of step 6, the surface pressure started to approach the max treating pressure of 3,000 psi and the test was terminated. As evident on the attached pump charts, no distinctive break over was observed in the surface or BHP pressure recordings during the step rate test.

Since a breakdown pressure was not observed, CNR respectfully requests an increase in the permitted injection pressure to that approximately equal to the last 30 minute step of 2500 psi and an increase in daily injection volume of 750 BPD.

Prior to the step rate test, the Lea C #4 was shut in for 71 hours as requested by the BLM. (Actual BLM requirements were a minimum of 48 hours but a weather delay stretched it to 71 hours.) This recorded pressure falloff is included as well for your review.

With the increase in injection volume from makeup water of offset operator Hudson Resources added to CNR produced volume; there has been a slight increase in oil production noticed the last two months (+3 BOPD). Increasing the volume of water injected is expected to further enhance this secondary response.

Please contact me at cbrian@capstonenr.com or 918-236-3800 if you have any questions.

Sincerely,



Clint Brian P.E.
Vice President of Operations

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

5. Lease Serial No.
NMLC029418B

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

7. If Unit or CA/Agreement, Name and/or No.

1. Type of Well

Oil Well Gas Well Other: INJECTION

8. Well Name and No.
LEA C FEDERAL 4

2. Name of Operator **CAPSTONE NATURAL RESOURCESE** Contact: **CLINT BRIAN**
E-Mail: **cbrfan@capstonenr.com**

9. API Well No.
30-015-05132

3a. Address
2250 E. 73RD ST. STE 500
TULSA, OK 74136-6834

3b. Phone No. (include area code)
Ph: 818-236-3800

10. Field and Pool, or Exploratory
GRAYBURG

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 11 T17S R31E NWSE 1980FSL 1980FEL

11. County or Parish, and State

EDDY COUNTY COUNTY, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other Production Facility Changes
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

In order to increase injection into water flood. CNR has requested permission from OCD to inject off lease water. This request has been granted (Case File 15036). CNR will now be moving forward with preparations to bring off lease water from Hudson. Anticipated blend range of off lease/lease water is 71% off lease and 29% lease water. Total lease injection volumes are not expected to be more than 300 BWPD.

Compliance with the attached minimum conditions of approval is necessary for BLM consideration of an injection pressure increase

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #270687 verified by the BLM Well Information System
For CAPSTONE NATURAL RESOURCES, sent to the Carlsbad

Name (Printed/Typed) CLINT BRIAN

Title VICE PRESIDENT OF OPERATIONS

Signature (Electronic Submission)

Date 10/14/2014

APPROVED

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By _____

Title _____

JAN - 3 2015

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office _____

BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

Conditions of Approval

**Capstone Natural Resources
Lea C - 04, API 30015015132
T17S-R31E, Sec 11, 1980FSL & 1980FEL
January 13, 2015**

Stabilized injection: after perforation and acid stimulation workover, and the daily disposal volume rates and injection pressures have leveled out for about 3 months.

A profile survey is a wireline survey log that determines what perforations are taking produced water. You may want to use the same contractor that will run your step rate test.

1. If available, submit an electronic copy (Adobe Acrobat Document) cement bond log record from the top of the injection interval to top of cement. The CBL may be attached to a pswartz@blm.gov email.
2. Submit a stabilized injection profile survey for the well for review.
3. Submit the well's stabilized current psig/ft surface pressure to the top perforation.
4. Submit an anticipated bottom hole fracture pressure for the field or pool formation.
5. State the **targeted** maximum bbl/min injection rate. **The objective is to avoid fracturing the injection formation.**
6. Submit the injection fluid lbs/gal weight.
7. Submit an anticipated formation fracture or breakdown pressure at the injection top.
8. Stop injection a minimum of 48 hours before the step rate test and record the tubing pressure as it drops. The pressure should stabilize at or below the NMOCD permitted pressure for 8 hours. Document the pressure test on a seven day full rotation calibrated recorder chart registering within 25 to 85 per cent of its full range.
9. Calculate seven injection rates by multiplying the targeted maximum bbl/min injection by 0.05 for Step 1, 0.10 for Step 2, 0.20 for Step 3, 0.40 for Step 4, 0.60 for Step 5, 0.80 for Step 6, and 1.00 for Step 7. Record both surface and top perforation step pressures at five minute increments. Each step's time duration (usually 30 minutes) should be within 1 minute or less of the preceding step. If stabilized pressure values ($\Delta \pm 15$ psig) are not obtained between the last two (five minute) increments the test results will be considered inconclusive.
10. The Step Rate fluid used should be the same as the proposed injection fluid.
11. Flow rates are to be controlled with a constant flow regulator and measured with a turbine flow meter calibrated within 0.1 bbl/min. Record those rates using a chart recorder or strip chart.
12. Use a down hole transmitting pressure device and a surface pressure device with accuracies of ± 10 psig to measure pressures.
13. **Notify BLM 575-200-7902, if there is no response, 575-361-2822 Eddy Co. or 575-393-3612 Lea Co 24 hours before beginning the test. If no answer, leave a voice mail or email with the API#, workover purpose, and a call back phone number.**

14. When breakdown pressure is not achieved at the **targeted rate** the formation is accepting the injection fluid without fracturing, which is the **objective**. Stop the test.
15. When the formation fracture pressure has been exceeded as evidenced by at least two rate-pressure combinations greater than the breakdown pressure stop the test and record the bottom hole Instantaneous Shut-in Pressure. This ISIP is considered the minimum pressure to hold open a fracture in this formation at this well. Fifty psig less than the ISIP is the maximum bottom hole pressure BLM will approve.
16. Record with each five minute interval the corresponding rate (bbl/min), down hole, and surface pressure (psig). Provide BLM with the tabulation of each five minute interval. Include a graph showing the stabilized pressure at each injection rate. Submit that data to BLM with the shut-in pressure recording of paragraph 8.
17. File a sundry subsequent report with the data collected, requesting your proposed wellhead injection pressure.

Notes:

These conditions of approval for a step-rate test is an adaptation of principals and comments from several sources. The major resource being a paper dated January 12, 1999 from the United States Environmental Protection Agency, Region VIII, 999 18th Street – Suite 500, Denver, Colorado.

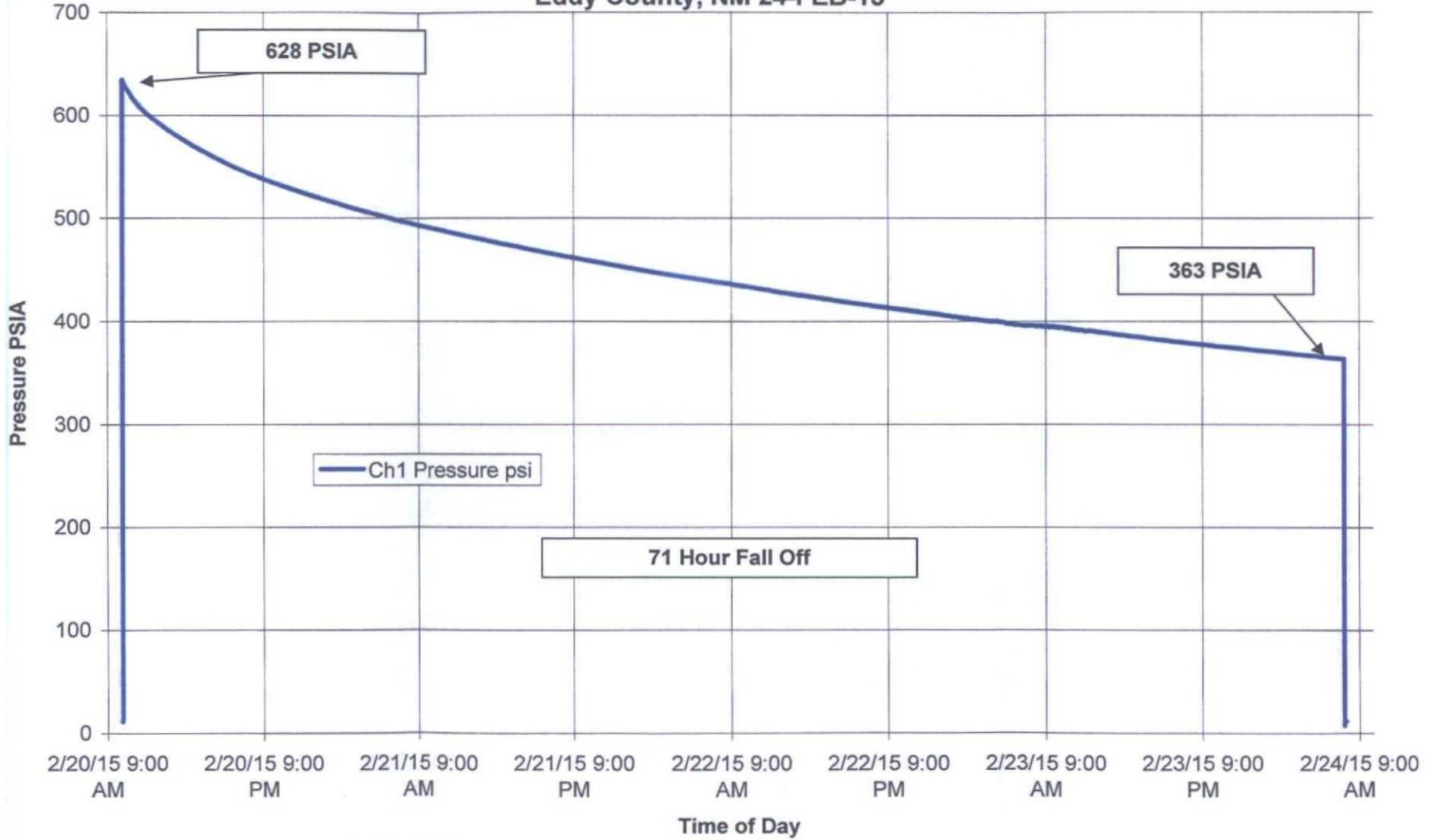
The intent of a step rate test is to establish that a proposed rate of injection into a formation is below fracture. Because it becomes likely that fracture pressure may be attained and exceeded it is considered a nonroutine fracturing job and requires a notice of intent.

References: 43 CFR 3162.3-2 Subsequent well operations.

CFR 146.13(a)(1) & CFR 146.23(a)(1) - Class I wells are permitted stimulation injection pressure to exceed frac pressure while Class II (production water disposal) wells do not have that provision.

Compliance of the operator with these BLM minimum conditions of approval is necessary for consideration of an injection pressure increase.

Capstone Natural Resources, LLC
Lee C Federal No. 4
Eddy County, NM 24-FEB-15



Step Rate Test



Cardinal Surveys Company

24-Feb-15

Capstone Natural Resources, LLC

Well: Lee C Federal No. 4

Field; Grayburg

County: Eddy County, New Mexico

API No. 30-015-05132

SC70521

File No. 22108

No Parting Pressure Indicated

Downhole PSI Tool Ser. No. CSC2604

Surface PSI Gauge Ser. No. CSC 2701

Tool @ 3,500'

	Start	End	Rate-BPD
1	8:38 AM	9:00 AM	0 3,500'
2	9:00 AM	9:30 AM	360
3	9:30 AM	10:00 AM	720
4	10:00 AM	10:30 AM	1440
5	10:30 AM	11:00 AM	2880
6	11:00 AM	11:30 AM	4320
7	11:30 AM	11:32 AM	5760
8	11:32 AM	11:45 AM	0 FALL OFF

9

10 **NOTE: TEST SHUT DOWN 2 MINUTES INTO STEP NO. 7**

11 **DUE TO SURFACE PRESSURE LIMIT**

12

13 **MAXIMUM SURFACE PRESSURE REACHED DURING THE TEST WAS 2,828 PSI**

14

15

16

17

18

Step Rate Test
24-Feb-15

Capstone Natural Resources, LLC
Well: Lee C Federal No. 4
Field: Grayburg
Location: Eddy County, New Mexico
API No. 30-015-05132



	S Time	E Time	D Time Min	Last Rate BPD	Step BPD	BHP PSIA	Surf PSIA	Cum BBL	Delta BBL	Avg. BPD	Lower Trend	Upper Trend
1	8:38 AM	9:00 AM	22	0	0	2058.8	356	0	0	0		
2	9:00 AM	9:30 AM	30	360	360	2626	949	4.1	4.1	197		
3	9:30 AM	10:00 AM	30	720	360	2782.1	1101	18.4	14.3	686		
4	10:00 AM	10:30 AM	30	1440	720	3029.1	1411	49.6	31.2	1498		
5	10:30 AM	11:00 AM	30	2880	1440	3369	1933	108.1	58.5	2808		
6	11:00 AM	11:30 AM	30	4320	1440	3614.9	2517	195.4	87.3	4190		
7	11:30 AM	11:32 AM	2	5760	1440	3651.2	2822	203.4	8	5760		
8	11:32 AM	11:45 AM	13	0	0	3394.7	1702	203.4	0	0		

9

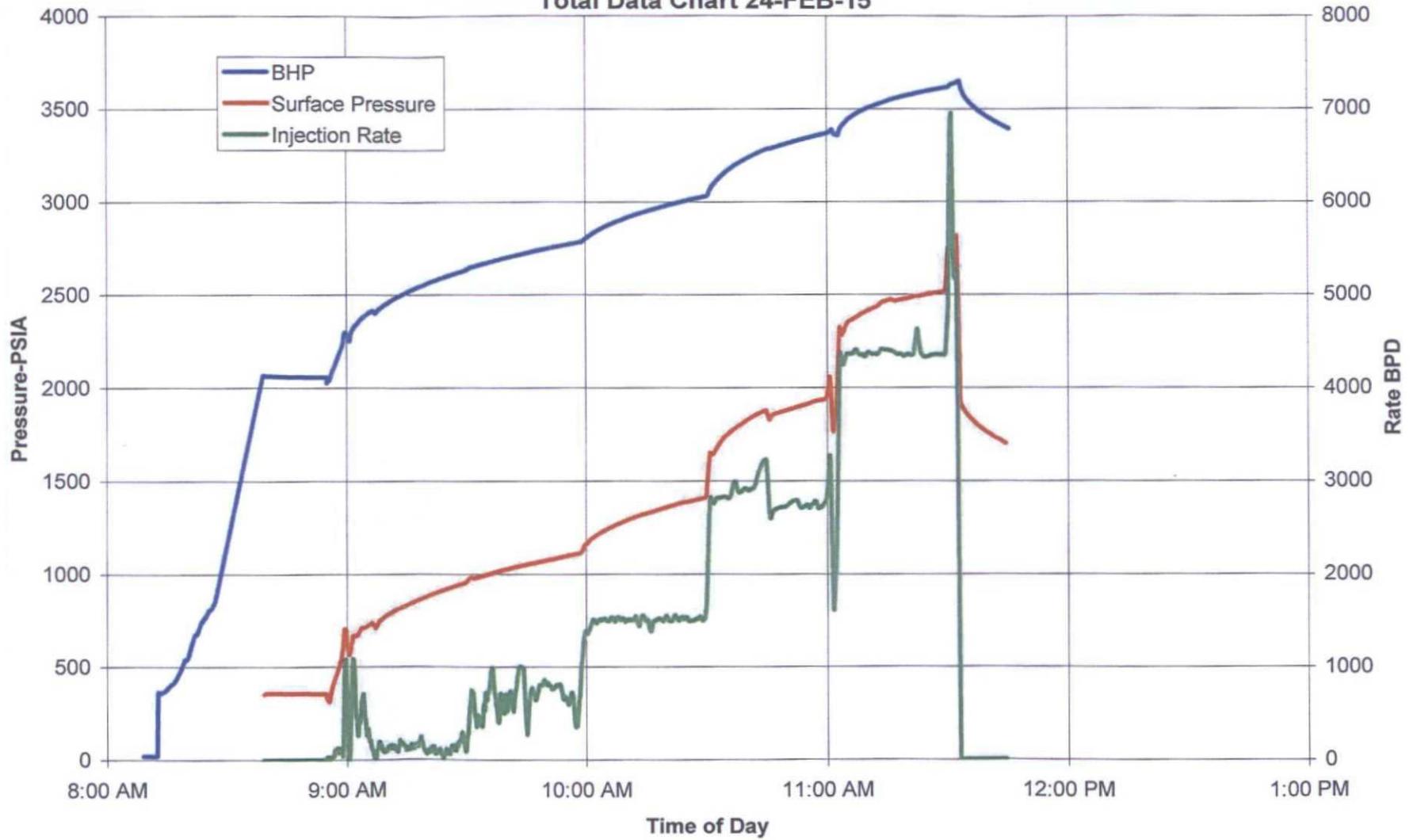
10 **NOTE: TEST SHUT DOWN 2 MINUTES INTO STEP NO. 7 DUE TO SURFACE PRESSURE LIMIT**

11
 12
 13
 14
 15
 16

upper trend
 lower trend
 intersect #DIV/0! BPD
 BHP PSI #DIV/0! PSIA

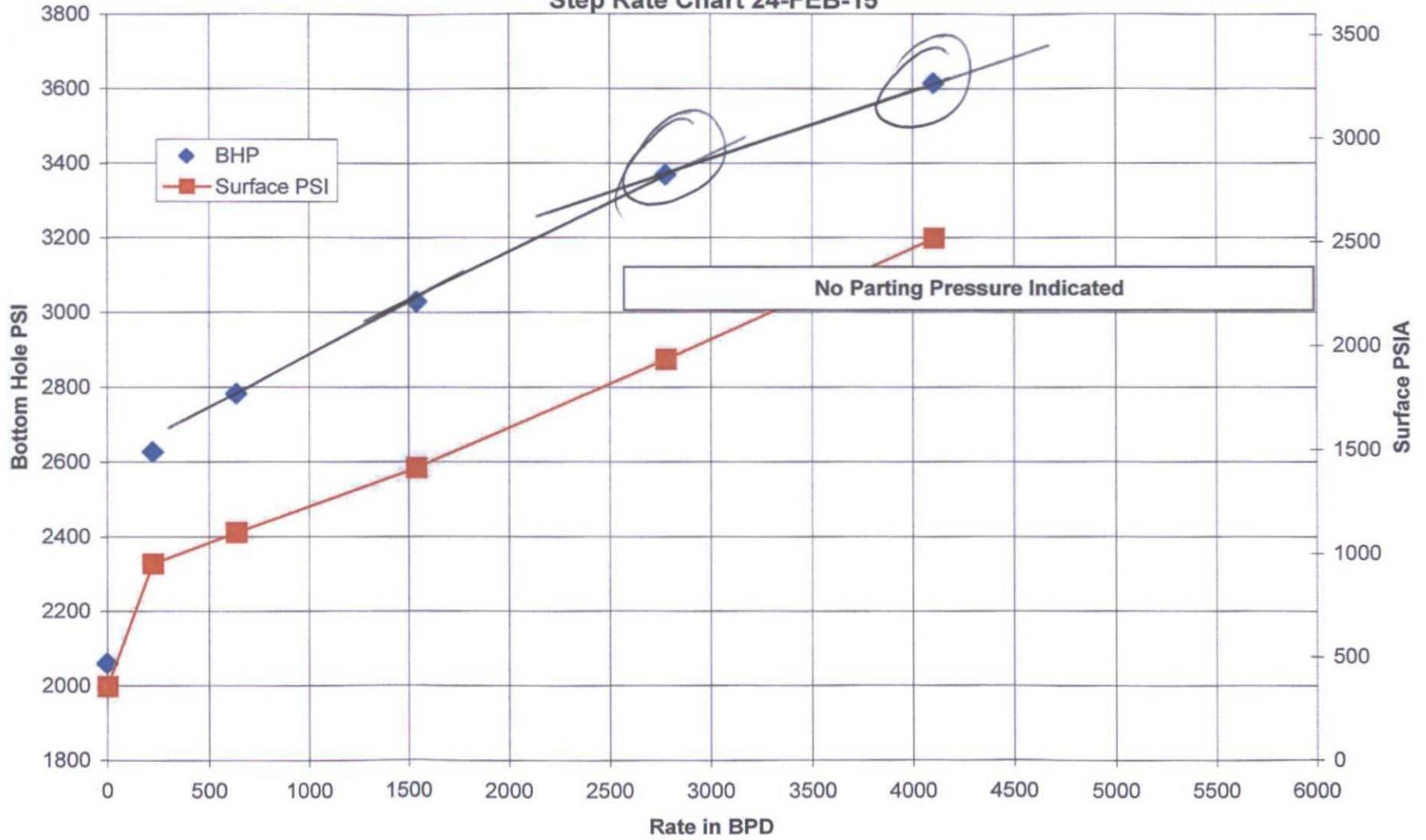


Capstone Natural Resources, LLC
Lee C Federal No. 4
Total Data Chart 24-FEB-15

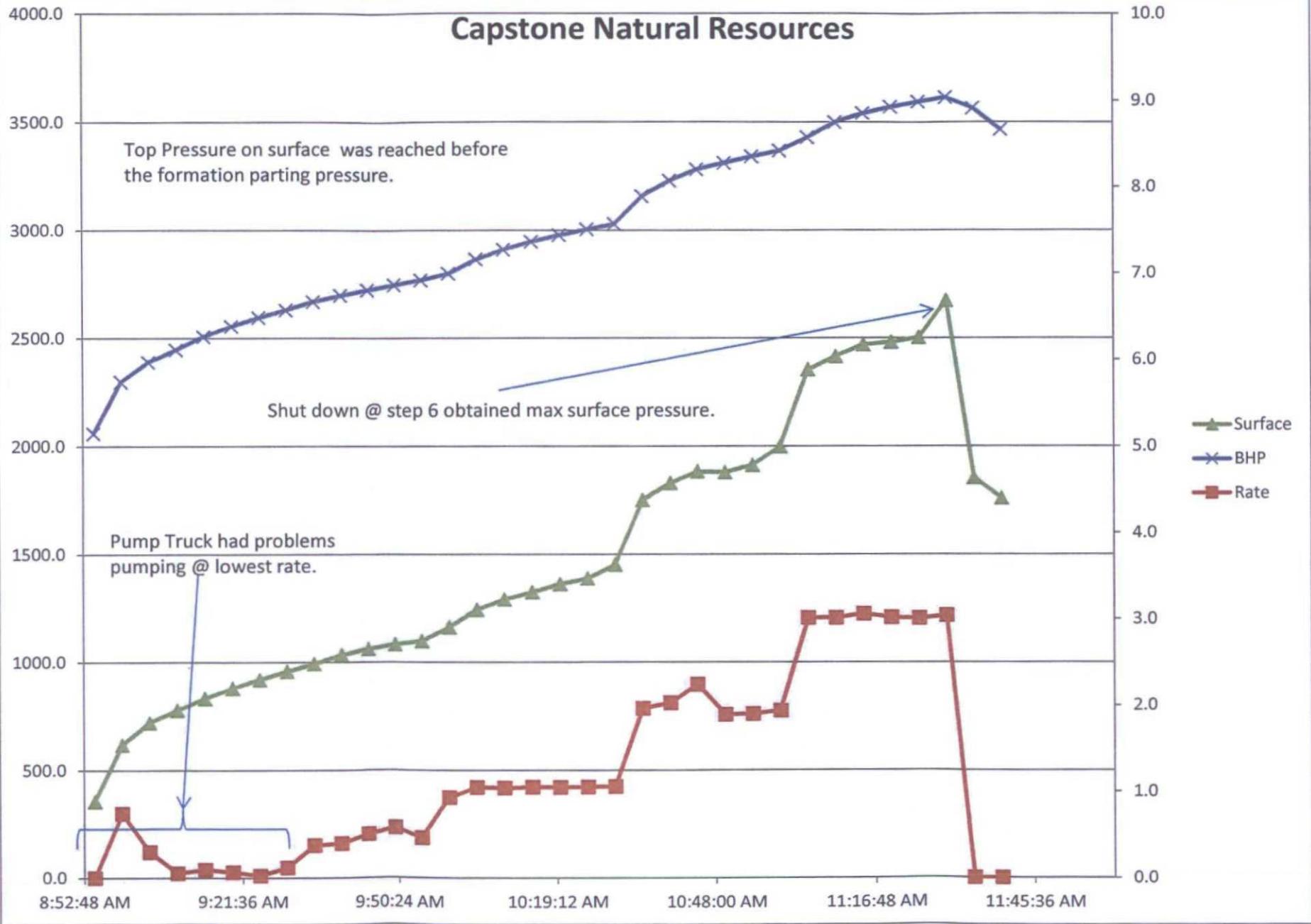




Capstone Natural Resources, LLC
Lee C Federal No. 4
Step Rate Chart 24-FEB-15

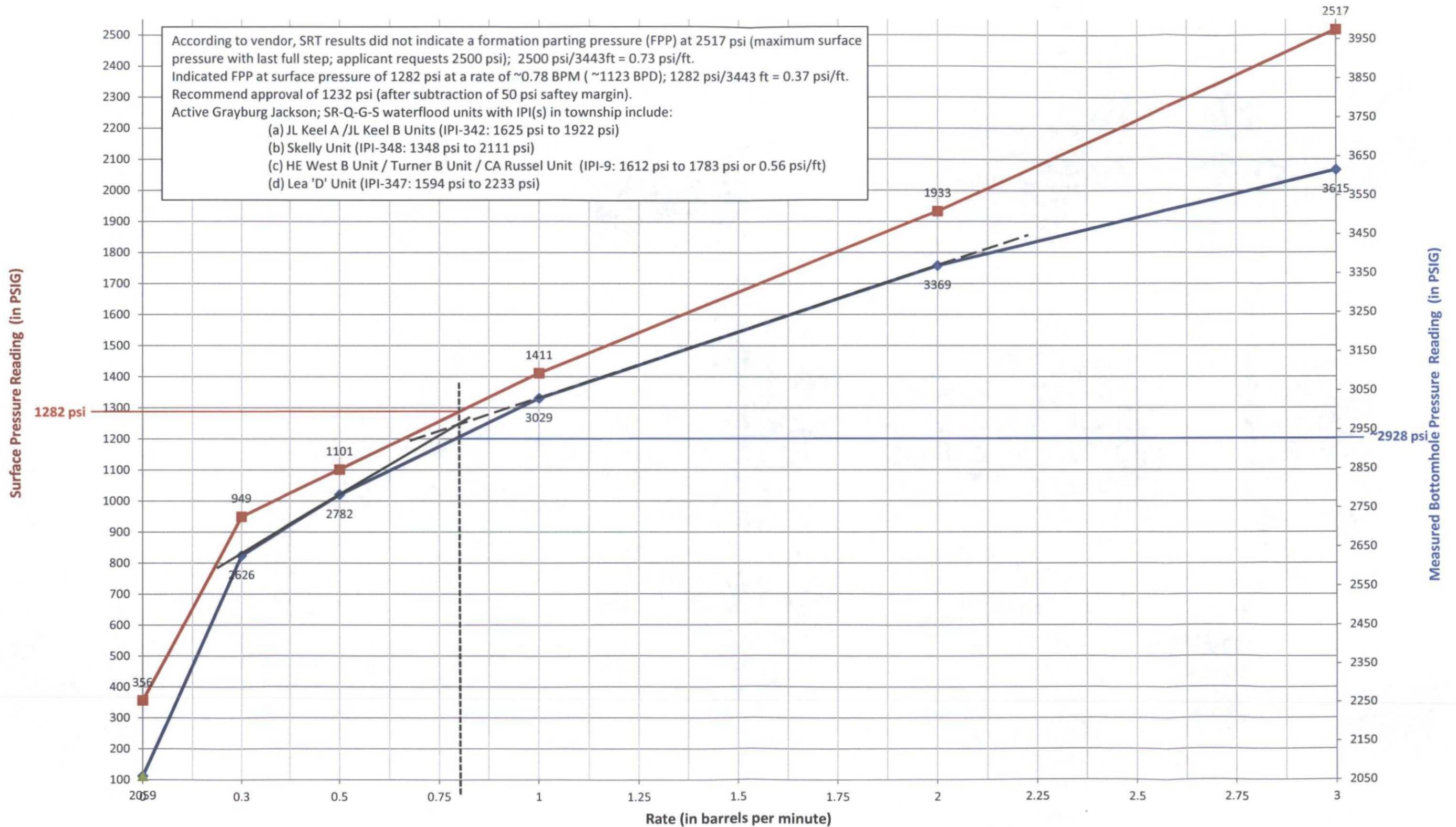


Capstone Natural Resources



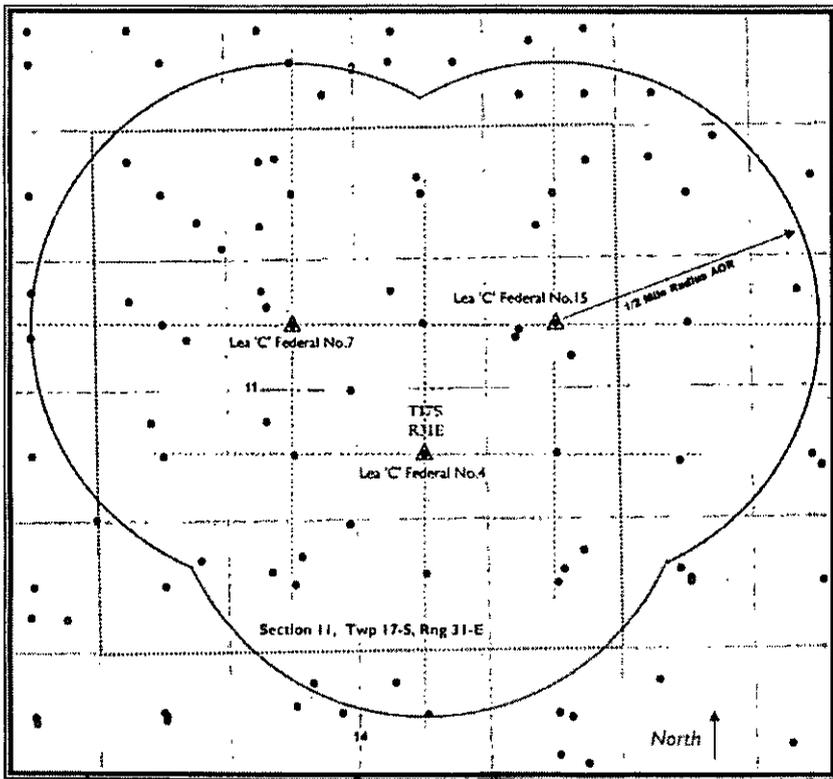
Time	Rate bpm	Surface psi	BHP psi
8:54 AM	0.0	356.1	2058.8
8:59 AM	0.7	617.4	2297.6
9:04 AM	0.3	719.9	2388.2
9:09 AM	0.1	777.3	2445.6
9:14 AM	0.1	831.4	2506.8
9:19 AM	0.1	878.9	2553.6
9:24 AM	0.0	918.6	2593.7
9:29 AM	0.1	957.1	2629.0
9:34 AM	0.4	992.6	2667.5
9:39 AM	0.4	1032.5	2696.3
9:44 AM	0.5	1061.0	2722.3
9:49 AM	0.6	1082.3	2745.6
9:54 AM	0.5	1097.7	2767.0
9:59 AM	0.9	1160.9	2797.8
10:04 AM	1.1	1241.8	2863.6
10:09 AM	1.0	1290.4	2909.3
10:14 AM	1.1	1324.3	2945.7
10:19 AM	1.1	1361.4	2976.6
10:24 AM	1.1	1388.0	3004.1
10:29 AM	1.1	1452.4	3029.1
10:34 AM	2.0	1751.3	3156.9
10:39 AM	2.0	1829.3	3228.7
10:44 AM	2.2	1882.6	3280.6
10:49 AM	1.9	1878.9	3311.1
10:54 AM	1.9	1912.5	3341.0
10:59 AM	1.9	1997.7	3368.0
11:04 AM	3.0	2353.3	3429.7
11:09 AM	3.0	2414.3	3499.0
11:14 AM	3.1	2469.0	3540.8
11:19 AM	3.0	2480.2	3571.0
11:24 AM	3.0	2502.1	3595.3
11:29 AM	3.0	2673.0	3615.5
11:34 AM	0.0	1854.1	3564.9
11:39 AM	0.0	1759.7	3466.0
11:44 AM	0.0	0.0	3404.5

R-4697-B / Lea C Federal No. 4 - IPI Application - SRT 2015 Results

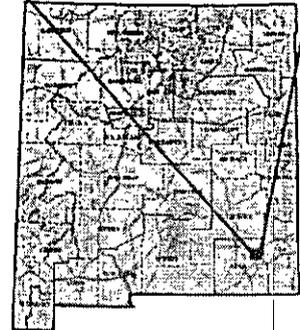
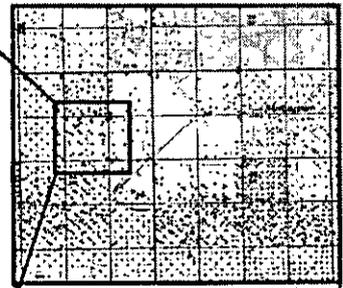


Form C-108 - Item V

Lea 'C' Federal Waterflood - Area of Review / Overview Map



~4.0 miles West of
Maljamar, NM



Eddy County, New Mexico

CAPSTONE
Natural Resources, LLC

SOS Consulting LLC

2.

CURRENT WELL SCHEMATIC

CAPSTONE
Natural Resources, LLC

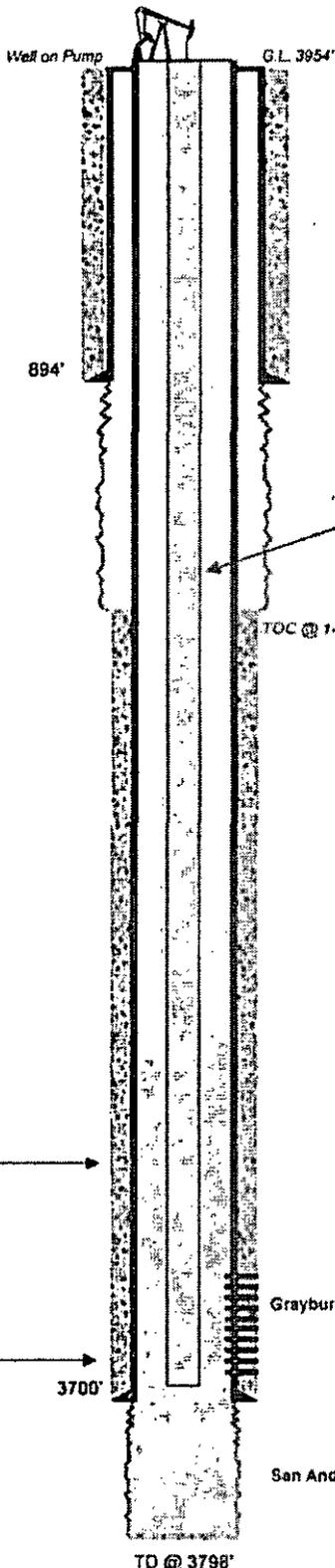
Lea 'C' Federal Well No.4

API 30-015-05132

1980' FSL & 1980' FWL, UL 'J', SEC. 11-T17S-R31E
EDDY COUNTY, NEW MEXICO

Spud Date: 4/07/1961

Grayburg Jackson; SR-Q-G-SA, Pool Code 28509



Surface Casing

8.625", 24.0#, J-55 csg. (10.0" Hole) @ 894'
w/ 125 sx Class 'C' - Circulated

Production Casing

5.5" 15.5#, J-55 csg. (8.0" Hole) @ 3700'
385 sxs - TOC @ 1460' by Calc.

WELL HISTORY

- 1961 - Completed as SA Openhole Producer
- 1972 - Added Pay w/ GB Perfs
- 1974 - Converted to Injection (R-4697)
- 1994-2003 - Apprv'd TA Status
- 2003 - Returned to Production
- 4/2012 - Acquired by Capstone NR, LLC
- 7/2012 - Acidize & Rtn to Production

Top GB 3362'

Top SA 3691'

Produced Fluids

Grayburg Perfs: 3443', 89', 3503', 15', 43', 68', 74', 92',
3604', 25', 33', 50', 60', 69', 82'

San Andres Openhole: 3700'-3798'

TD @ 3798'

