

DATE IN 11/21/07	SUSPENSE	ENGINEER WVS	LOGGED IN	TYPE HPT 290	APP NO. PKVR 0733355654
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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] **OPERATOR/Applicant Name:** _____ **OGRD:** _____
 (If one well) **Lease/Well Name:** _____
Well API No. 30- _____ - _____

[2] **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

[3] **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
 U.S. Bureau of Land Management
 [E] ☐ Notification and/or Concurrent Approval by SLO
 Commissioner of Public Lands, State Land Office
 [F] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,
 [G] ☐ Waivers are Attached

[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.

Print or Type Name	Signature	Title	Date
		e-mail Address	

RECEIVED
 2007 NOV 29 PM 3:30

BOLD ENERGY, LP

415 W. WALL, SUITE 500
MIDLAND, TEXAS 79701

MAIN: 432-686-1100
FAX: 432-686-1104

November 27, 2007

New Mexico Oil Conservation Division
Engineering Bureau
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505
505-476-3448

Attn: William Jones, PE

RE: **Request for Increase in Maximum Allowable Surface Injection Pressure**
Antelope Ridge Unit No. 4
Unit Letter "B" Section 4 T24S R30E
Lea County, New Mexico

Bold Energy, LP respectfully requests approval to increase the maximum allowable surface injection pressure on its Antelope Ridge Unit No. 4 SWD well.

Attached please find the following:

- 1) Step-rate test analysis.
- 2) Current water disposal permit SWD-1049.
- 3) Log section covering the injection interval
- 4) Current wellbore schematic.
- 5) Form 3160-5 request for increase in allowable surface injection pressure.

As shown with the attached analysis, it has been determined that the fracture extension pressure at surface is 1,400 psi. Applying a safety factor of 50 psi, Bold Energy respectfully requests approval to increase the maximum allowable surface injection pressure to 1,350 psi from the current maximum allowable pressure of 1,034 psi.

Thank you,



Shannon L. Klier
Operations Engineering Manager

BOLD ENERGY, LP

ARU #4 SWD

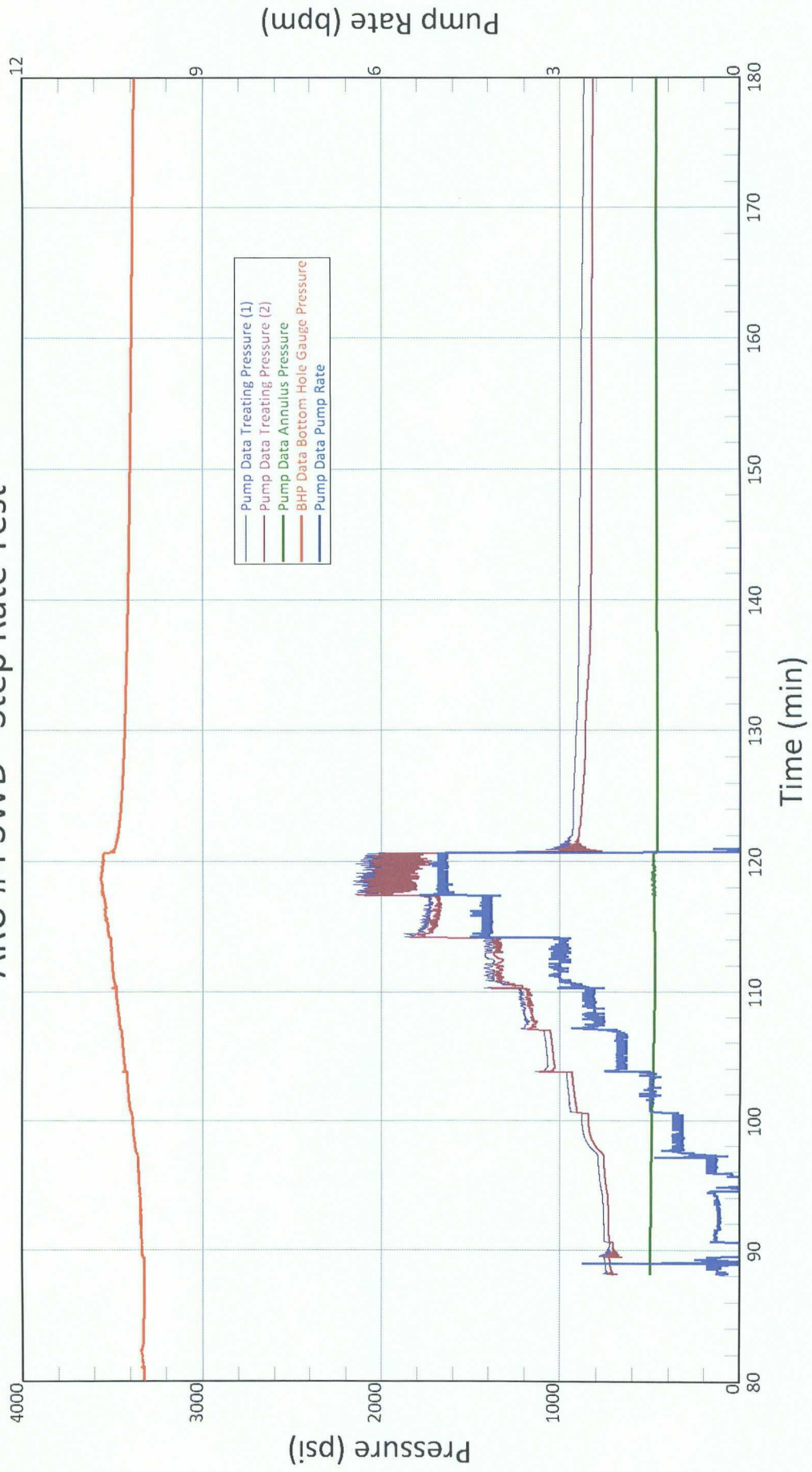
API No. 30-025-21037

Step-Rate Injection Test
11/19/07

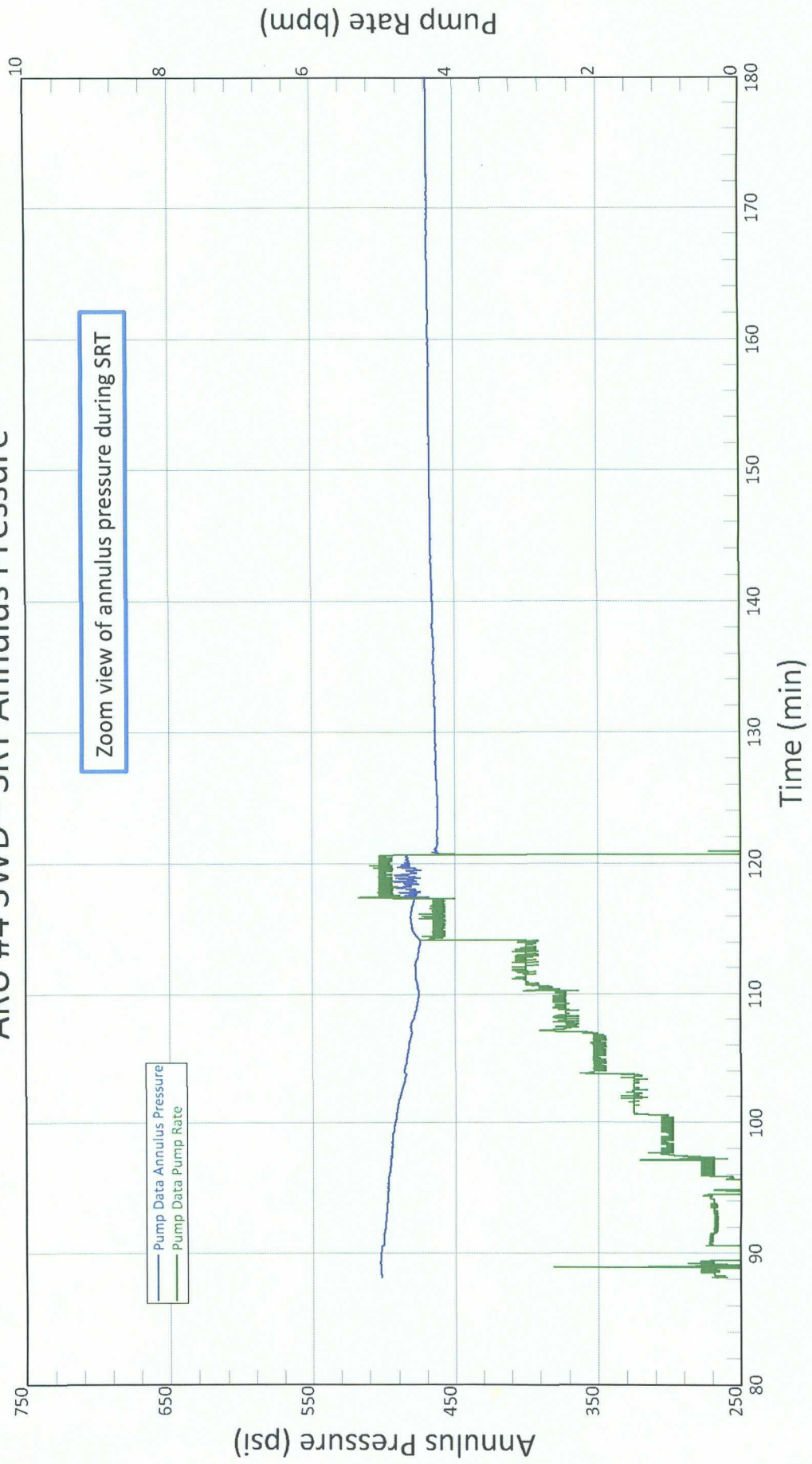
Request for Increase in
Allowable Surface Injection Pressure

Submitted by: Shannon L. Klier

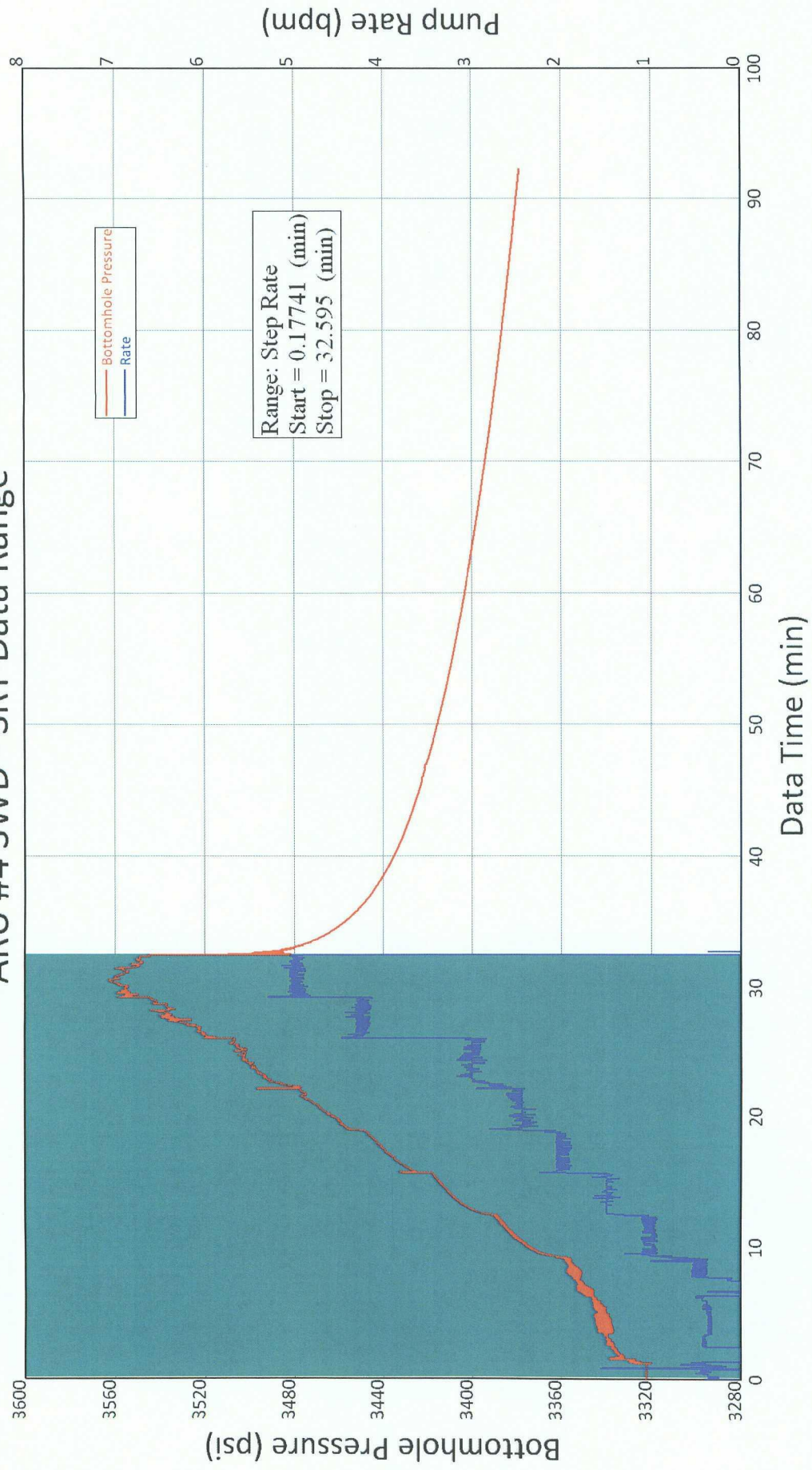
ARU #4 SWD - Step Rate Test



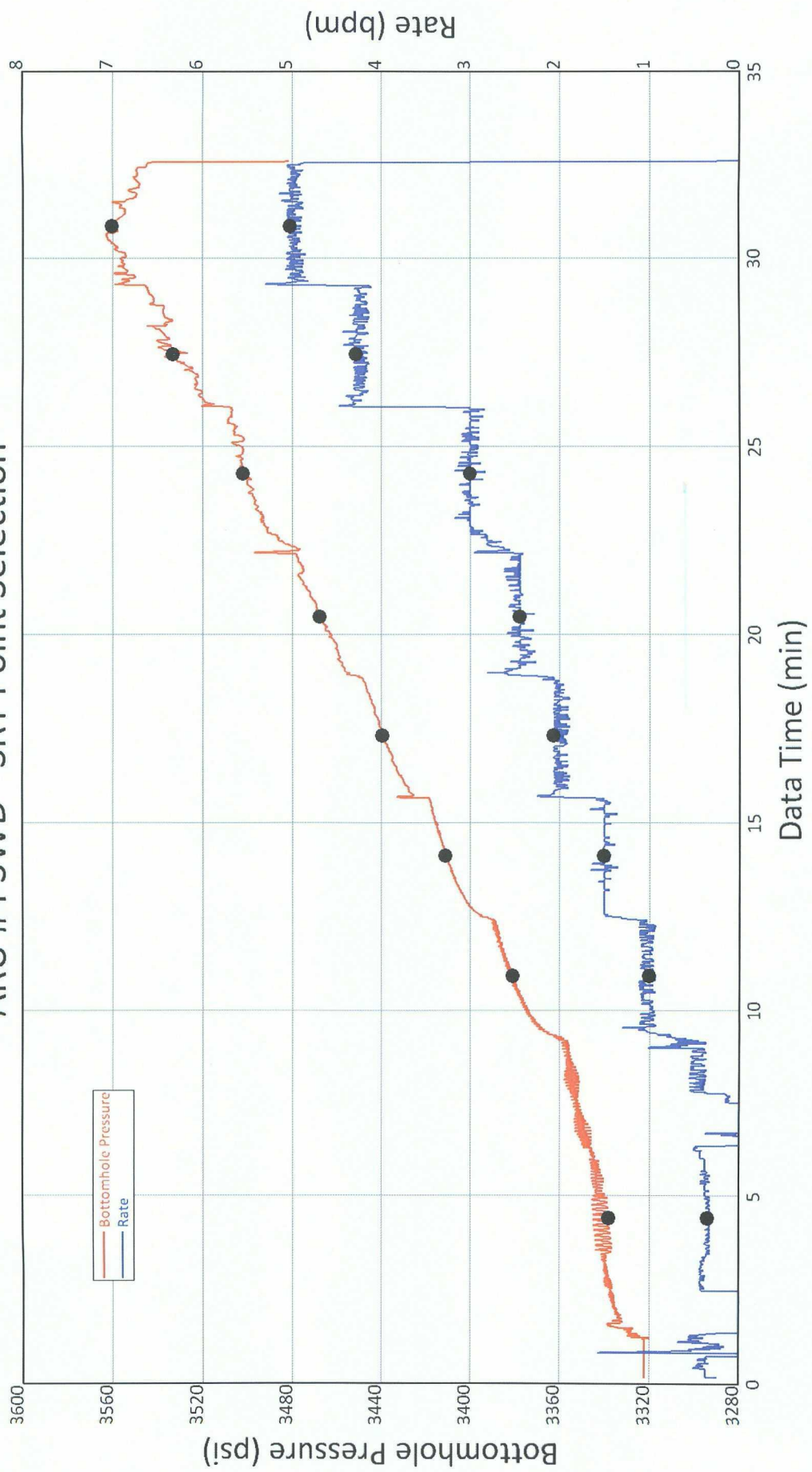
ARU #4 SWD - SRT Annulus Pressure



ARU #4 SWD - SRT Data Range

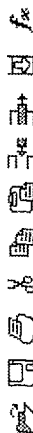


ARU #4 SWD - SRT Point Selection





Step Rate - Pressure Table



Specific Gravity of

Perforations

Number: Discharge Diameter: (in.)

	Rate (bpm)	Bottomhole Pressure (psi)	DP Fric (psi)	DP Frac (psi)	DP Perf Ideal (psi)	Extension Pressure (psi)
1	0.351515	3338.13	0	0	1.1873e-05	3338.13
2	1.00699	3380.89	0	0	9.7436e-05	3380.89
3	1.5	3411.03	0	0	0.0002162	3411.03
4	2.0625	3439.18	0	0	0.00040875	3439.18
5	2.4375	3467.09	0	0	0.0005709	3467.09
6	3	3501.52	0	0	0.0008648	3501.52
7	4.27465	3532.57	0	0	0.00175579	3532.57
8	5.01615	3559.94	0	0	0.00241775	3559.94

Select Points

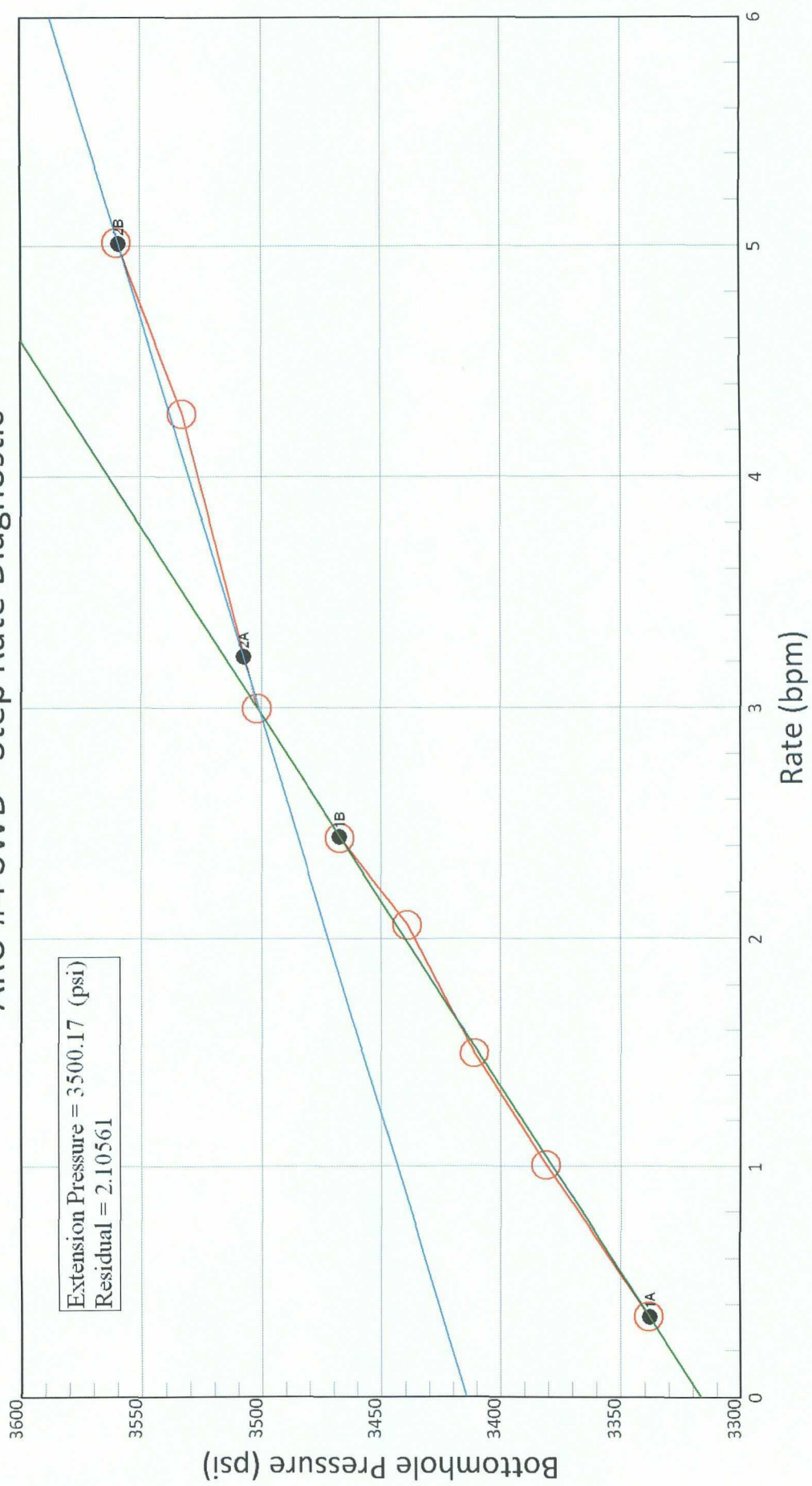
Show Plot

OK

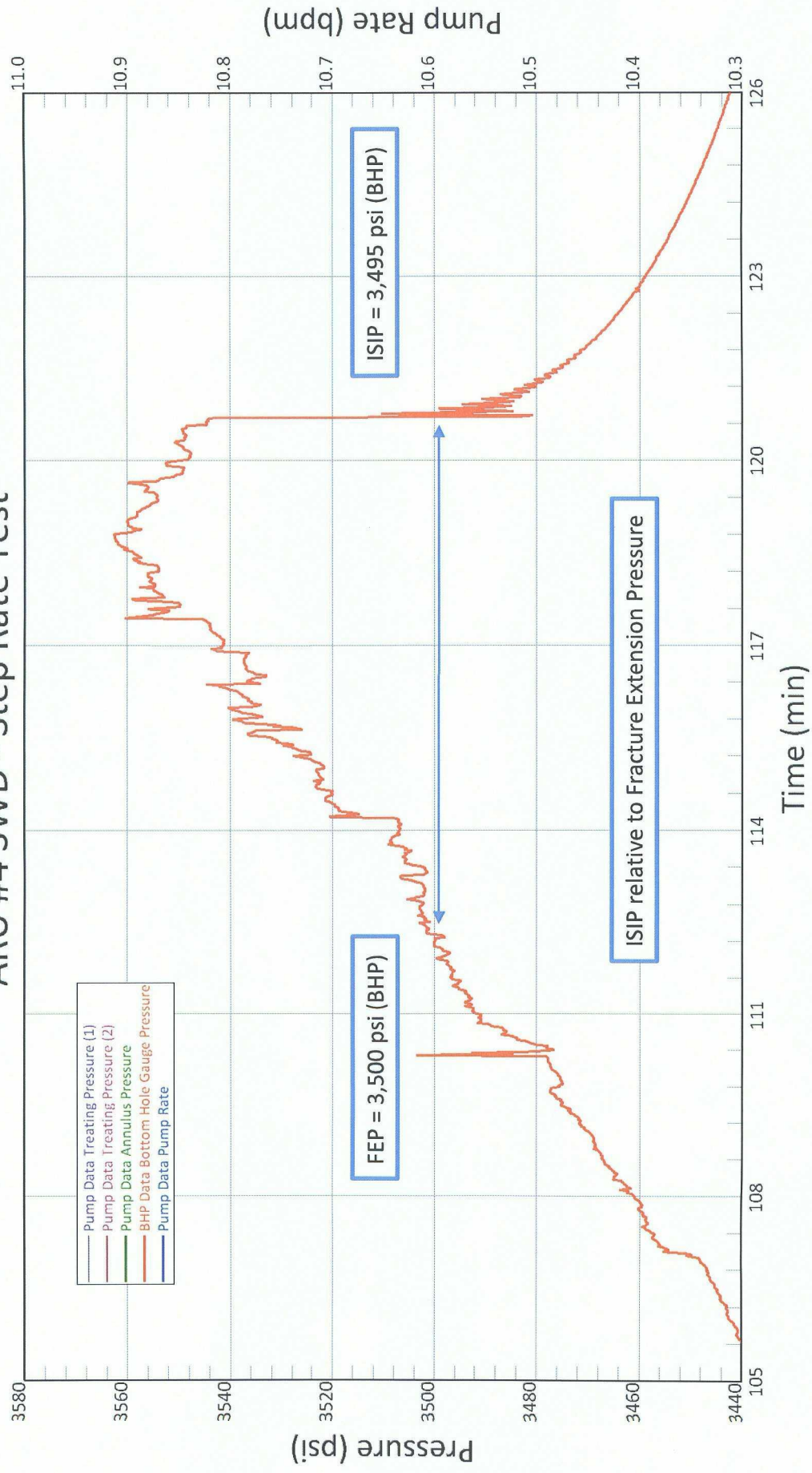
Cancel

Help

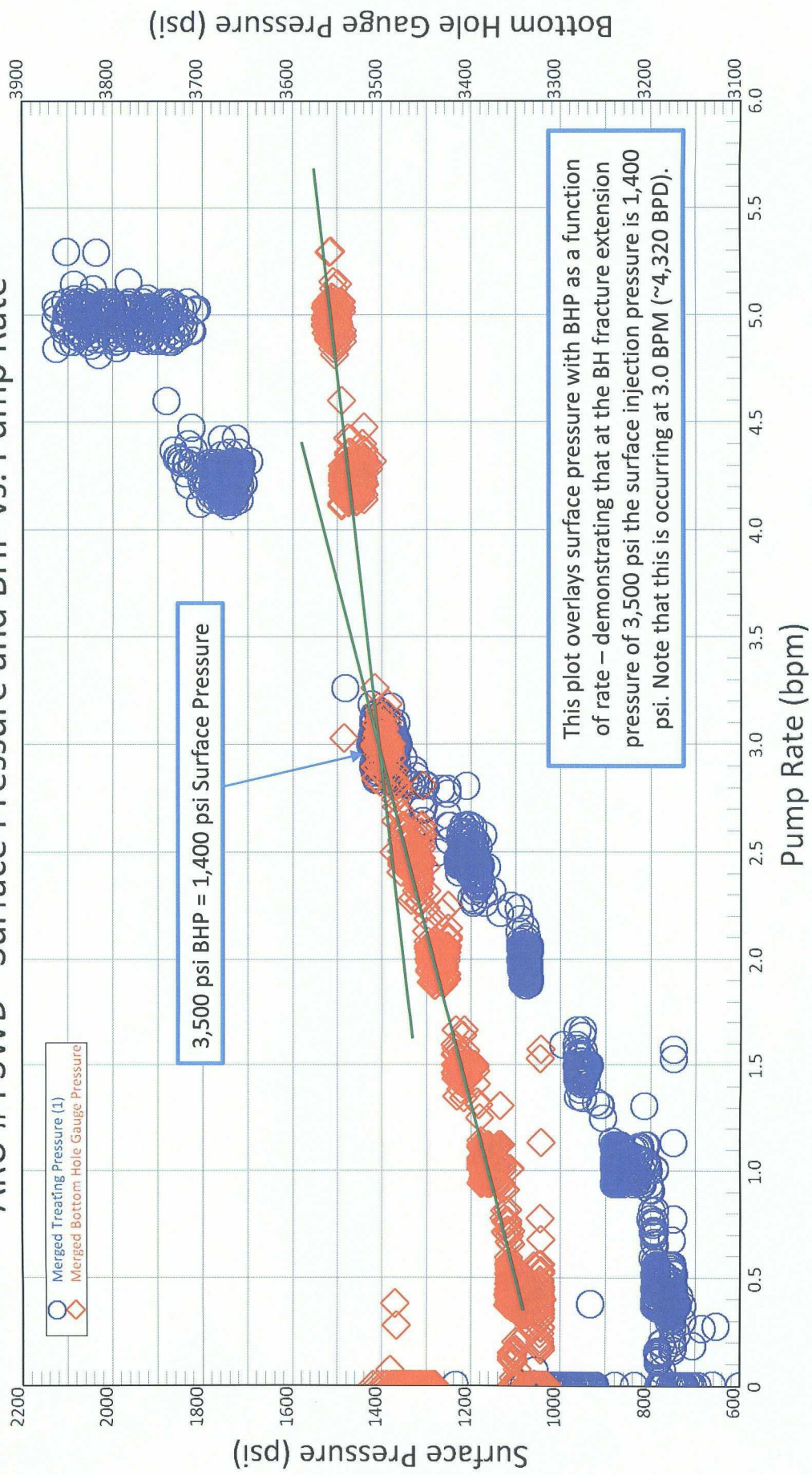
ARU #4 SWD - Step Rate Diagnostic



ARU #4 SWD - Step Rate Test



ARU #4 SWD - Surface Pressure and BHP vs. Pump Rate





NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON

Governor

Joanna Prukop

Cabinet Secretary

Mark E. Fesmire, P.E.

Director

Oil Conservation Division

ADMINISTRATIVE ORDER SWD-1049

APPLICATION OF BOLD ENERGY, LP FOR PRODUCED WATER DISPOSAL, LEA COUNTY, NEW MEXICO.

ADMINISTRATIVE ORDER OF THE OIL CONSERVATION DIVISION

Under the provisions of Rule 701(B), Bold Energy, LP made application to the New Mexico Oil Conservation Division for permission to utilize for produced water disposal its Antelope Ridge Unit Well No. 4 (API No. 30-025-21037) located 990 feet from the North line and 2310 feet from the East line of Section 4, Township 24 South, Range 34 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 is hereby authorized to utilize its Antelope Ridge Unit Well No. 4 (API No. 30-025-21037) located 990 feet from the North line and 2310 feet from the East line of Section 4, Township 24 South, Range 34 East, NMPM, Lea County, New Mexico, in such manner as to permit the injection of produced water for disposal purposes into the Bell Canyon and Cherry Canyon members of the Delaware Mountain Group through perforations from 5170 feet to 6300 feet and through plastic-lined tubing set in a packer located within 100 feet of the top of the injection interval.

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.

As preparation for injection, the following shall be done:

- (a) this well shall be plugged back to within 200 feet of the bottom of the injection interval;
- (b) cement shall be squeezed into the formation from 6500 feet and circulated to 5870 feet;
- (c) cement shall be squeezed from approximately 5685 to surface or as high as possible above the top injection interval at 5170 feet, but without perforating holes in the casing above 5170 feet; and
- (d) a new cement bond log shall be run and supplied to the engineering bureau of the Division in Santa Fe.

The operator shall not inject into this well until written confirmation is received from the engineering bureau in Santa Fe that the required wellbore cementing work is completed.

The intended injection interval shall be swab tested and a formation water analysis along with all swab-test results shall be supplied to the Division.

After installing injection tubing, 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 or an approved leak detection device in order to determine leakage in the casing, tubing, or packer.

The wellhead injection pressure on the well shall be limited to **no more than 1034 psi**. In addition, the injection well or system shall be equipped with a pressure limiting device in workable condition which shall, at all times, limit surface injection pressure to the maximum allowable pressure for this well.

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 injection formation. 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 any 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 is retained by the Division for the entry of such further orders as may be necessary for the prevention of waste and/or protection of correlative rights or upon failure of the operator to conduct operations (1) to protect fresh water or (2) consistent with the requirements in this order, whereupon the Division may, after notice and hearing, terminate the injection authority granted herein.

The operator shall provide written notice of the date of commencement of injection to the Hobbs district office of the Division.

The operator shall submit monthly reports of the disposal operations on Division Form C-115, 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 October 19, 2006.

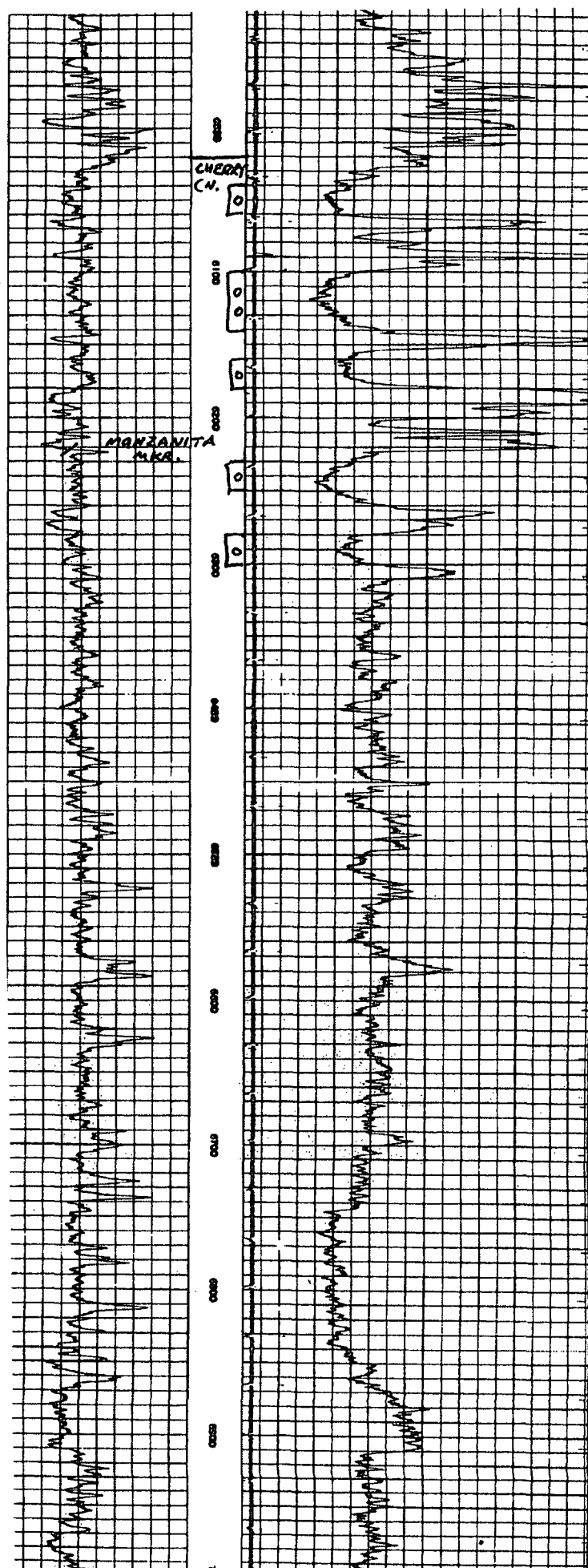
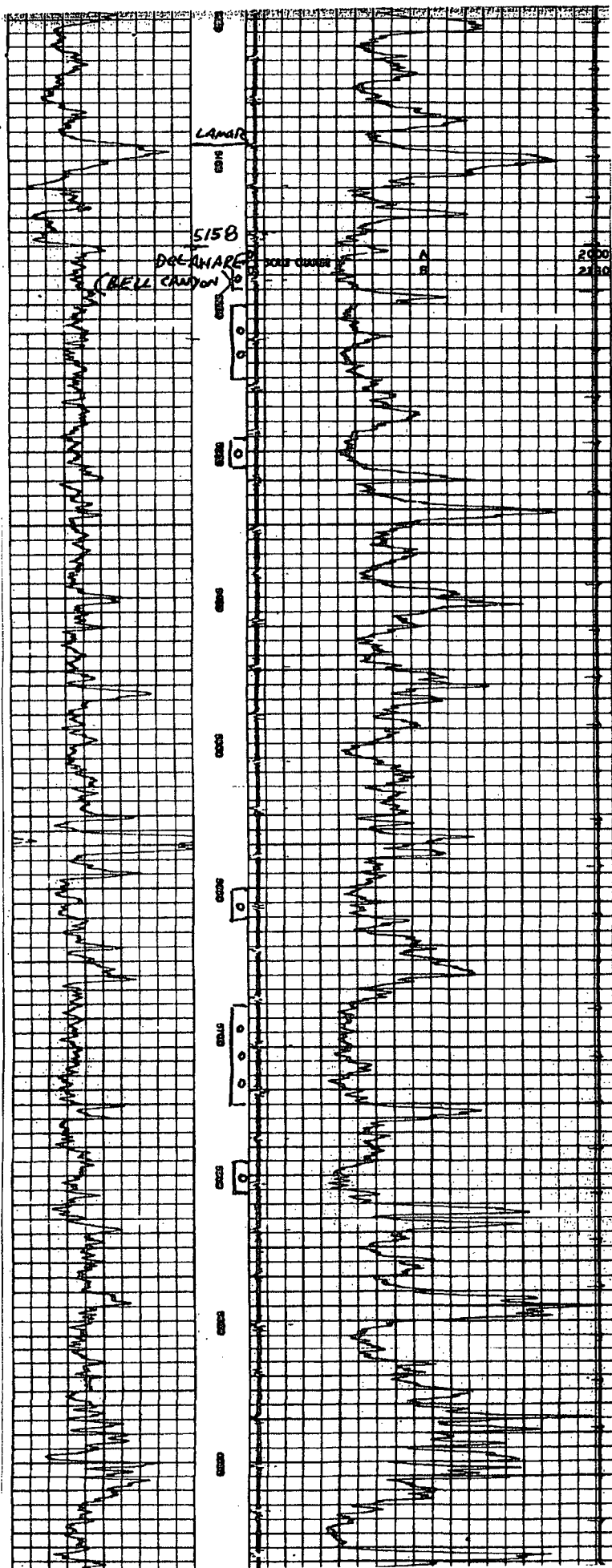


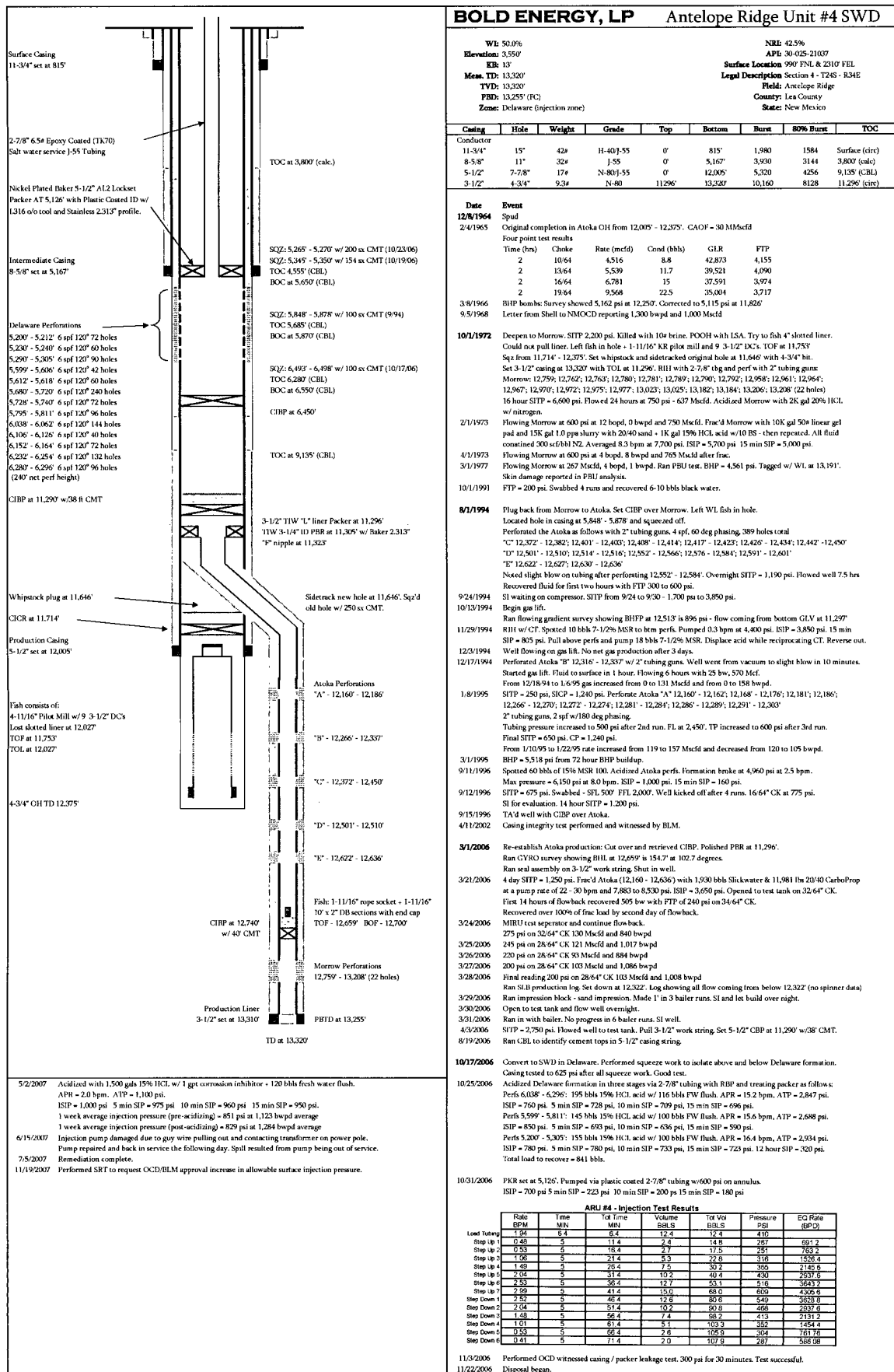
MARK E. FESMIRE, P.E.

Director

MEF/wvj

cc: Oil Conservation Division – Hobbs





UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: March 31, 2007

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.

SUBMIT IN TRIPLICATE- Other instructions on reverse side.

1. Type of Well <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other		5. Lease Serial No. NM 021422
2. Name of Operator BOLD ENERGY, LP		6. If Indian, Allottee or Tribe Name N/A
3a. Address 415 W. Wall, Suite 500 Midland, Texas 79701	3b. Phone No. (include area code) 432-686-1100	7. If Unit or CA/Agreement, Name and/or No. NM 68289D
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Unit B - 990' FNL & 2310' FEL, Sec 4 - T24S - R34E		8. Well Name and No. Antelope Ridge Unit #4
		9. API Well No. 30-025-21037
		10. Field and Pool, or Exploratory Area SWD; Bell Canyon - Cherry Canyon
		11. County or Parish, State Lea County, New Mexico

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


TYPE OF SUBMISSION	TYPE OF ACTION			
<input 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 Request Increase in Allowable Surface Injection Pressure
	<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 recompleat 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 recompleat 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.)

Accompanying this form are the results of a step-rate injection test performed on 11/19/07. The purpose of this test was to support a request for an increase in the maximum allowable surface injection pressure.

It has been determined that the fracture extension pressure at surface is 1,400 psi. Applying a safety factor of 50 psi, Bold Energy respectfully requests approval to increase the maximum allowable surface injection pressure to 1,350 psi.

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NOV 29 AM 9 41

14. I hereby certify that the foregoing is true and correct Name (Printed/Typed) Shannon L. Klier		Title Operations Engineering Manager
Signature 		Date 11/27/07

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by _____	Title _____	Date _____
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 _____	

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.

(Instructions on page 2)