

APPENDIX L

RESERVOIR TESTS

DCP Midstream Linam AGI #1

Evaluation of Lower Bone Springs Injection and Falloff Test

January 4, 2008

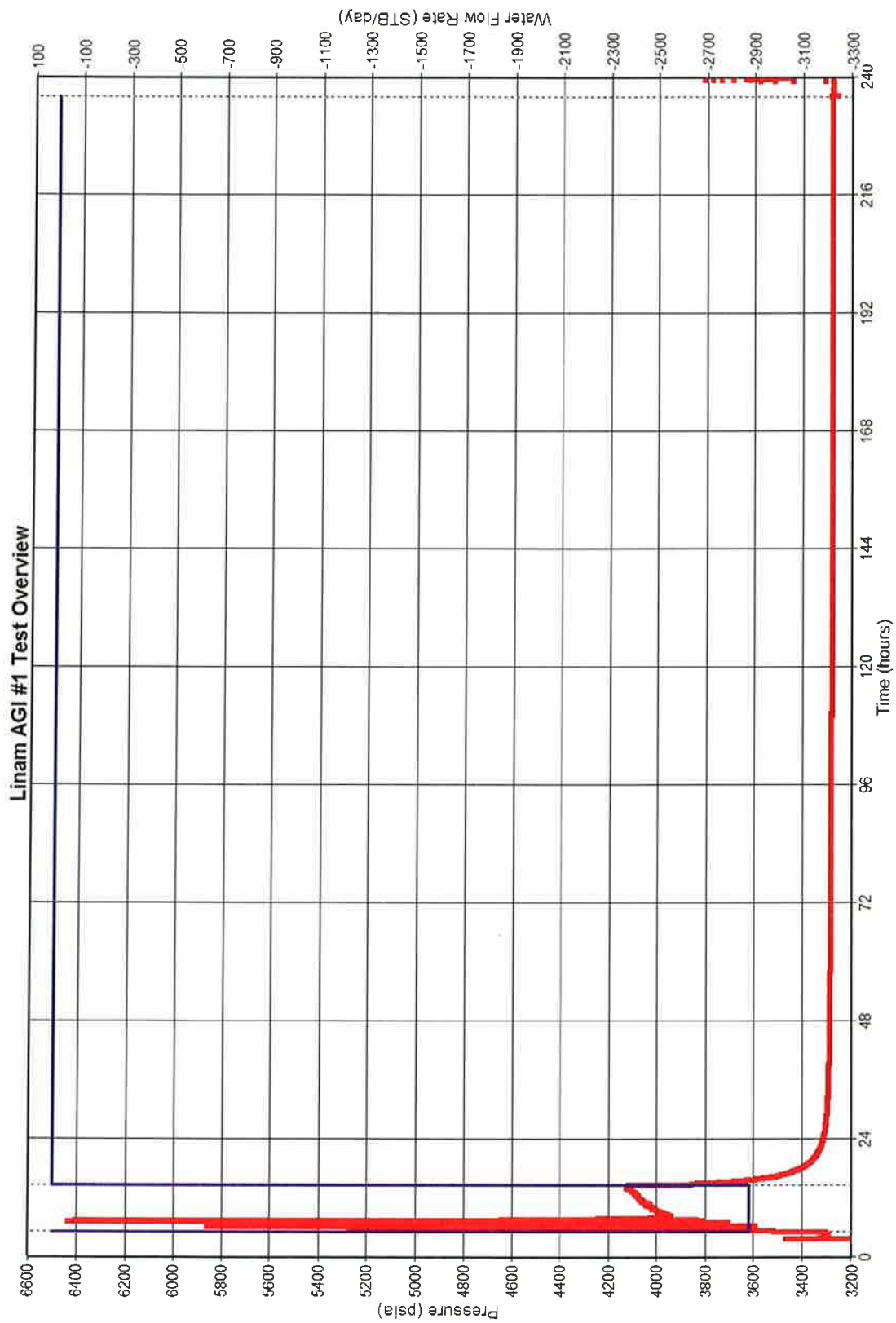
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Lower Bone Springs Injection Test

- 9.5 hour injection at 2 BPM (2880 BPD) followed by 221 hour falloff
- Test mechanically successful
- Flow capacity 2100 to 2220 md-ft
- Still a small mechanical skin (+1 to +2.2)
- Initial reservoir pressure 3,271 psia @ 8660 ft (3,376 psia at 8,898 mid-perf)

Lower Bone Springs Injection Test

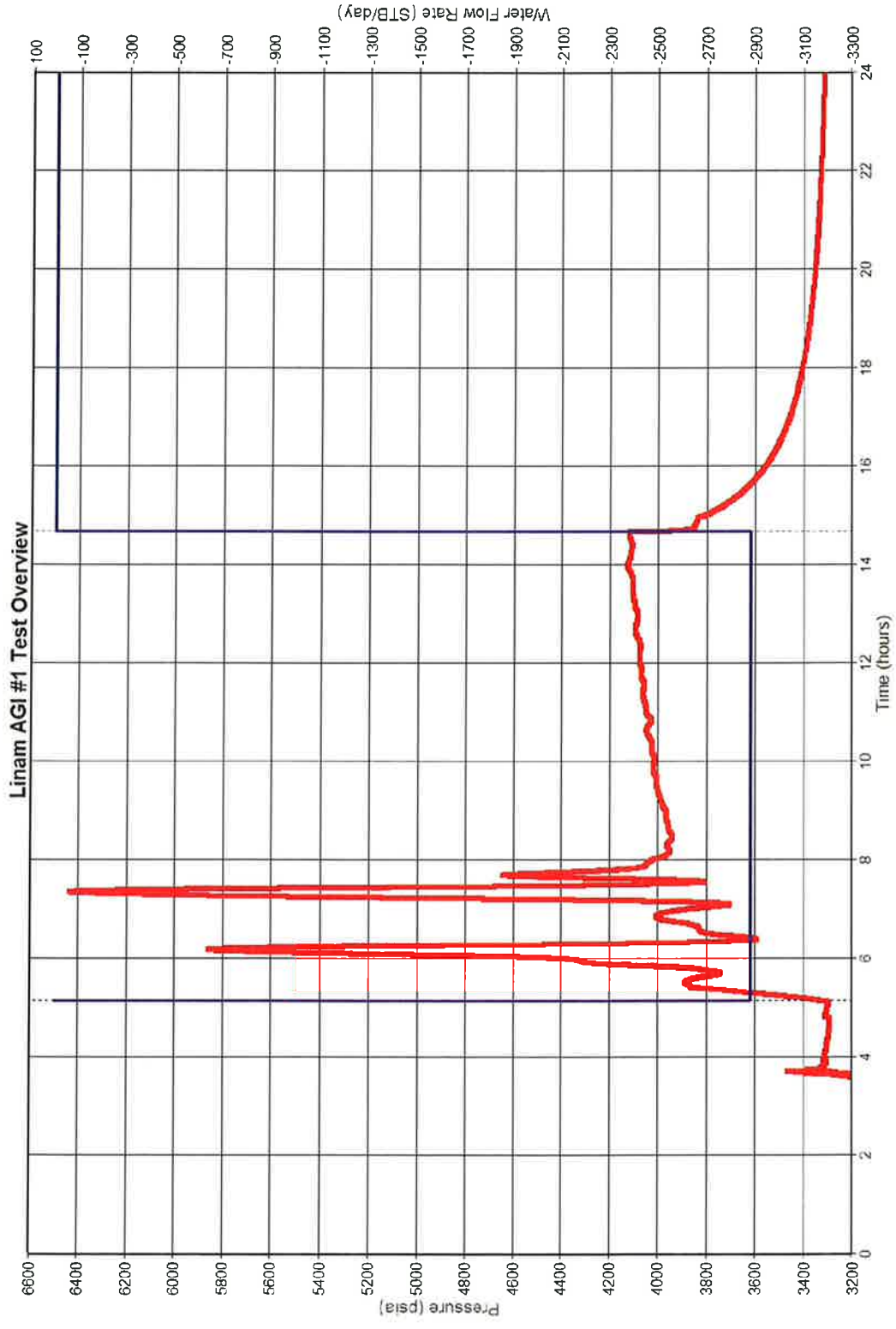
- Two barriers identified during buildup
- Distance dependent on permeability
- 2220 md-ft, $h = 111$ ft $k = 20$ md
 - Assumes all net pay open
 - Barriers at 900 and 1220 from well (intersecting at 90 degrees)
- 2100 md-ft $h = 28$ ft $k = 75$ md
 - Assumes interval 8945-75 open
 - Barriers at 1800 and 2000 ft (intersecting at 90 degrees)
- Need injection profile to determine how much interval is taking fluid



January 4, 2008

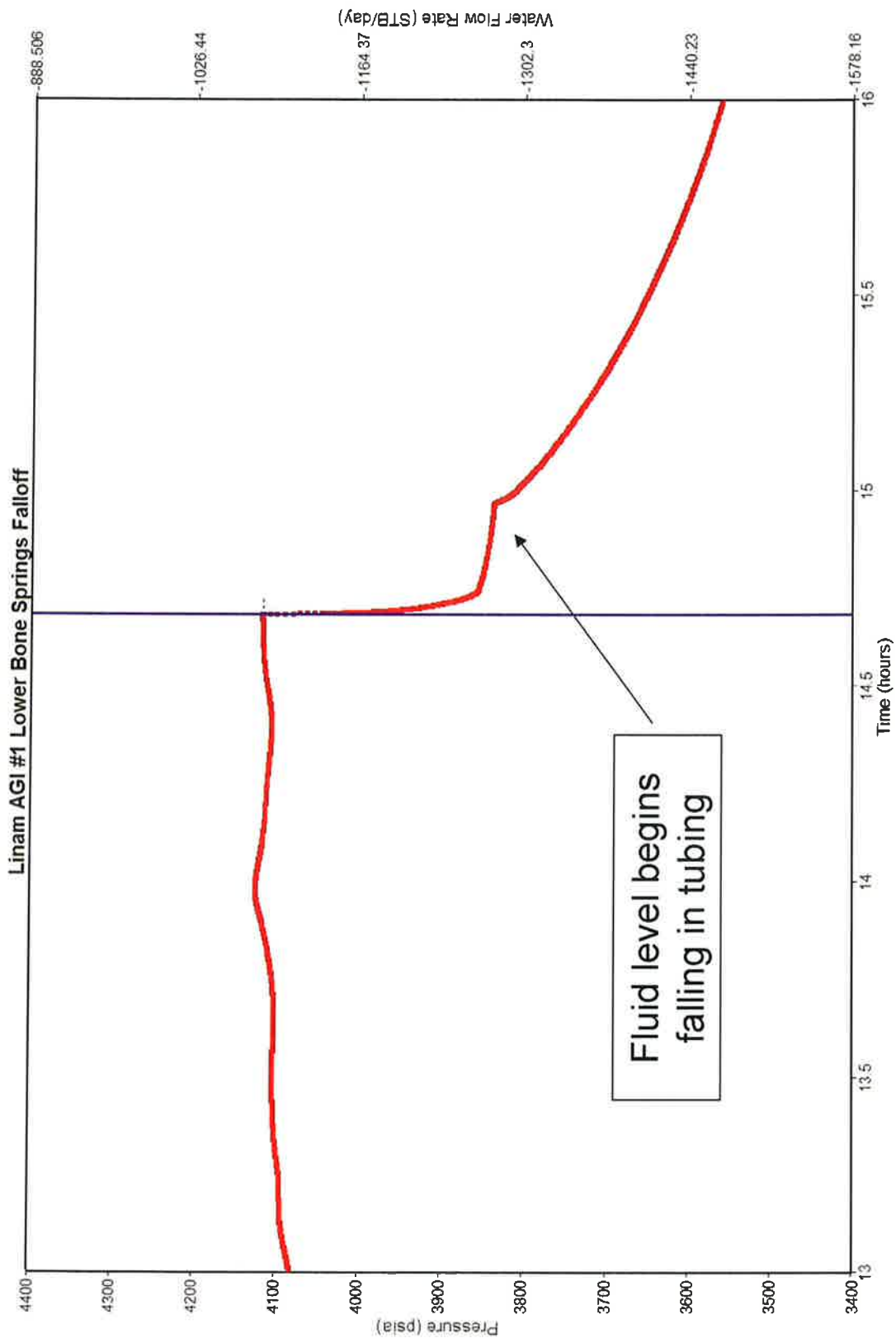
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Expanded Plot of First 24 Hours



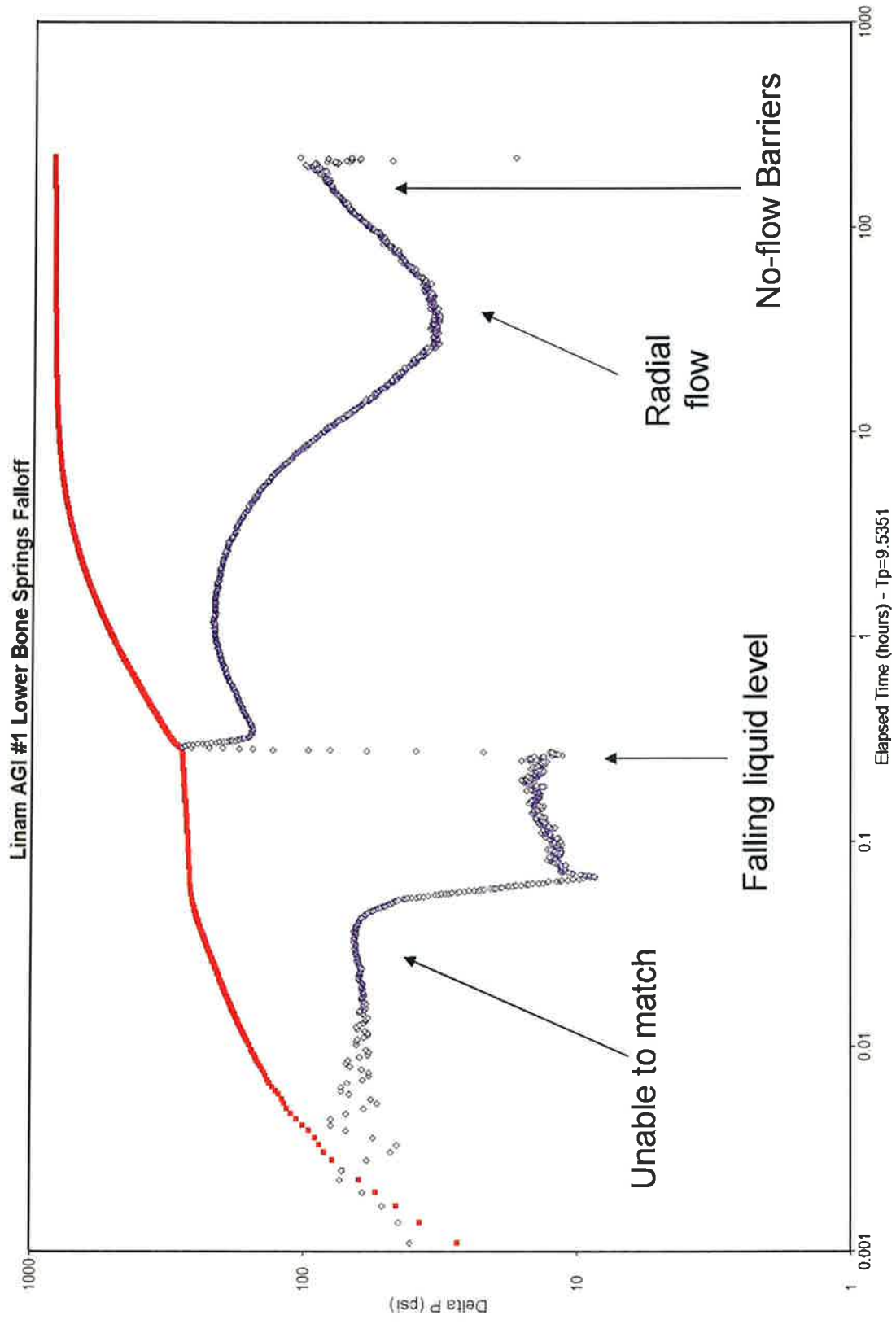
January 4, 2008

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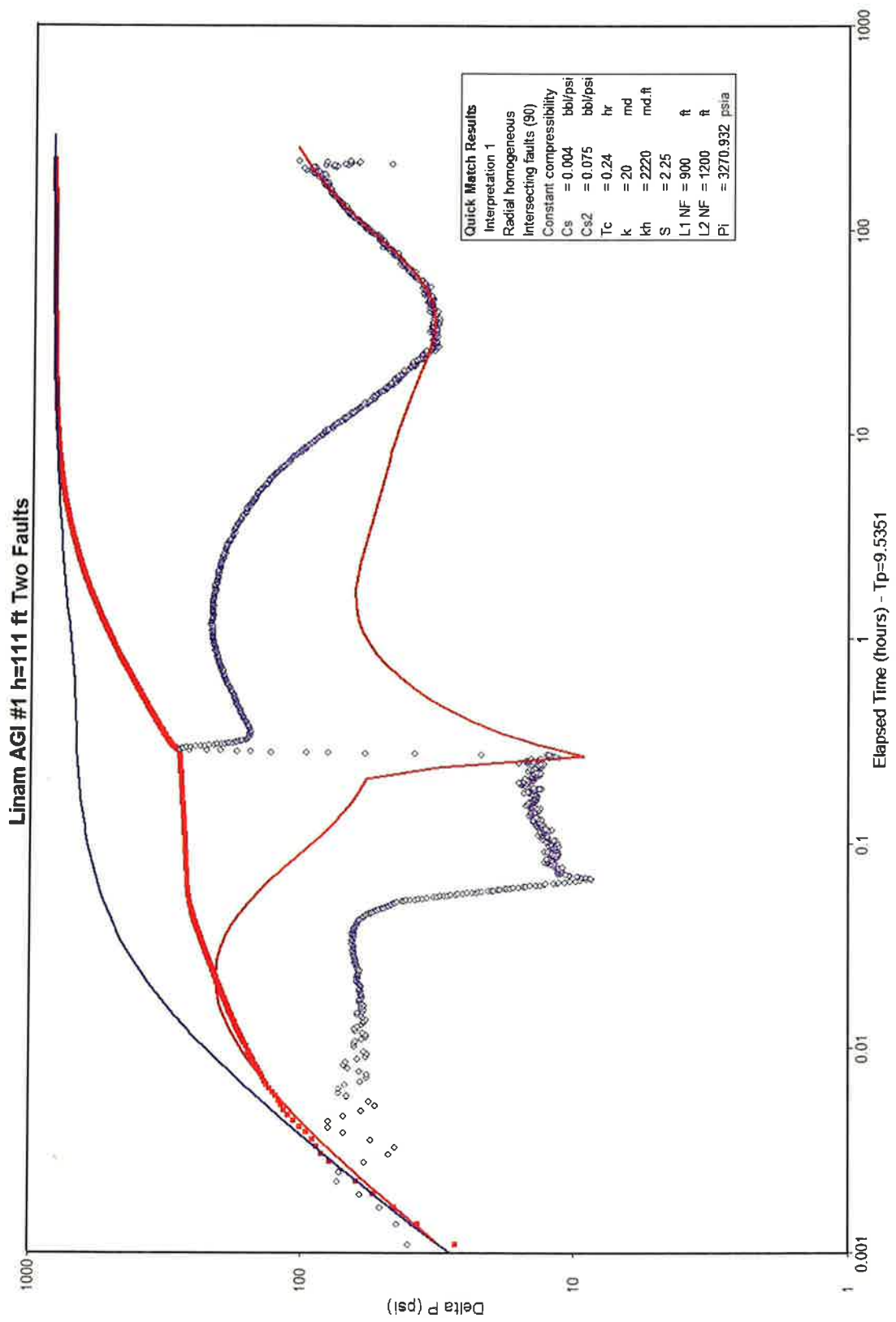
January 4, 2008

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January 4, 2008

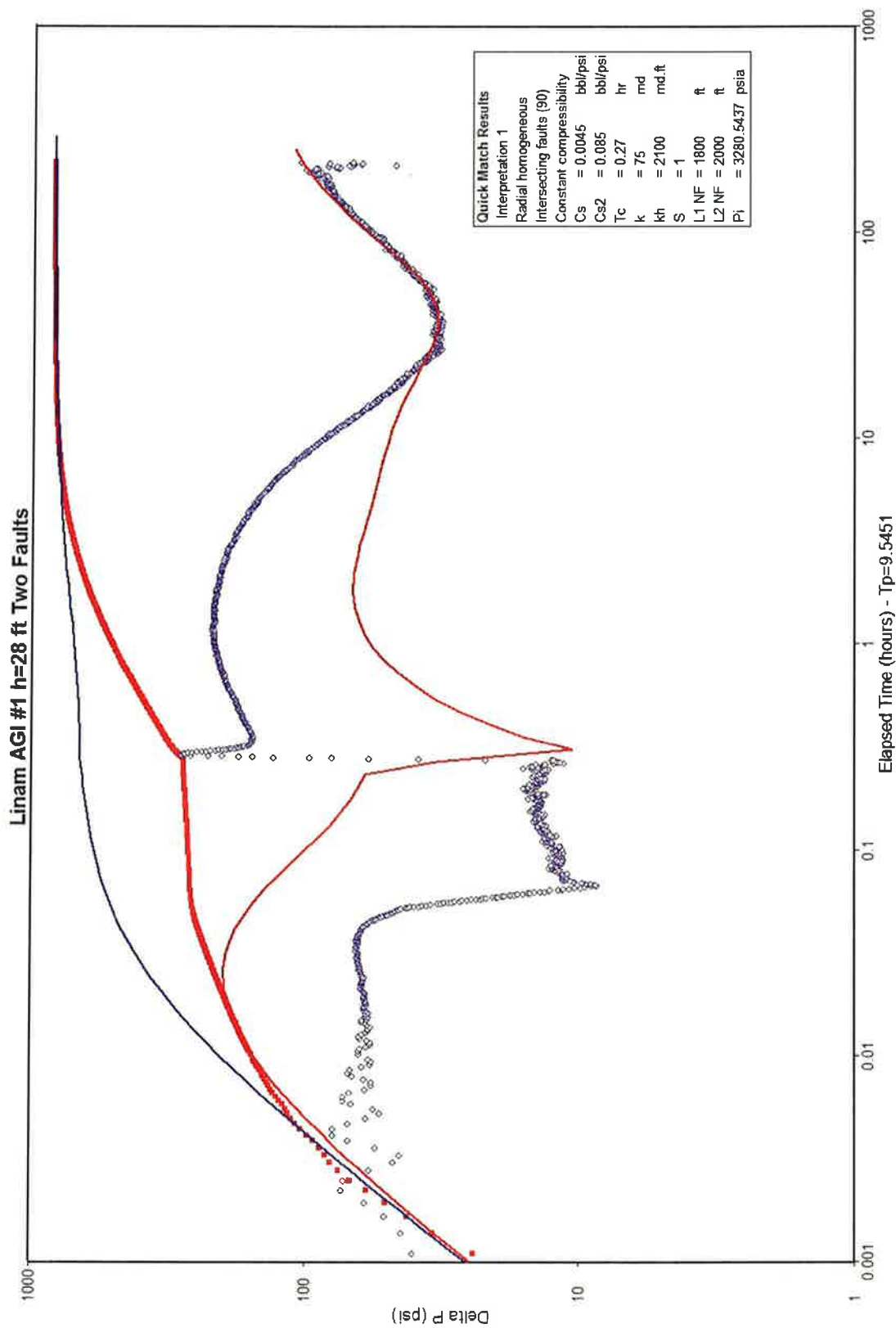
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Elapsed Time (hours) - Tp=9.5351

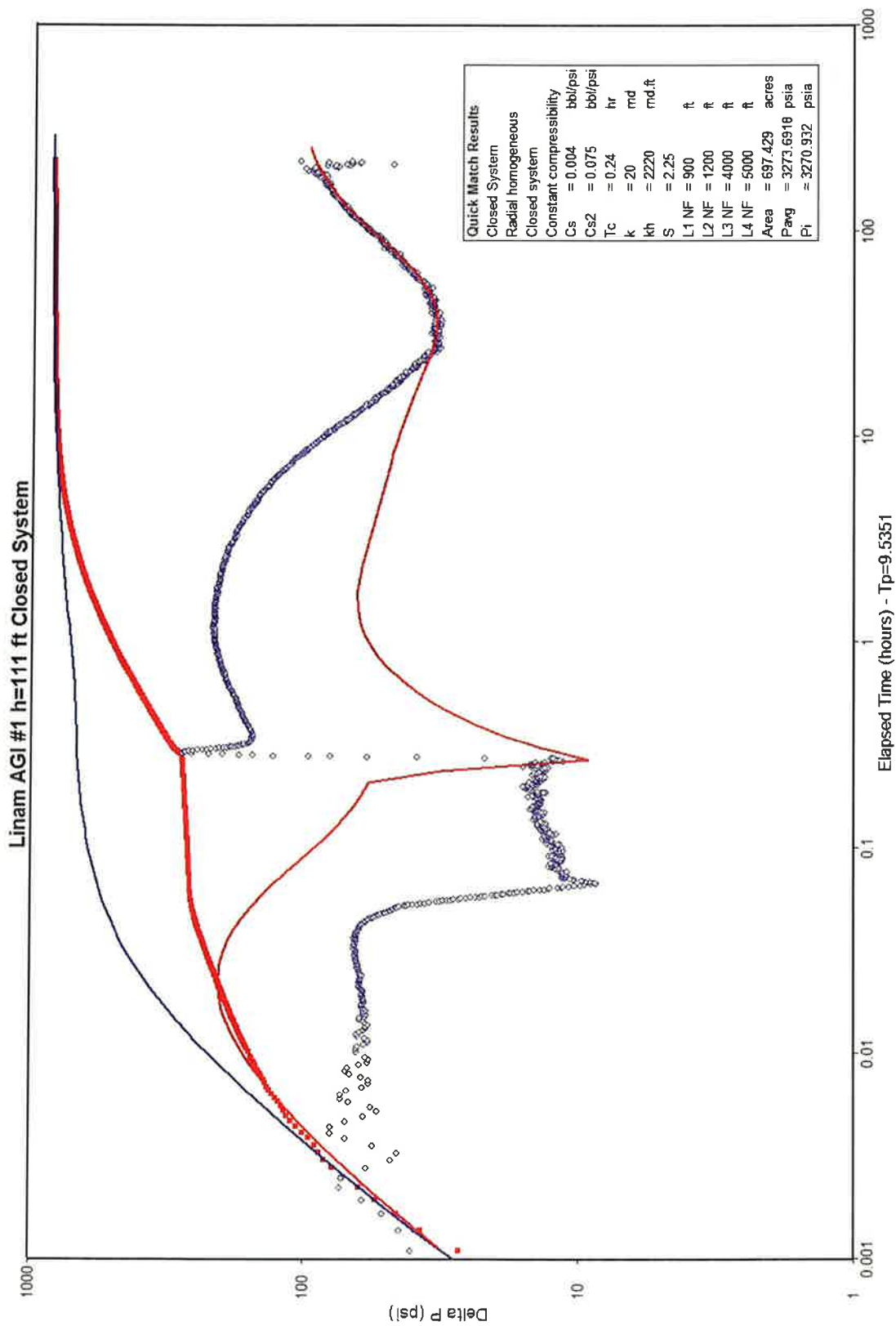


January 4, 2008

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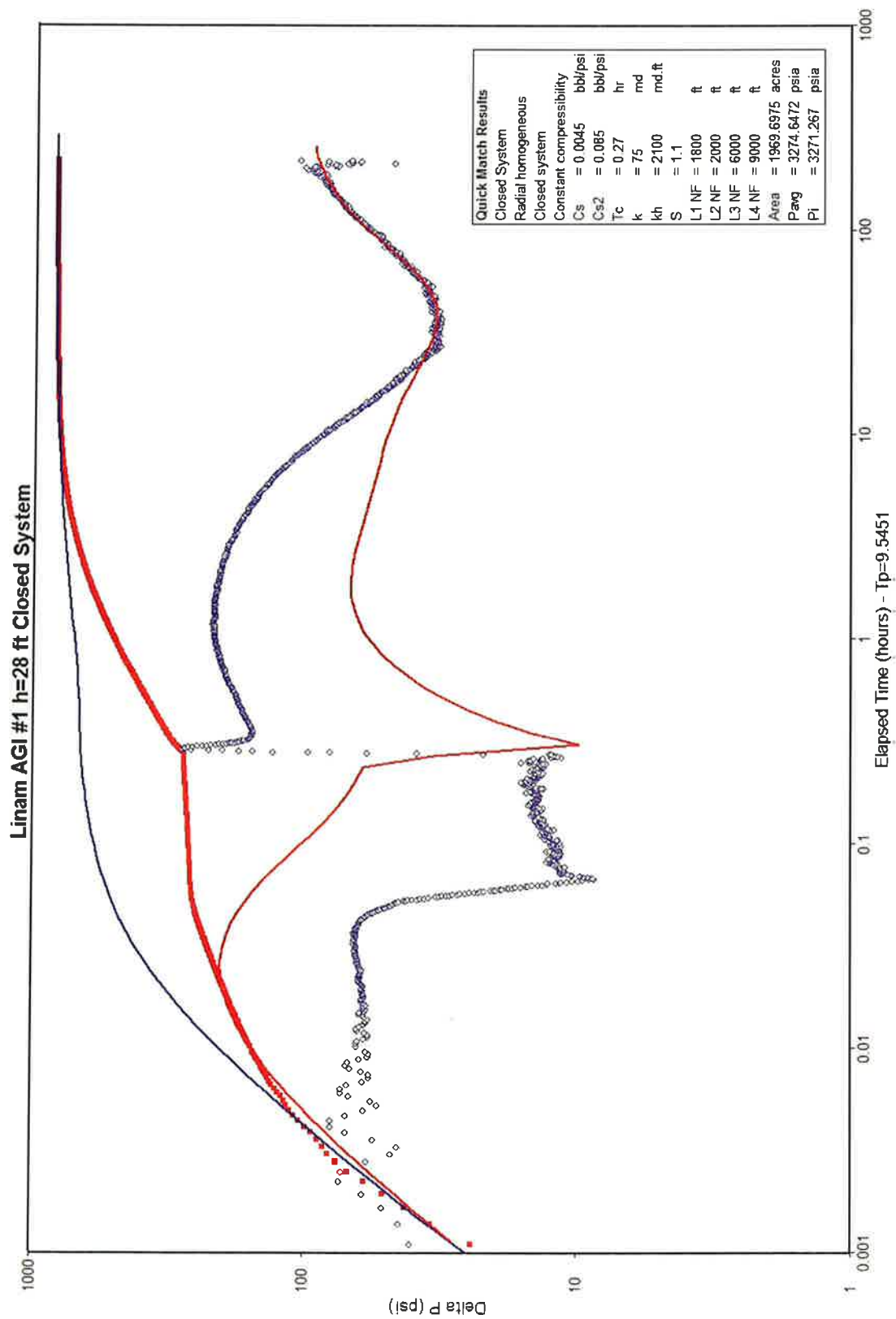
Estimating Distance to Remaining Boundaries

- Set System to closed rectangle
- Set distances to 3rd and 4th boundaries
- Iterate until derivative shape remains unchanged
- Sets minimum distances



January 4, 2008

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January 4, 2008

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Stabilized Injectivity

- Assumptions
 - Gas permeability at $Swir = 0.15$ *Brine Perm
 - Gas Viscosity 0.076 cp, z factor 0.5
 - Mechanical skin reduced to zero
- BHP at 5000 Mscfd injection is 3,465 psi assuming current reservoir pressure (3,376 psi)

Long Term Injection Performance

- Minimum pore volumes determined from test range from 47 to 55 MM bbl.
- Estimate 14.2 MM bbl of injection over 20 years
 - 5000 Mcfd * 0.39 bbl/Mscf
- Need 235 MM bbl to limit reservoir pressure increase to 1000 psi over 20 yrs
- Will require remaining barriers to be 10,000 – 25,000 feet from the well depending on thickness of interval taking injection
- System size will ultimately be found only by long-term injection performance

Recommendations

- Run injection profile following 2 BPM injection test to identify open intervals
- Obtain geologic opinion regarding possible distances to remaining limits
- Temporarily abandon well without testing Upper Bone Springs

DCP Midstream Linam AGI #2 (3002542139) Step Rate Test

Conducted on January 15, 2015

PB Energy and Geolex, Inc. conducted a step rate test (SRT) on Linam AGI #2 beginning at 13:26 on January 15, 2015. Bill Sonnamaker with the NMOCD arrived an hour before the test was started to witness the test, and he remained on location until the 3rd step. The testing procedure was provided in the field to Mr. Sonnamaker and he was satisfied with the testing procedure.

The test design pumping rates were 1.0, 2.0, 3.0, 3.5, 4.0, 4.5 and 5.0 barrels/minute. The total injection fluid of this test was 747 barrels. The test was started at 1.0 bpm but the well remained on vacuum for 9 minutes when it was decided to increase the pumping rate to load the tubing with fluid allowing the tubing to pressure up. Then the rate was backed off until a low positive pressure (not zero) was established. This changed the 1st step rate from 1.0 bpm to 1.2 bpm to prevent the well from going on vacuum and required approximately an hour to stabilize at the low rate. The raw data are attached in Appendix A, and Figure 1 summarizes the data.

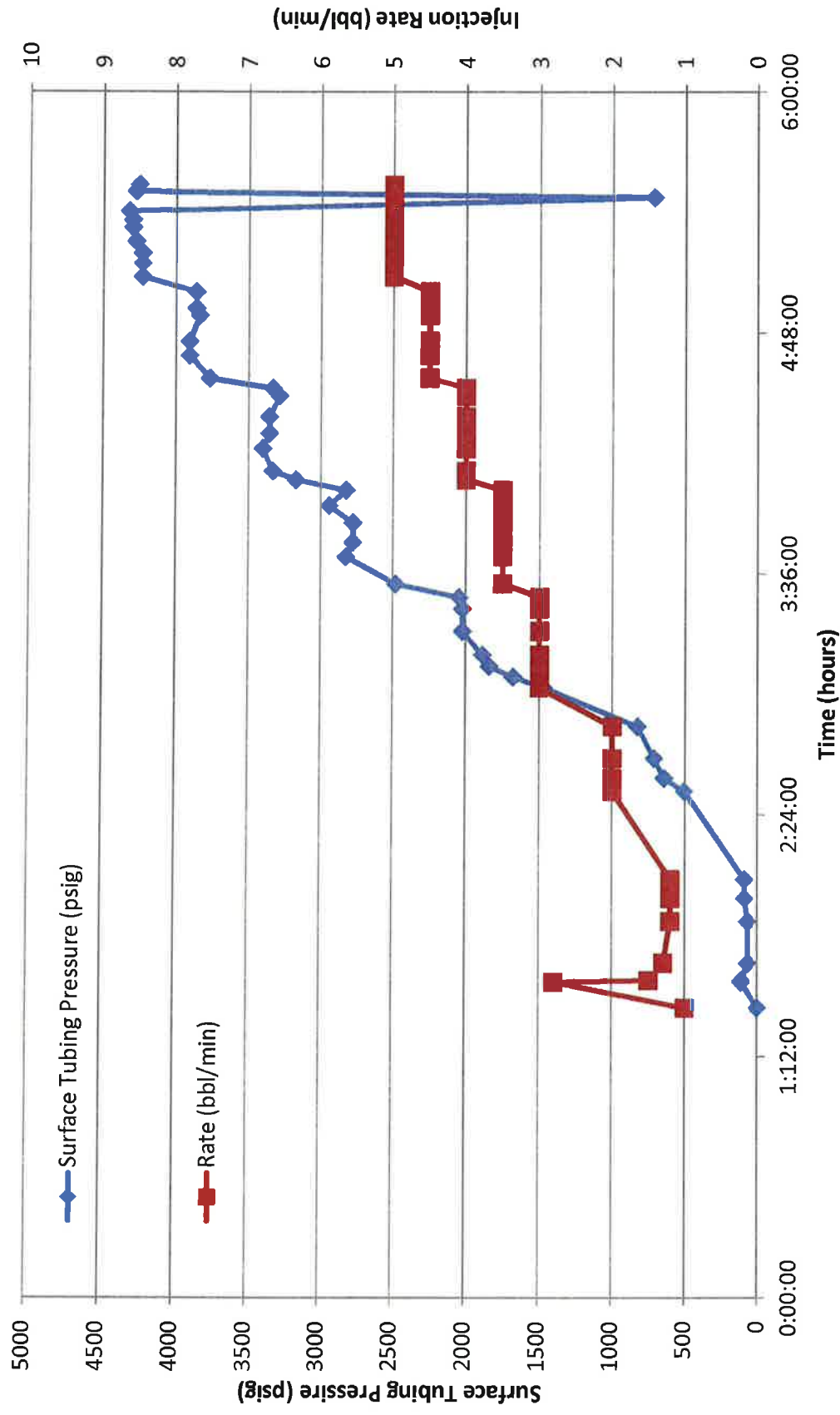
The following table summarizes rate, volume, maximum step pressure and duration for each step.

Step #	Rate (bbls/min)	Volume (bbls)	Max Step Pressure (psi)	Duration (min)	Cummulative Volume (bbls)
1	1.2	81	92	65	81
2	2.0	63	827	31	144
3	3.0	92	2044	31	236
4	3.5	108	3014	31	344
5	4.0	122	3400	30	466
6	4.5	135	3905	30	601
7	5.0	164	4319	30	747

A maximum surface pressure was recorded at 4,319 psig at an injection rate of 5 barrels per minute, and the well head pressure fell to zero within 2 minutes after injection ceased. The calculated formation fracture pressure is 3,318, as shown in Figure 2. This pressure is well above the well's MAOP of 2,644 psig approved in NMOCD Order R-12546-K.

This step rate test verifies that the Linam AGI #2 can be safely operated at the approved MAOP.

Figure 1: Summary of Step Rate Test, Linam AGI #2, January 15, 2015



DCP AGI #2
STEP RATE 01/15/2015

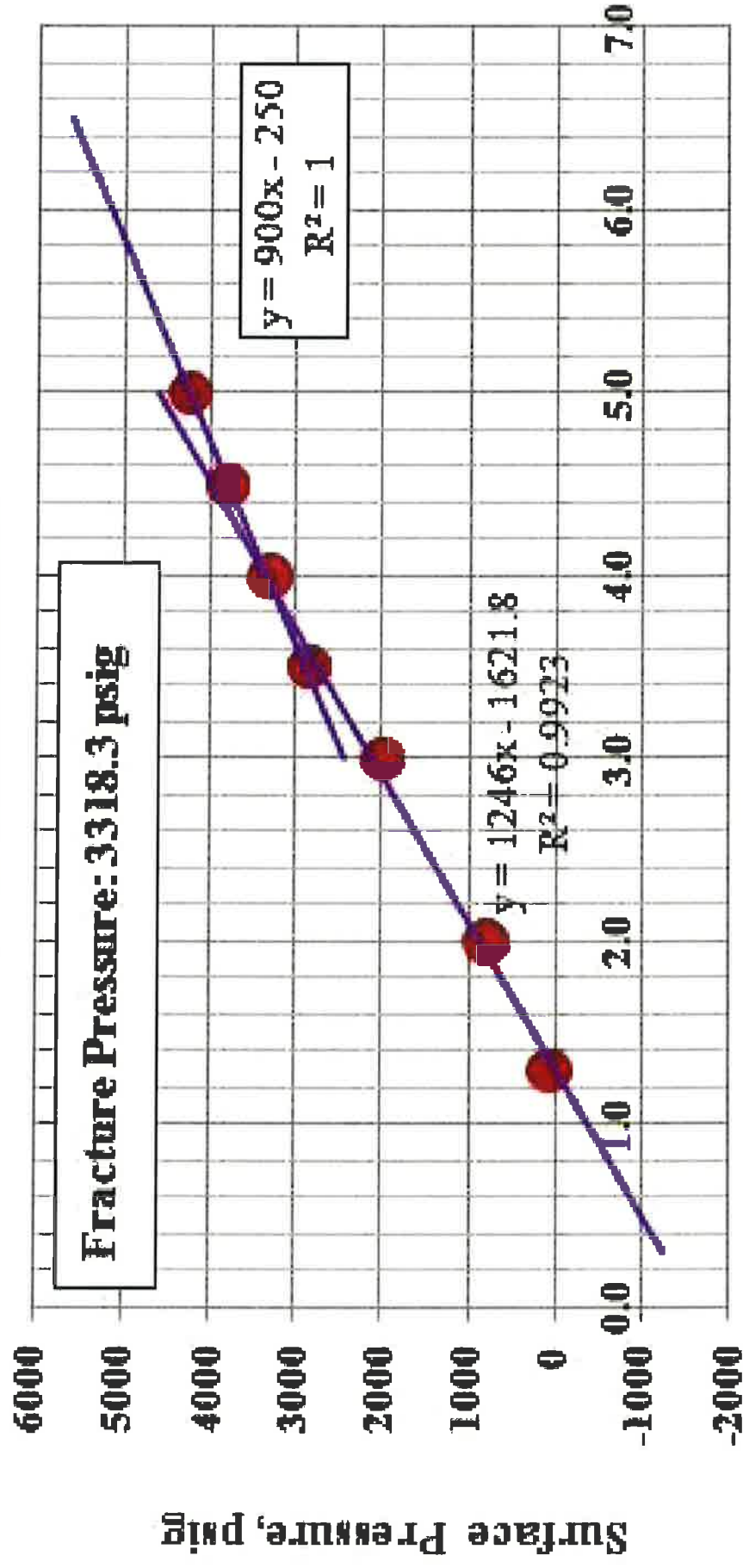


Figure 2: Fracture Pressure Curve

CPS Treatment Report

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Customer: PB ENERGY
Well Name & No.: LINAM RANCH AGI # 2
County: LEA
State: NM

ESN#: BBJ9SRNUE
Formation: WOLFCAMP
Date: January 15, 2015
Well type: Injection, New / Stim.

Customer Information

Address: 16285 Park Ten Place Suite 400
City/State: Houston Tx.
Zip Code: 77084
Customer Representative: MICHAEL FOURIER



Remarks

1470 GALS 15% HCL PUMP AWAY AND STEP RATE STAGE 1
WATCH EACH OTHERS BACK BE SAFE ALWAYS
ACID TITRATED TO 15% 4:10 AM 1-15-2015

Arrive on Location: 6:30 AM
Depart Location: 10:30 AM
Total Hours: 4.00

	Depth	O.D	Weight	I.D	Volume	Bbls/linear ft.
Tubing 1 length ft.	8,709	2 7/8	6.5	2.441	50.41 BBLS	0.00579
Tubing 2 length ft.					0.00 BBLS	0.00000
Casing 1 length ft.	8,765	7	26.00	6.276	2.14 BBLS	0.03826
Casing 2 length ft.					0.00 BBLS	0.00000
Open Hole length ft.		N/A	N/A		0.00 BBLS	0.00000
Combined Depth ft.	8,765				BBLS	0.03023

	Depth	Vol.				
Top Perf/Open Hole:	8,765	52.55	Maximum Pressure:	5077	ISIP:	4020
Bottom Perf/Open Hole:	9,006	61.77	Average Pressure:	4329	3 min:	919
Number of Perfs:	0		Maximum Rate:	5.1	10 min:	
Perf Size:	0.31	in.	Average Rate:	3.5	15 min:	
Perfor Depth:	8,709	ft.	Fluid to Recover:	866	Proppant Total:	0

Time	STP	CASING	Rate	STAGE	Comments
9:18:01 AM	0				SAFETY MEETING
9:26:21 AM	8400	526.0		0.0	TEST LINES
9:33:57 AM	0	526.0	2.0	0.0	ON BRINE
9:35:42 AM	3629	732.0	2.0	2.9	LOADED UP
9:37:57 AM	3675	686.0	2.1	9.6	PSI CHECK
9:38:57 AM	3583	640.0	2.1	10.6	ON ACID
9:41:45 AM	3721	549.0	2.1	17.0	PSI CHECK
9:55:30 AM	3798	183.0	2.0	45.6	ON FLUSH
9:58:56 AM	4319	114.0	3.4	52.0	PSI CHECK
10:02:54 AM	5031	0.0	5.1	68.0	PSI CHECK
10:04:42 AM	5077	0.0	5.0	68.0	ACID HITTING FORMATION
10:07:06 AM	5008	0.0	5.0	90.0	PSI CHECK
10:08:02 AM	4962	0.0	5.0	93.0	PSI CHECK
10:08:44 AM	4824	0.0	5.1	98.0	PSI CHECK
10:09:55 AM	4456	0.0	5.1	103.0	PSI CHECK
10:11:11 AM	4020	0.0	0.0	107.8	SHUT DOWN
10:16:10 AM	919	0.0	0.0	107.8	5 MIN SHUT IN
10:21:11 AM	303	0.0	0.0	107.8	10 MIN SHUT IN
10:23:08 AM	0	0.0	0.0	107.8	ON VAC
1:08:28 PM	8132	23.0	0.0	0.0	TEST LINES
1:26:30 PM	0	549.0	1.0	0.0	ON WATER START STEP RATE TEST
1:34:13 PM	115	526.0	2.8	9.7	LOADED UP
1:34:40 PM	115	480.0	1.5	11.0	RATE LINED OUT
1:39:49 PM	69	366.0	1.3	19.5	SLOW RATE
1:52:16 PM	69	137.0	1.2	35.0	PSI CHECK
1:59:09 PM	92	46.0	1.2	43.0	PSI CHECK
2:04:48 PM	92	23.0	1.2	50.0	PSI CHECK MAX PSI 92 PSI
2:31:09 PM	505	0.0	2.0	81.0	INCREASE RATE
2:34:59 PM	643	0.0	2.0	90.0	PSI CHECK
2:40:56 PM	712	0.0	2.0	102.0	PSI CHECK
2:50:27 PM	827	0.0	2.0	120.0	PSI CHECK MAX PSI 827 PSI
3:02:04 PM	1470	0.0	3.0	144.0	INCREASE RATE

Treatment Report Continuation

ESG #
BBJS9SRNUE

Page 2

Time	STP		Rate	Stage	Total	Comments
3:05:19 PM	1677	0	3		154.0	PSI CHECK
3:08:32 PM	1838	0	3		164.0	PSI CHECK
3:11:54 PM	1884	0	3		174.0	PSI CHECK
3:18:56 PM	2021	0	3		195.0	PSI CHECK
3:25:36 PM	2021	0	3		215.0	PSI CHECK
3:29:04 PM	2044	0	3		225.0	PSI CHECK MAX PSI 2044 PSI
3:33:00 PM	2481	0	3.5		236.0	INCREASE RATE
3:41:07 PM	2825	0	3.5		265.0	PSI CHECK
3:45:28 PM	2779	0	3.5		280.0	PSI CHECK
3:51:17 PM	2779	0	3.5		300.0	PSI CHECK
3:56:28 PM	2942	0	3.5		318.0	PSI CHECK
4:01:00 PM	2825	0	3.5		330.0	PSI CHECK MAX PSI 3014 PSI
4:04:08 PM	3170	0	4		344.0	INCREASE RATE
4:06:43 PM	3331	0	4		355.0	PSI CHECK
4:13:25 PM	3400	0	4		380.0	PSI CHECK
4:18:00 PM	3354	0	4		400.0	PSI CHECK
4:22:57 PM	3354	0	4		420.0	PSI CHECK
4:29:10 PM	3285	0	4		445.0	PSI CHECK
4:31:23 PM	3331	0	4		454.0	PSI CHECK MAX PSI 3400 PSI
4:34:25 PM	3767	0	4.5		466.0	INCREASE RATE
4:41:11 PM	3905	0	4.5		496.0	PSI CHECK
4:45:21 PM	3905	0	4.5		515.0	PSI CHECK
4:53:06 PM	3836	0	4.5		550.0	PSI CHECK
4:55:17 PM	3859	0	4.5		560.0	PSI CHECK
5:00:12 PM	3859	0	4.5		583.0	PSI CHECK MAX PSI 3905 PSI
5:04:39 PM	4227	0	5		583.0	INCREASE RATE
5:08:41 PM	4227	0	5		622.0	PSI CHECK
5:11:39 PM	4227	0	5		638.0	PSI CHECK
5:15:12 PM	4273	0	5		655.0	PSI CHECK
5:19:20 PM	4296	0	5		675.0	PSI CHECK
5:21:38 PM	4296	0	5		690.0	PSI CHECK
5:24:14 PM	4319	0	5		700.0	PSI CHECK
5:28:25 PM	720	0	5		715.0	PSI CHECK
5:30:11 PM	4273	0	5		730.0	PSI CHECK
5:32:10 PM	4250	0	5		740.0	PSI CHECK
5:33:39 PM	4227	0	5		747.0	PSI CHECK
5:36:57 PM	3700	0	0		747.0	SHUT DOWN
5:38:24 PM	0	0	0		747.0	VAC
		0	0		747.0	10 MIN SHUT IN