

12/09/2014 DATE IN	SUSPENSE	PRG ENGINEER	12/11/2014 LOGGED IN	IPI TYPE	PM/4315 40621 APP NO.
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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] 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 \_\_\_\_\_

#### [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

#### [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.

Tyler Woodruff  
Print or Type Name

Signature

Senior Landman  
Title

12/1/14  
Date

twoodruff@alamoresources.com  
e-mail Address

IPI  
- Alamo Permian Resources  
274841

well  
- West Artesia Grayburg  
Unit #4  
30-015-02648

2014 DEC - 9 P 3: 02  
RECEIVED OGD

Pool  
- Artesia Queen-  
Grayburg - SAN Andres  
3230



December 1, 2014

Energy, Minerals and Natural Resources Department  
Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

Attention: Ms. Jami Bailey, CPG  
Division Director

Re: Injection Pressure Increase Application  
Alamo Permian Resources, LLC  
West Artesia Grayburg Unit Well No. 4  
Pool: Artesia-Queen-Grayburg-San Andres Pool (3230)  
Eddy County, New Mexico

Dear Ms. Bailey,

Alamo Permian Resources, LLC ("Alamo"; OGRID No. 274841), as current operator of the West Artesia Grayburg Unit Waterflood Project, located in portions of Sections 7, 8, & 17, Township 18 South, Range 28 East, NMPM, Eddy County, New Mexico, hereby requests administrative approval to increase the surface injection pressure for the West Artesia Grayburg Unit Well No. 4, API # 30-015-02648 ("WAGU Well No. 4").

The WAGU Well No. 4 was approved for injection under Ordering Paragraph (1) of Division Order No. R-3357-C dated March 17, 2011. Pursuant to Ordering Paragraph (12) of Division Order No. R-3357-C, Alamo was approved a maximum surface injection pressure of 423 psi for the abovementioned well.

On November 11, 2014, Alamo conducted a step rate injection test on the WAGU Well No. 4. The performed step rate test indicates a surface fracture pressure was not reached at a surface pressure maximum of 1000 psi for the abovementioned well. Alamo was unable to continue the test to a higher rate due to a mechanical issue with the pump truck. Attached for your use and review is the Cardinal Surveys Company report on the step rate test performed on the WAGU Well No. 4.

Based on the results of the WAGU Well No. 4 step rate test and the results from the West Artesia Grayburg Unit Well No. 12 step rate test, which also did not reach a surface fracture point at 1705 psi and is in close proximity to the WAGU Well No. 4, Alamo, hereby requests authority to increase the maximum surface injection pressure to 1400 psi for the WAGU Well No. 4. The WAGU Well No. 4 will not take a sufficient volume of fluid at the current pressure limit and an approval of the proposed pressure increase will allow Alamo to effectively and efficiently conduct secondary recovery operations within the West Artesia Grayburg Unit Waterflood Project, thereby increasing the recovery of hydrocarbons from the Artesia-Queen-Grayburg-San Andres Pool (3230).

Should you have any questions or need any additional data, please do not hesitate to contact me.

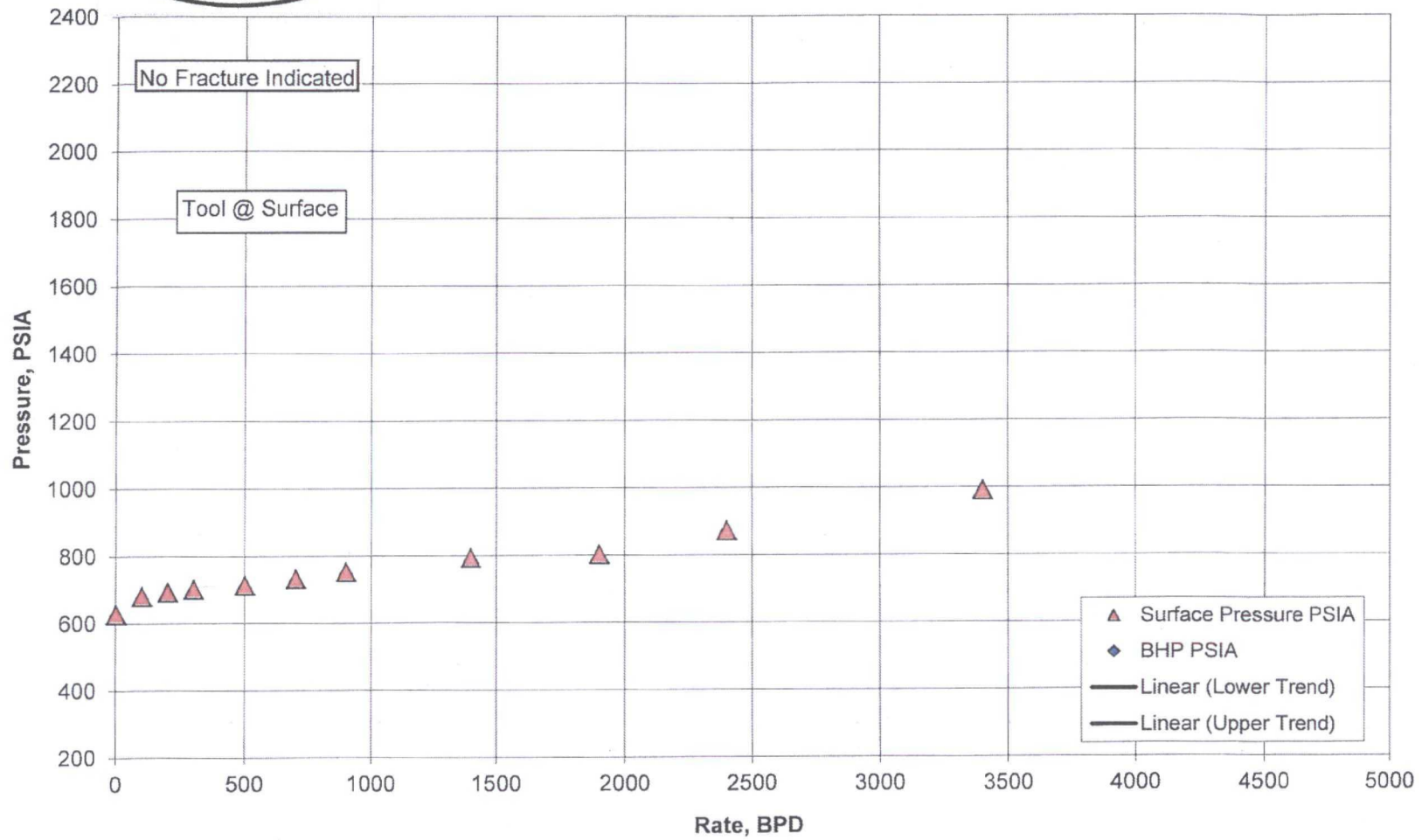
Sincerely,

Tyler Woodruff  
Senior Landman

CC: Randy Dade, OCD District II Supervisor

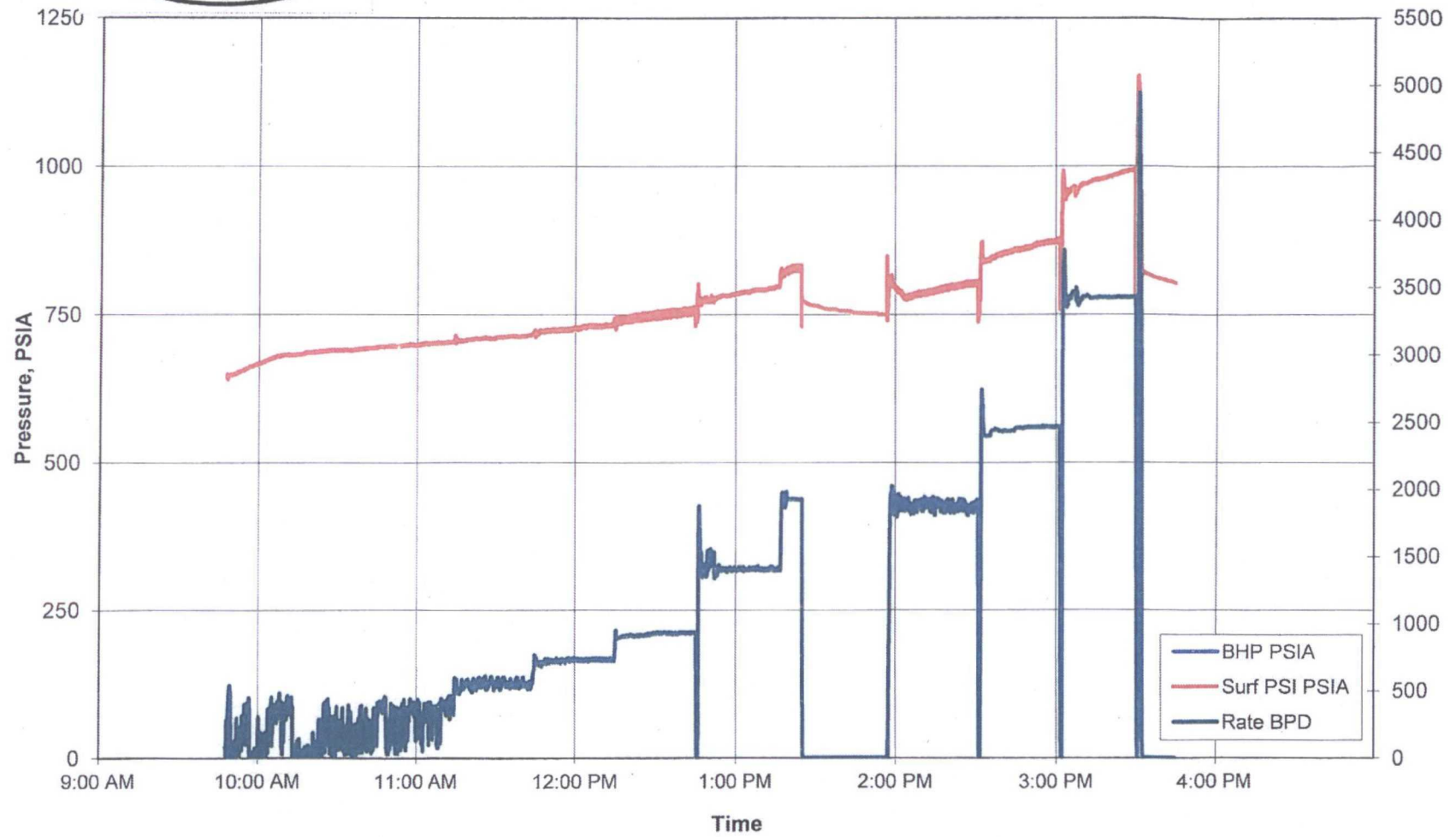


Alamo Resources WAGU # 4  
Step Rate Test 11/11/2014

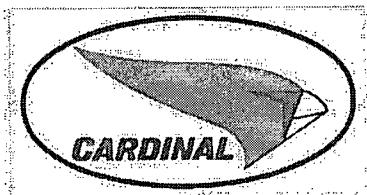




Alamo Resources WAGU # 4  
Step Rate Test 11/11/2014



# Step Rate Test



Cardinal Surveys Company

11/11/2014

No Fracture Indicated

Alamo Resources

WAGU # 4

N/A

Eddy County, New Mexico

SC File # 21982

Tool # 202

Downhole PSI Tool Ser. No:

Surface PSI Gauge Ser. No:

Tool @ Surface

Start Time	End Time	Rate BPD	Comments
1	8:33 AM	9:45 AM	0 9:45 Start Injection
2	9:45 AM	10:15 AM	100
3	10:15 AM	10:45 AM	200
4	10:45 AM	11:15 AM	300
5	11:15 AM	11:45 AM	500
6	11:45 AM	12:15 PM	700
7	12:15 PM	12:45 PM	900
8	12:45 PM	1:15 PM	1400
9	2:00 PM	2:30 PM	1900
10	2:30 PM	3:00 PM	2400
11	3:00 PM	3:30 PM	3400
12	3:30 PM	3:45 PM	0 Fall Off

Eddy County, New Mexico

[illegible]

**ALAMO PERMIAN RESOURCES, LLC  
WELLBORE DIAGRAM**

Lease/Well No.: **WAGU No. 004 WIW**

ELEVATION, GL: 3,628 ft

Location: 2,310' FNL & 990' FWL  
UL: E, SEC: 8 T: 18-S; R: 28-E  
EDDY County, NM

FIELD: ARTESIA: QN-GB-SA

LEASE No.: State B-11539

Spudded: 1/24/1958

API No.: 30-015-02648

Drig Stopped: 2/20/1958

Completed: 2/22/1958

LAT:

LONG:

**CABLE TOOLS**

10" HOLE

Surface Csg:

8-5/8" 24#

Csg Set @ 441'

Cmt'd w/ 50 sx

2-3/8" 4.7# J-55  
IPC Tubing - 58 jts  
Baker Model AD-1  
Tension Packer  
Set @ 1,883.42'  
14,000# Tension  
9/11/2013

8" HOLE

Production Csg:

5 1/2" 14# J-55

Csg Set @ 2,285'

Cmt'd w/ 100 sx

TOC Est'd @ 87'

Calc'd (75% SF)

441'

**TOPS**

**DEPTH, ft**

YATES	439
SEVEN RIVERS	747
QUEEN	1,404
LOCO HILLS	1,964
GRAYBURG	1,976
SAN ANDRES	2,273

TOC Est'd @ 1,752'

Calculated (75% SF)

**PROPOSED INJECTION INTERVAL for WAGU #004 WIW:**

1,964' - 2,273'

**INJECTION ZONES: LOCO HILLS, GRAYBURG, METEX, & PREMIER.**

**PERFS:**

**Zone**

**SPF - # Holes**

**Date**

1966 - 1974'	GB - Zone 12	8' 7 spf - 52 holes	09/01/68
1992 - 1998'	GB - Zone 12	6' 2 spf - 10 holes	09/10/09
2004 - 2009'	GB - Zone 11	5' 2 spf - 10 holes	09/10/09
2010 - 2020'	GB - Zone 11	10' 4 spf - 40 holes	09/01/68
2021 - 2036'	GB - Zone 11	15' 2 spf - 30 holes	09/10/09
2040 - 2051'	GB - Zone 10	11' 2 spf - 22 holes	09/10/09
2054 - 2080'	GB - Zone 9	16' 2 spf - 32 holes	09/10/09
2090 - 2096'	GB - Zone 8	6' 2 spf - 12 holes	09/10/09
2102 - 2110'	GB - Zone 8	8' 4 spf - 32 holes	09/01/61
2128 - 2144'	GB - Zone 7	16' 2 spf - 32 holes	09/10/09
2144 - 2156'	GB - Zone 6	12' 2 spf - 24 holes	09/10/09
2156 - 2160'	GB - Zone 5	4' 2 spf - 8 holes	09/10/09
2174 - 2187'	GB - Zone 4	13' 2 spf - 26 holes	09/10/09
2196 - 2206'	GB - Zone 3	10' 4 spf - 40 holes	02/22/58
2220 - 2226'	GB - Zone 3	6' 4 spf - 24 holes	02/22/58
2234 - 2238'	GB - Zone 2	4' 4 spf - 16 holes	02/22/58
2244 - 2270'	GB - Zone 1	26' 2 spf - 52 holes	09/10/09

**TOTALS: 176' -- 464 holes**

2,285' Csg

2,279' PBDT (09/10/2013)

2,290' TD

**Cumulative Prod. (4/30/14):**

OIL	34.242	MMBO
GAS	75.068	MMCF
WATER	0.000	MMBW
INJECT	350.633	MMBW

Originally Drilled as HUMBLE STATE #2 by Roach & Sheppard.

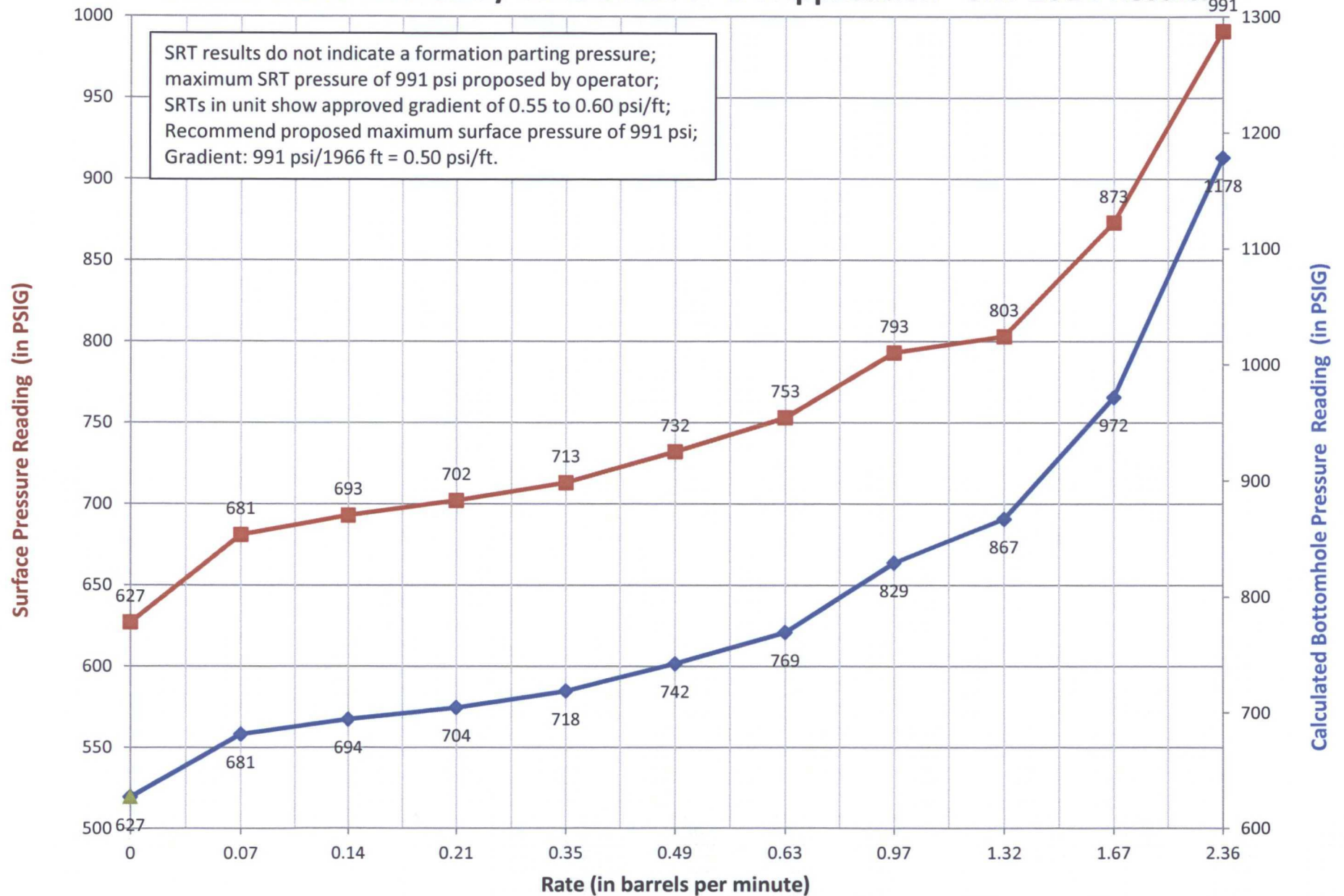
Renamed WAGU Tract 2 #5 - 03/21/68 & WAGU Tract 2 #4 - 08/14/68.

Initial Water Injection: 11/09/68 - pkr @ 2,058'. Inject down Tbg: Premier (2196-2206', 2220-26', & 2234-38'); & Metex (2102-10'). Inject down Annulus: "Old Field" (1966-74').

Added perfs 09/10/2009 & Acidized. Re-Acidized Perfs: 10/23/2012 & 02/25/2014.

HPS: 06/26/2014

## R-3357-C and WFX-928 / WAGU No. 4 - IPI Application - SRT 2014 Results



# Eddy County, New Mexico

T18S-R28E

Alamo Permian Resources, LLC

West Artesia Grayburg Unit  
Waterflood Project



West Artesia Grayburg Unit

Horizontal Scale:  
One Mile

## Map Key

- - Grayburg Producer (WAGU Number Posted)
- ▲ - Grayburg WIW (WAGU Number Posted)
- ⊗ - Plugged Grayburg Well
- - Alamo Permian Resources, LLC Leasehold

BEFORE THE OIL CONSERVATION DIVISION  
Santa Fe, New Mexico  
Case No. 14611 Exhibit No. 3  
Submitted by:  
ALAMO PERMIAN RESOURCES, LLC  
Hearing Date: March 17, 2011

Alamo Permian Resources, LLC  
(2/14/2011)