

10/02/2014 DATE IN	1 USPENSE	PRG ENGINEER	LOGGED IN	IPI TYPE	PMAM1427651091 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]

- IPI  
- Alamo Permitt  
Resources  
274841

#### [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 \_\_\_\_\_

RECEIVED OOD  
OCT - 2 P 2:51

Well  
- West Artesia  
Grayburg Unit #1  
30-015-02645  
Pool  
- Artesia, Queen  
Grayburg - San  
Andres  
3230

#### [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

9/29/14  
Date

twoodruff@alamoresources.com  
e-mail Address



September 29, 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. 1  
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. 1, API # 30-015-02645 ("WAGU Well No. 1").

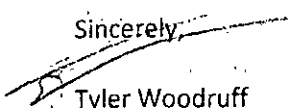
The WAGU Well No. 1 was approved for injection under Ordering Paragraph (1) of Division Order No. R-3357-C dated March 17, 2011. Pursuant to Ordering Paragraph (12) of Division Order No. R-3357-C, Alamo was approved a maximum surface injection pressure of 423 psi for the abovementioned well.

On August 27, 2014, Alamo conducted a step rate injection test on the WAGU Well No. 1. The performed step rate test indicates a surface fracture pressure of 1154 psi for the abovementioned well. Attached for your use and review is the Cardinal Surveys Company report on the step rate test performed on the WAGU Well No. 1.

Based on the results of the step rate test, Alamo, hereby requests authority to increase the maximum surface injection pressure to 1154 psi for the WAGU Well No. 1. The WAGU Well No. 1 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).

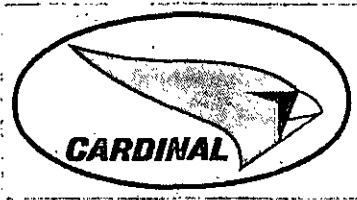
Should you have any questions or need any additional data, please do not hesitate to contact me.

Sincerely,

  
Tyler Woodruff  
Senior Landman

CC: Randy Dade, OCD District II Supervisor

# Step Rate Test



Cardinal Surveys Company

8/27/2014

Fracture @ 1042.2 BPD ✓  
2208.9 BHPSIA, ✓  
1154 Surf PSIA ✓

Alamo Resources  
WAGU # 1  
Wagu  
Eddy County, County,  
SC SC File # 21865  
Tool # Tool # CSCPSI2001.

Downhole PSI Tool Ser. No.  
Surface PSI Gauge Ser. No.  
Tool @ Tool @ 2100 ✓

SRT Reads  
1154 psi  
- 50 psi safety  
1104 psi

1104 psi  
1982 ft = 0.56 psi/ft

Start Time	End Time	Rate BPD	Comments
1	8:02 AM 9:30 AM		0 On Bottom
2	9:30 AM 10:00 AM	500	
3	10:00 AM 10:30 AM	700	
4	10:30 AM 11:00 AM	900	
5	11:00 AM 11:30 AM	1100	
6	11:30 AM 12:00 PM	1300	
7	12:00 PM 12:30 PM	1500	
8	12:30 PM 12:45 PM		0 Fall Off

# Step Rate Test

Alamo Resources

WAGU #1

Wagu

Eddy County, County,



	S Time	E Time	D Time	Last Rate	Step 1: Pressure	Surf	Cum.	Delta	Avg.	Avg From	Lower	Upper
			Min	BPD	BPD	PSIA	BBL	BBL	BPD	Raw Data	Trend	Trend
1	8:20 AM	9:00 AM	40	0	0	2047	1012	0	0	0		
2	9:00 AM	9:30 AM	30	100	100	2114	1054	3.9	3.9	187.2		
3	9:30 AM	10:00 AM	30	200	100	2132	1070	7.95	4.05	194.4		
4	10:00 AM	10:30 AM	30	300	100	2146	1081	14.2	6.25	300	2146	
5	10:30 AM	11:00 AM	30	500	200	2157	1096	25.6	11.4	547.2	2157	
6	11:00 AM	11:30 AM	30	700	200	2184	1114	41.3	15.7	753.6	2184	
7	11:30 AM	12:00 PM	30	900	200	2195	1138	61.3	20	960	2195	
8	12:00 PM	12:30 PM	30	1400	500	2222	1187	89.6	28.3	1358.4		2222
9	12:30 PM	1:00 PM	30	1900	500	2249	1230.1	131.4	41.8	2006.4		2249
10	1:00 PM	1:30 PM	30	2400	500	2264	1284.5	176.6	45.2	2169.6		2264
11	1:30 PM	2:00 PM	30	3400	1000	2316	1383.4	250.9	74.3	3566.4		
12	2:00 PM	2:15 PM	15	0	-3400	2287	1162	250.9	0	0		

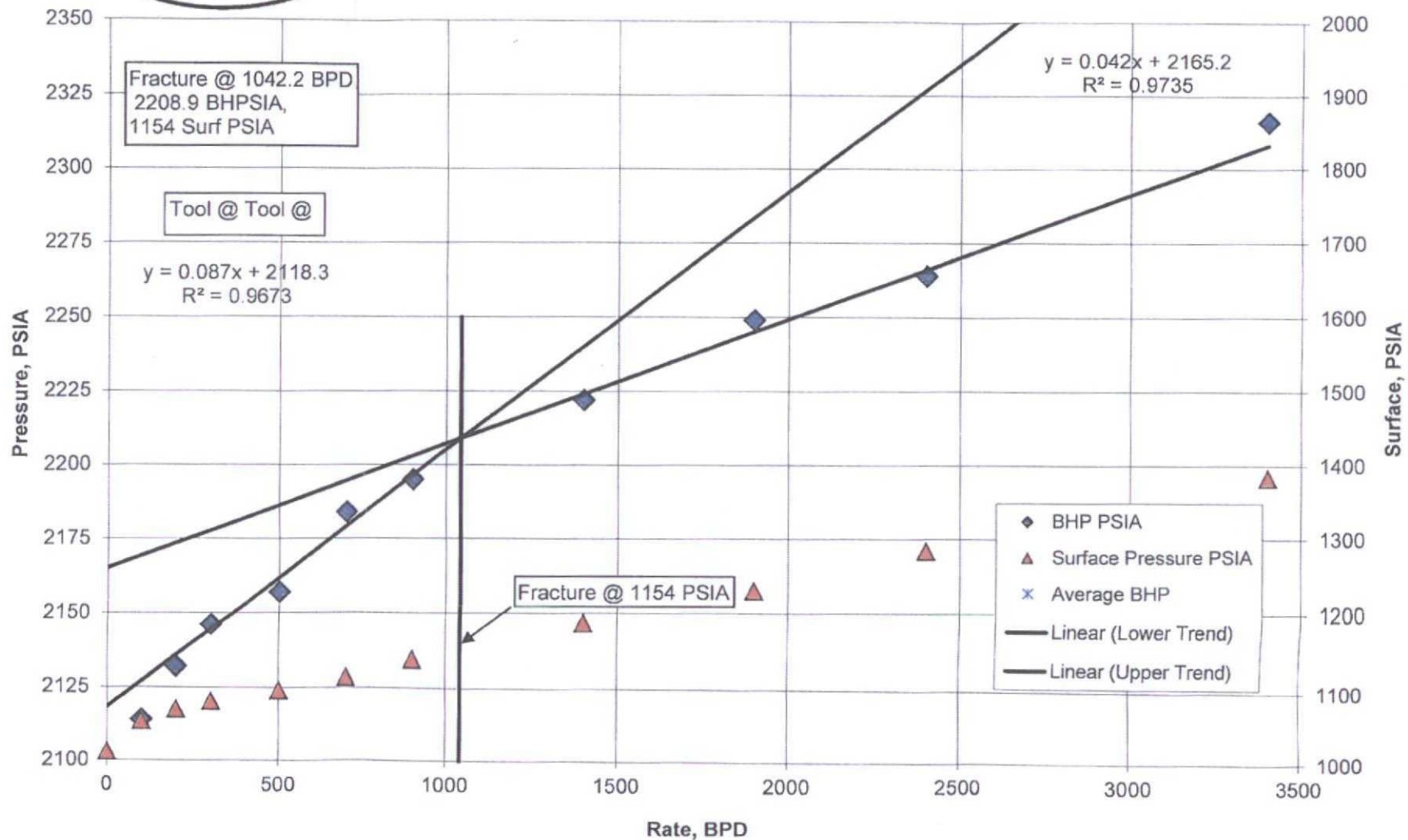
0.0870 2118.3

0.042 2165.2

int point: 1042.222 BPD  
2208.973 Psia

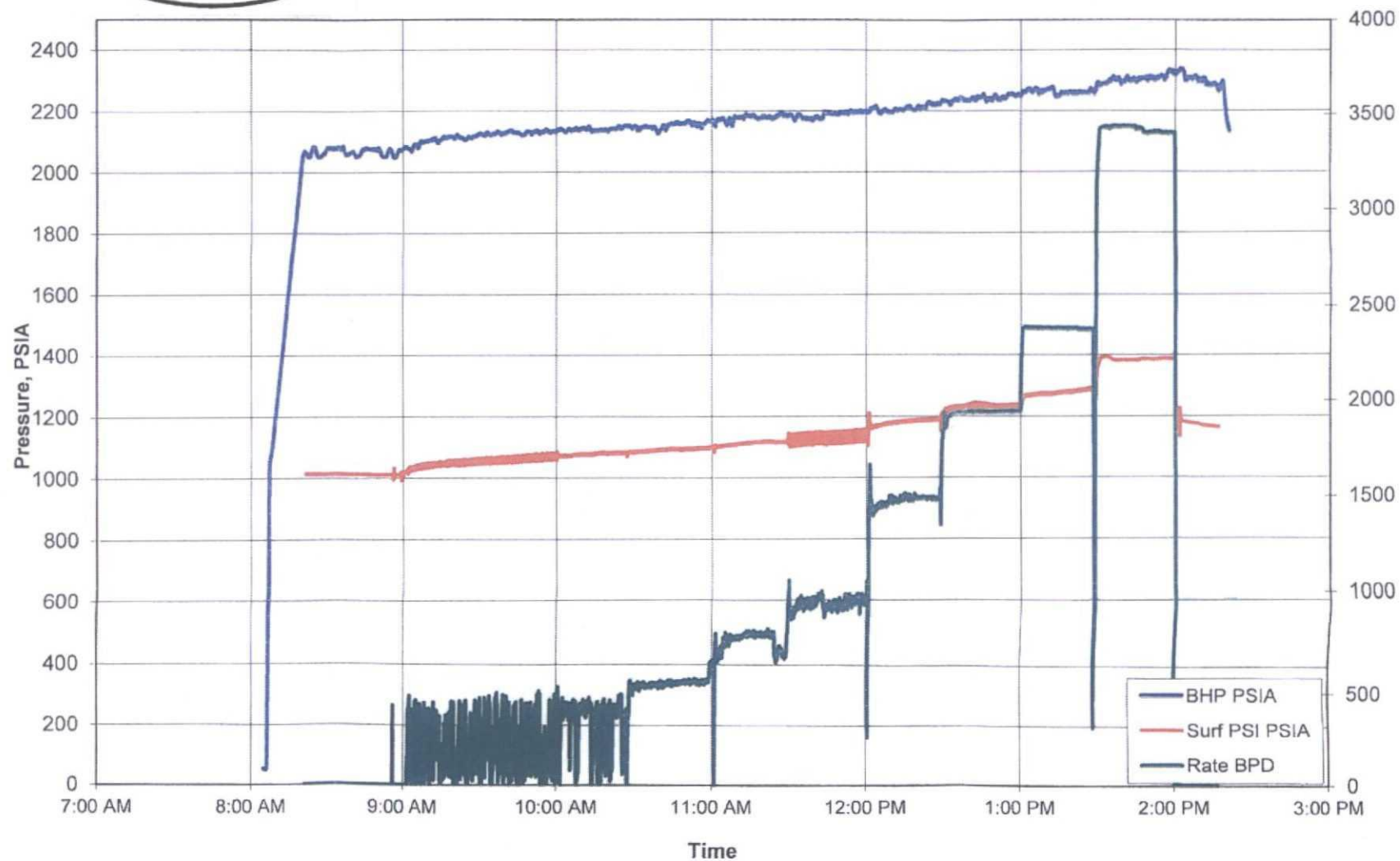


Alamo Resources WAGU # 1  
Step Rate Test 8/27/2014





Alamo Resources WAGU # 1  
Step Rate Test 8/27/2014



**ALAMO PERMIAN RESOURCES, LLC  
WELLBORE DIAGRAM**

Lease/Well No. **WAGU No. 001 WIW**

ELEVATION, GL: 3,633 ft

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

FIELD: ARTESIA: QN-GB-SA

EDDY County, NM

LEASE No. State OG-1644

API No.: 30-015-02645

Spudded: 10/3/1958

Drig Stopped: 10/26/1958

Completed: 11/6/1958

LAT:

LONG:

**CABLE TOOLS**

10" HOLE

Surface Csg:  
8-5/8" 28#

Csg Set @ 451'  
Cmt'd w/ MUD

2-3/8" 4.7# J-55  
IPC Tubing - 56 Jts  
Baker Model AD-1  
Tension Packer  
Set @ 1,816.02'  
15,000# Tension  
2/24/2014

8" HOLE

Production Csg:  
5 1/2" 15.5# J-55

Csg Set @ 2,295'  
Cmt'd w/ 75 sx

TOC = No Cmt

Csg Mudded

**TOPS**

**DEPTH, ft**

YATES	470
SEVEN RIVERS	770
QUEEN	1,416
LOCO HILLS	1,981
GRAYBURG	1,990
SAN ANDRES	2,284

TOC Est'd @ 1,894'

Calculated (75% SF)

**PROPOSED INJECTION INTERVAL for WAGU #001 WIW:**

1,981' - 2,284'

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

PERFS:	Zone	SPF - # Holes	Date
1982 - 2012	GB - Zone 12	30' 2 spf - 60 holes	10/23/09
2012 - 2050'	GB - Zone 11	38' 2 spf - 76 holes	10/23/09
2050 - 2068'	GB - Zone 10	18' 2 spf - 36 holes	10/23/09
2088 - 2096'	GB - Zone 9	8' 2 spf - 16 holes	10/23/09
2108 - 2133'	GB - Zone 8	25' 2 spf - 50 holes	10/23/09
2150 - 2159'	GB - Zone 7	9' 2 spf - 18 holes	10/23/09
2162 - 2165'	GB - Zone 6	3' 2 spf - 6 holes	10/23/09
2178 - 2180'	GB - Zone 5	2' 2 spf - 4 holes	10/23/09
2193 - 2218'	GB - Zone 4	25' 2 spf - 50 holes	10/23/09
2218 - 2242'	GB - Zone 3	24' 2 spf - 48 holes	10/23/09
2254 - 2258'	GB - Zone 2	4' 4 spf - 16 holes	11/06/58
2258 - 2264'	GB - Zone 1	6' 4 spf - 24 holes	11/06/58

**TOTALS: 192' - 404 holes**

2,295' Csg

2,277' PBTD (02/21/14)

2,297' TD

Originally Drilled as GULF STATE #1 by Ralph Nix & Jerry Curtis  
Renamed WAGU Tract 9 #1 - 03/21/68.  
Initial Water Injection: 11/09/68; Perfs: 2254-2264'  
Additional Perforations added in all GB Zones: 10/23/2009

**Cumulative Prod. (04/30/13):**

OIL	11.657	MMBO
GAS	8.851	MMCF
WATER	0.000	MMBW
INJECT	193.604	MMBW

HPS: 06/26/2014