

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
- Engineering Bureau -
1220 South St. Francis Drive, Santa Fe, NM 87505



ED OCD

7014 OCT 27 P 3:31

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

10/24/14
Date

twodruff@alamoresources.com
e-mail Address

- IPI
- Alamo Permian Resources
LLC
274841
Well
- West Artesia Grayburg
Unit #6
30-015-10328
Pool
- Artesia, Green
Grayburg - San
Andres
3230



October 24, 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. 6
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. 6, API # 30-015-10328 ("WAGU Well No. 6").

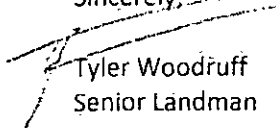
The WAGU Well No. 6 was approved for injection under Ordering Paragraph (1) of Division Order No. R-3357-C dated March 17, 2011. Pursuant to Ordering Paragraph (12) of Division Order No. R-3357-C, Alamo was approved a maximum surface injection pressure of 423 psi for the abovementioned well.

On October 15, 2014, Alamo conducted a step rate injection test on the WAGU Well No. 6. The performed step rate test indicates a surface fracture pressure of 1284 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. 6.

Based on the results of the step rate test, Alamo, hereby requests authority to increase the maximum surface injection pressure to 1250 psi for the WAGU Well No. 6. The WAGU Well No. 6 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

15-Oct-14

Alamo Permian Resources

Well: WAGU No. 6

Field;

County: Eddy County, New Mexico

SC70531

File No. 21928

Intercept @ 2,667.9 BPD, 2,168.6 BH PSIA & Surface Intercept @ 1,284 PSIA

Downhole PSI Tool Ser. No. CSC2601

Surface PSI Gauge Ser. No. CSC 2701

Tool @ 2,150'

	Start	End	Rate
1	8:46 AM	9:45 AM	0 2,150'
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	1:15 PM	1:45 PM	1900
10	1:45 PM	2:15 PM	2400
11	2:49 PM	3:19 PM	3400 Resestablished Rate
12	4:49 PM	5:19 PM	5400 Resestablished Rate
13	5:19 PM	5:34 PM	0 15 Minute Fall Off
14			
15			
16			
17			
18			

$$2150 \times 0.433 = \underline{2931}$$

$$\begin{array}{r} 1284 \text{ psi FPP} \\ - 50 \text{ psi Safety} \\ \hline 1234 \text{ psi} \end{array}$$

$$\frac{1234 \text{ psi}}{2012 \text{ ft}} = 0.61 \text{ psi/ft}$$

Step Rate Test
15-Oct-14

Alamo Permian Resources, LLC
Well: WAGU No. 6
Field:
Location: Eddy County, New Mexico



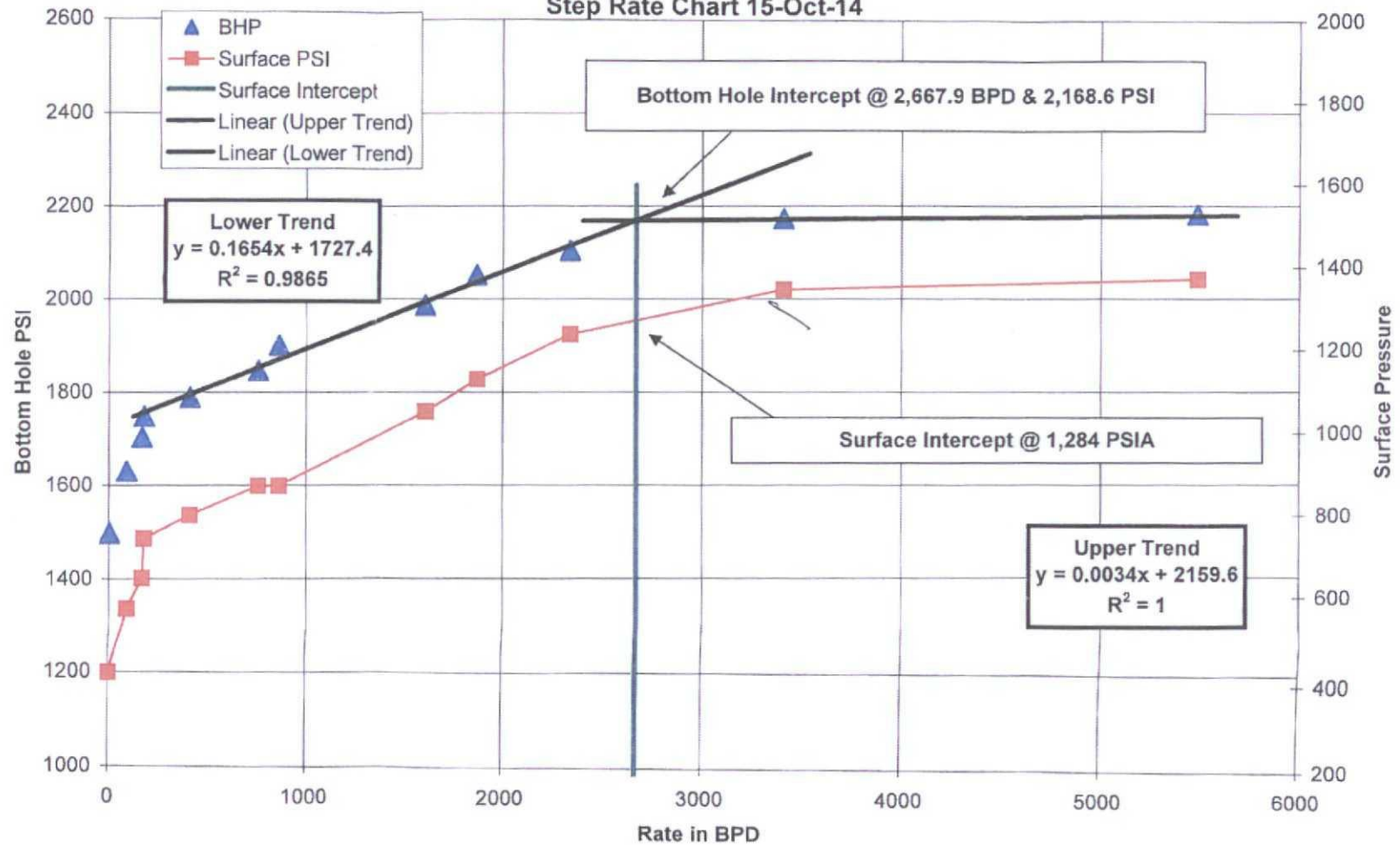
	S Time	E Time	D Time Min	Last Rate BPD	Step BPD	BHP PSIA	Surf PSIA	Cum BBL	Delta BBL	Avg. BPD	Lower Trend	Upper Trend
1	8:46 AM	9:45 AM	59	0	0	1496	423	0	0	0		
2	9:45 AM	10:15 AM	30	100	100	1629	578	1.8	1.8	86		
3	10:15 AM	10:45 AM	30	200	100	1701	651	5.2	3.4	163		
4	10:45 AM	11:15 AM	30	300	100	1747	746	8.8	3.6	173	1747	
5	11:15 AM	11:45 AM	30	500	200	1787	802	17.2	8.4	403	1787	
6	11:45 AM	12:15 PM	30	700	200	1845	873	32.9	15.7	754	1845	
7	12:15 PM	12:45 PM	30	900	200	1899	873	50.8	17.9	859	1899	
8	12:45 PM	1:15 PM	30	1400	500	1985	1052	84.3	33.5	1608	1985	
9	1:15 PM	1:45 PM	30	1900	500	2050	1130	123.2	38.9	1867	2050	
10	1:45 PM	2:15 PM	30	2400	500	2102	1239	171.9	48.7	2338	2102	
11	2:49 PM	3:19 PM	30	3400	1000	2171	1347	242.8	70.9	3403		2171
12	4:49 PM	5:19 PM	30	5400	2000	2178	1370	357.1	114.3	5486		2178
13	5:19 PM	5:34 PM	15			2150	1080	357.1	0	0		
14												
15												
16												

1496 vs. 936

upper trend	0.1654	1727.4
lower trend	0.0034	2159.6
Intersect	2667.90123	BPD
BHP PSI	2168.67086	PSIA



Alamo Permian Resources
WAGU No.6
Step Rate Chart 15-Oct-14



**ALAMO PERMIAN RESOURCES, LLC
WELLBORE DIAGRAM**

Lease/Well No. **WAGU No. 006 WIW**
Location: **2,310' FNL & 1,980' FEL**
UL: G, SEC: 8 T: 18-S, R: 28-E
EDDY County, NM
LEASE No.: **State OG-703**
API No.: **30-015-10328**

ELEVATION, GL: **3,634' ft**

FIELD: **ARTESIA: QN-GB-SA**

Spudded: **6/24/1964**

Drig Stopped: **7/20/1964**

Completed: **7/23/1964**

LAT:

LONG:

CABLE TOOLS

11" HOLE

Surface Csg:

8-5/8" 28H

Csg Set @ 426'

Cmt'd w/ 50 sk

2-3/8" 4.7H J-55
IPC Tubing - 58 Jts
Baker Model AD-1
Tension Packer
Set @ 1,953.00'
16,000# Tension
5/12/2014

8" HOLE

Production Csg:

5-1/2" 14H J-55

Csg Set @ 2,293'

Cmt'd w/ 100 sk

TOC Est'd @ 231'

Calc'd (75% SF)

426' Csg

TOC Est'd @ 1,757'

Calculated (75% SF)

TOPS

YATES

SEVEN RIVERS

QUEEN

LOCO HILLS

GRAYBURG

SAN ANDRES

DEPTH, ft

504

816

1,466

2,010

2,020

2,326' Est'd - Well NDE

PROPOSED INJECTION INTERVAL for WAGU #006 WIW:

2,010' - 2,326'

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

2,010'

PERFS:

Zone

SPE - # Holes

Date

2012 - 2019'

GB - Zone 12

7" 2 spf - 14 holes

05/07/14

2014 - 2017'

GB - Zone 12

3" 1 spf - 3 holes

09/11/81

2042 - 2050'

GB - Zone 12

8" 2 spf - 16 holes

05/07/14

2060 - 2067'

GB - Zone 11

7" 2 spf - 14 holes

05/07/14

2076 - 2084'

GB - Zone 11

8" 2 spf - 16 holes

05/07/14

2092 - 2100'

GB - Zone 10

8" 2 spf - 16 holes

05/07/14

2114 - 2130'

GB - Zone 9

16" 2 spf - 32 holes

05/07/14

2114 - 2130'

GB - Zone 9

16" 5 spf - 80 holes

07/26/64

2124 - 2128'

GB - Zone 9

4" 1 spf - 4 holes

09/11/81

2138 - 2144'

GB - Zone 9

6" 2 spf - 12 holes

05/07/14

2154 - 2164'

GB - Zone 8

10" 2 spf - 20 holes

05/07/14

2154 - 2156'

GB - Zone 8

2" 1 spf - 2 holes

09/11/81

2159 - 2161'

GB - Zone 8

2" 1 spf - 2 holes

09/11/81

2177 - 2182'

GB - Zone 7

5" 2 spf - 10 holes

05/07/14

2177 - 2181'

GB - Zone 7

4" 1 spf - 4 holes

09/11/81

2190 - 2196'

GB - Zone 7

6" 2 spf - 12 holes

05/07/14

2192 - 2194'

GB - Zone 7

2" 1 spf - 2 holes

09/11/81

2206 - 2210'

GB - Zone 6

4" 2 spf - 8 holes

05/07/14

2206 - 2208'

GB - Zone 6

2" 1 spf - 2 holes

09/11/81

2220 - 2230'

GB - Zone 5

10" 2 spf - 20 holes

05/07/14

2243 - 2258'

GB - Zone 3

12" 2 spf - 24 holes

05/07/14

2246 - 2250'

GB - Zone 3

4" 1 spf - 4 holes

09/11/81

2253 - 2257'

GB - Zone 3

4" 1 spf - 4 holes

09/11/81

2274 - 2277'

GB - Zone 3

3" 1 spf - 3 holes

09/11/81

NDE

GB - Zone 2

NDE

NDE

GB - Zone 1

NDE

2,293' Csg

2,293' PBD (04/30/14)

2,295' TD

TOTALS: 107' - 324 holes

* Duplicate perf'd intervals

Cumulative Prod. (04/30/14):

OIL 5,636 MBO

GAS 17,674 MMCF

WATER 0.000 MBW

INJECT 775.024 MBW

Originally Drilled as the MARATHON STATE #1 by Kincaid & Watson Drilling Company

Renamed WAGU Tract 7 #6 - 03/21/68.

Initial Water Injection: 11/09/68 through perfs 2114-2130' in GB - Zone 9 (Upper

Metex).

HPS: 06/26/2014

WAGU #006 WIW - WBDiagram - 06-26-14.xlsx

WELLBORE DIAGRAM (C-108)