

2/1/08 DATE IN	W Jones SUSAN HRE ENGINEER	2/1/08 LOGGED IN	IPI TYPE	PKVR0803234966 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.

Kevin Mayes
Print or Type Name

Signature

Title

Date

c-mail Address

2008 JAN 32 AM 9 40

RECEIVED

So. Engr. Advisor 2/1/08
Kevin Mayes@apachecorp.com

RECEIVED

2008 JAN 25 AM 11 59



TWO WARREN PLACE, SUITE 1500 / 6120 SOUTH YALE / TULSA, OK 74136-4224

[918] 491-4900
FAX: [918] 491-4853
FAX: [918] 491-4854

January 21, 2008

State of New Mexico
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Attention: Mr. William V. Jones

RE: Request for Surface Injection Pressure Amendment
East Blinbry Drinkard Unit (Division Order R-12394)
Lea County, New Mexico

Dear Mr. Jones:

Apache Corporation requests an amendment to the 0.2 psi/ft surface pressure limitation in the East Blinbry Drinkard Waterflood Unit. Said request would allow for accelerated production in the field.

Eight of the seventeen injectors in the unit had step rate tests conducted from December 13 through December 27, 2007 (see attached). The minimum surface parting pressure from these tests was 2100 psi (0.37 psi/ft). As a result, Apache Corporation request that the field wide surface pressure limitation be raised from 1121 psi to 2100 psi.

Your approval of said amendment would be greatly appreciated. Please call with any questions or comments.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Kevin Mayes".

Kevin Mayes, Sr. Engineering Advisor


Attachments

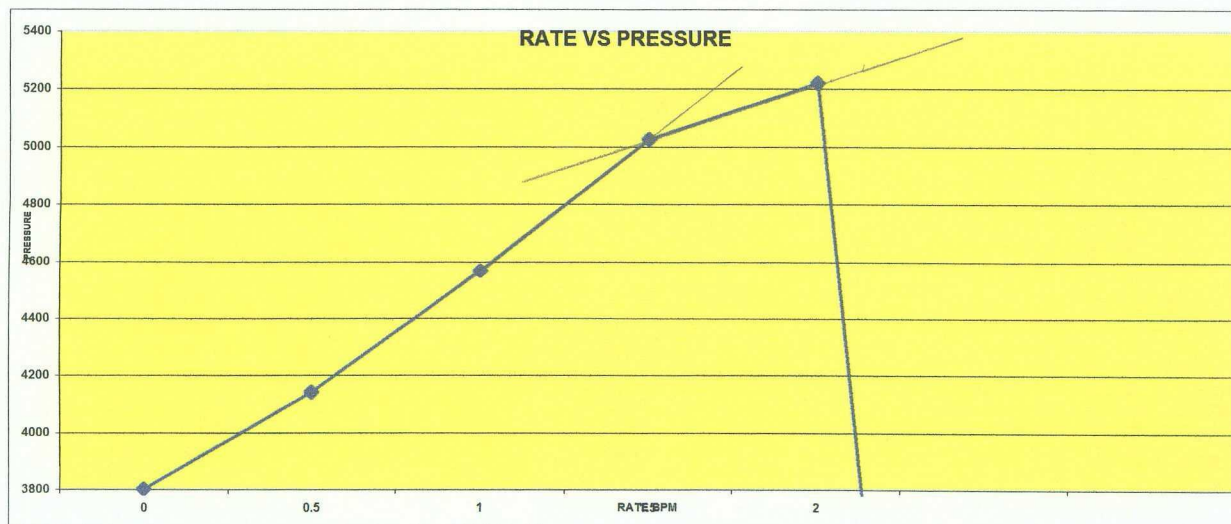
Cc: Clint Mills, Production Engineer
James Pyle, Forman



STEP RATE TEST

MONTY.HOLMES@GRAYWIRELINE.COM

RATE BPM	Date	Time	BH Press	Surf Press	Comments
0	12/18/2007	10:20 AM	3803	1100	
0.5	12/18/2007	10:55 AM	4142	1500	
1	12/18/2007	11:25 AM	4567	2080	
1.5	12/18/2007	11:55 AM	5026	2875	FRACTURE POINT
2	12/18/2007	12:25 PM	5220	3250	
Company: APACHE CORPORATION				Recorded By:	M. HOLMES
Well: E. BLINEBRY DRINKARD UNIT #26				Witnessed By:	JAMES PYLE
Field: DRINKARD				Truck Number:	67
County: LEA				District:	ODESSA
State: NEW MEXICO				Tool Number:	SPARTEK 1"
Injector: WATER				Test Type:	STEP RATE TESTS
Shut In Time: NO INFO				<div>30-025-06536 G 11 215 37E </div>	
Tool Depth: 6600'					
Tubing Size: 2 3/8					
Seat Nipple Depth: 6557' TAIL PIPE					
Perfs: 6582-6708'					
Plug Back Depth: 6772'					

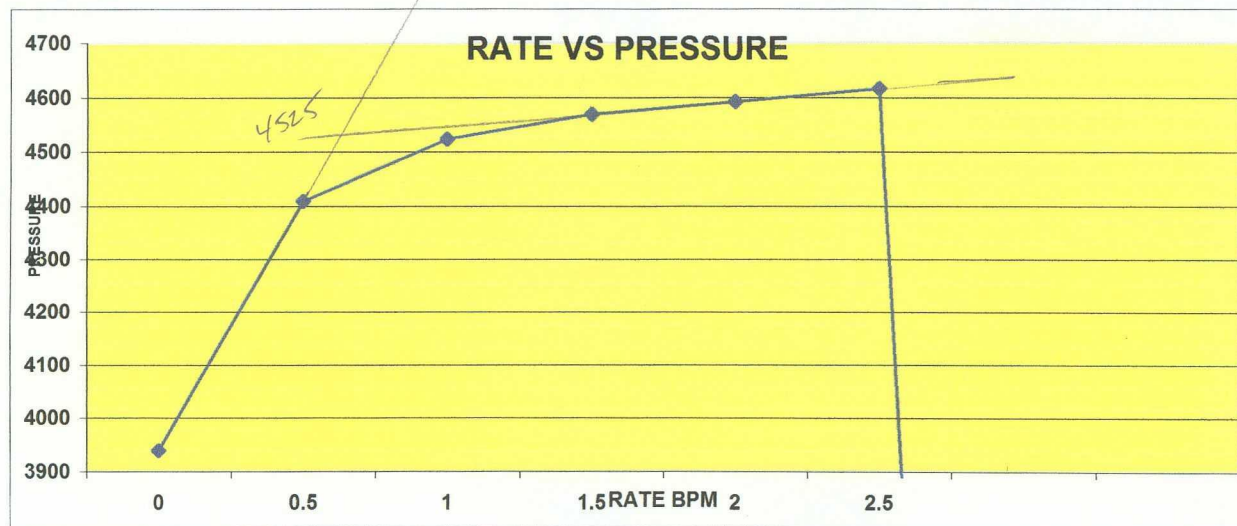




STEP RATE TESTS

MONTY.HOLMES@GRAYWIRELINE.COM


RATE BPM	Date	Time	BH Press	Surf Press	Comments
0	12/27/2007	3:04 PM	3940	1200	
0.5	12/27/2007	3:35 PM	4409	1775	
1	12/27/2007	4:05 PM	4524	2100	FRACTURE POINT
1.5	12/27/2007	4:35 PM	4570	2400	AT 4550 PSI
2	12/27/2007	5:05 PM	4592	2750	
2.5	12/27/2007	5:35 PM	4616	3150	
Company: APACHE CORPORATION				Recorded By:	M. HOLMES
Well: E. BLINEBRY DRINKARD UNIT #27				Witnessed By:	JAMES PYLE
Field: DRINKARD				Truck Number:	67
County: LEA				District:	ODESSA
State: NEW MEXICO				Tool Number:	SPARTEK 1"
Injector: WATER				Test Type:	STEP RATE TESTS
Shut In Time: NO INFO				<div>30-025-06535 E 11 215 37E</div> <div>GWSi</div>	
Tool Depth: 6080'					
Tubing Size: 2 3/8					
Seat Nipple Depth: 6230' TAIL PIPE					
Perfs: 5700-6095', OPEN HOLE: 6464'					
Plug Back Depth: 6632'					

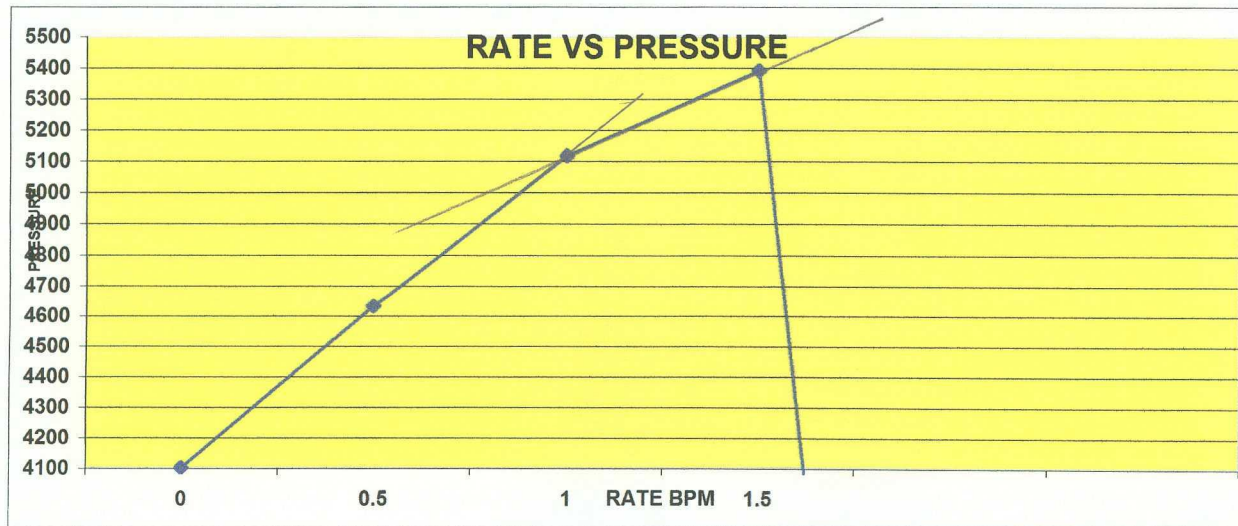




STEP RATE TEST

MONTY.HOLMES@GRAYWIRELINE.COM

RATE BPM	Date	Time	BH Press	Surf Press	Comments
0	12/14/2007	9:34 AM	4102	1200	
0.5	12/14/2007	10:05 AM	4632	2000	
1	12/14/2007	10:35 AM	5119	2650	MIN. FRACTURE
1.5	12/14/2007	11:05 AM	5391	3150	AT 5119 PSI
	UNABLE TO	REACH	2ND POINT	POST BREAK	
Company: APACHE CORPORATION			Recorded By: M. HOLMES		
Well: E. BLINEBRY DRINKARD UNIT #15			Witnessed By: JAMES PYLE		
Field: DRINKARD			Truck Number: 67		
County: LEA			District: ODESSA		
State: NEW MEXICO			Tool Number: SPARTEK 1"		
Injector: WATER			Test Type: STEP RATE TESTS		
Shut In Time: NO INFO			<div>30-025-06527 A H 215 37E</div> <div></div>		
Tool Depth: 6700'					
Tubing Size: 2 3/8					
Packer/Tail pipe: 6575'					
Perfs: 6595' - 6766'					
Plug Back Depth: 6850'					



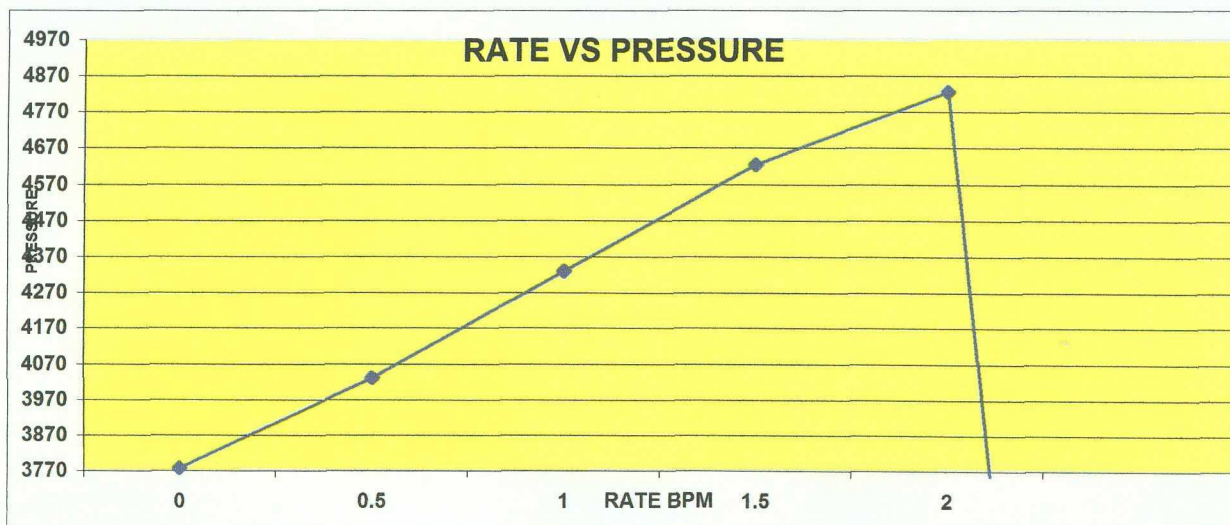


STEP RATE TESTS

MONTY.HOLMES@GRAYWIRELINE.COM

RATE BPM	Date	Time	BH Press	Surf Press	Comments
0	12/19/2007	1:45 PM	3778	1050	
0.5	12/19/2007	2:20 PM	4031	1300	
1	12/19/2007	2:50 PM	4331	1900	MIN FRACTURE
1.5	12/19/2007	3:20 PM	4625	2300	APPROX 4625 PSI
2	12/19/2007	3:50 PM	4825	2800	
	UNABLE TO	REACH	2ND POINT	POST BREAK	
Company: APACHE CORPORATION			Recorded By: M. HOLMES		
Well: E. BLINEBRY DRINKARD UNIT #30			Witnessed By: JAMES PYLE		
Field: DRINKARD			Truck Number: 67		
County: LEA			District: ODESSA		
State: NEW MEXICO			Tool Number: SPARTEK 1"		
Injector: WATER			Test Type: STEP RATE TESTS		
Shut In Time: NO INFO					
Tool Depth: 6600'					
Tubing Size: 2 3/8					
Seat Nipple Depth: 6633' TAIL PIPE					
Perfs: 5742-6747'					
Plug Back Depth: 6850'					

30-025-06539
E 12 215 375

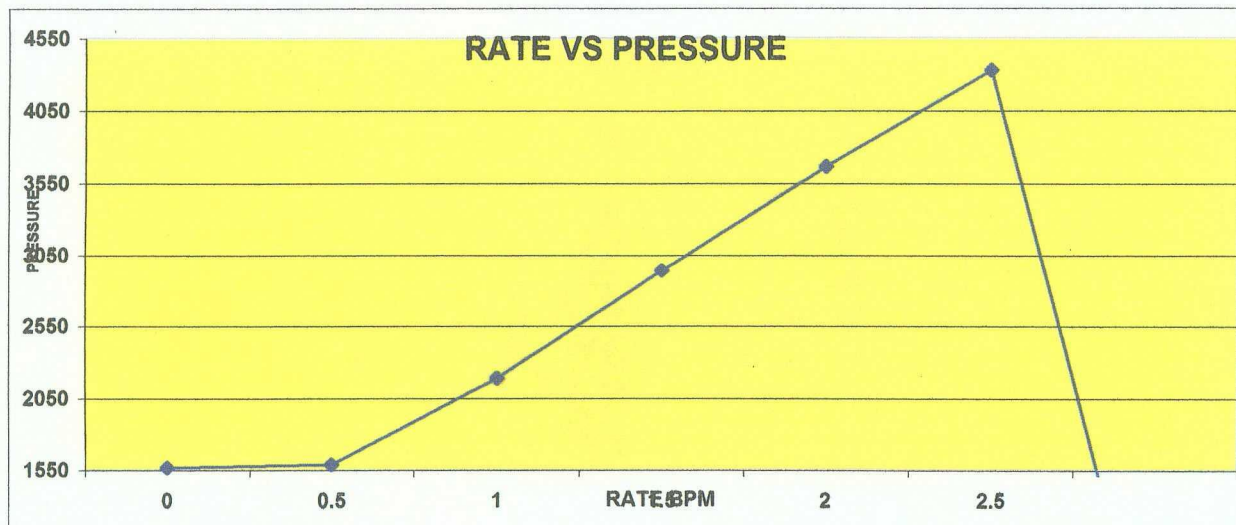




STEP RATE TESTS

MONTY.HOLMES@GRAYWIRELINE.COM

RATE BPM	Date	Time	BH Press	Surf Press	Comments
0	12/27/2007	10:09 AM	1568	0	
0.5	12/27/2007	10:40 AM	1592	0	
1	12/27/2007	11:10 AM	2190	0	
1.5	12/27/2007	11:40 AM	2941	1000	
2	12/27/2007	12:10 AM	3670	2150	FRACTURE POINT
2.5	12/27/2007	12:40 AM	4333	3300	APPROX. 4300 PSI
	UNABLE TO	REACH	2ND POINT	POST BREAK	
Company:	APACHE CORPORATION			Recorded By:	M. HOLMES
Well:	E. BLINEBRY DRINKARD UNIT #17			Witnessed By:	JAMES PYLE
Field:	DRINKARD			Truck Number:	67
County:	LEA			District:	ODESSA
State:	NEW MEXICO			Tool Number:	SPARTEK 1"
Injector	WATER			Test Type:	STEP RATE TESTS
Shut In Time:	NO INFO			<div>30-025-06478 0 11 215 37E</div> <div>GWSI</div>	
Tool Depth	5430'				
Tubing Size:	2 3/8				
Seat Nipple Depth:	6738' TAIL PIPE				
Perfs:	5604-7102'				
Plug Back Depth	6860'				

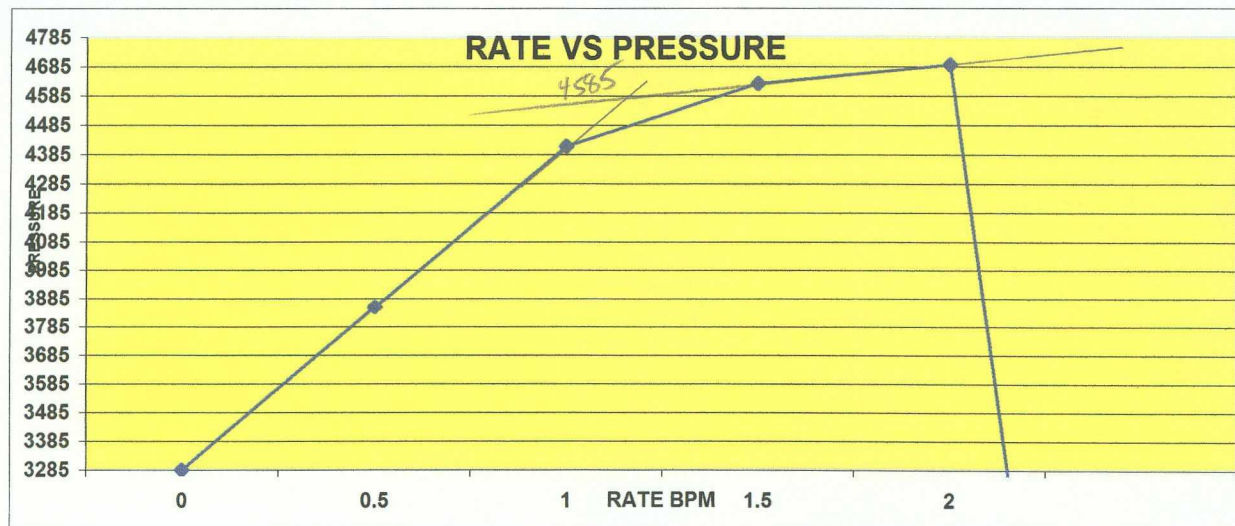




STEP RATE TESTS

MONTY.HOLMES@GRAYWIRELINE.COM


RATE BPM	Date	Time	BH Press	Surf Press	Comments
0	12/19/2007	9:43 AM	3285	900	
0.5	12/19/2007	10:20 AM	3856	1500	
1	12/19/2007	10:50 AM	4414	2200	FRACTURE POINT
1.5	12/19/2007	11:20 AM	4628	2750	APPROX 4580 PSI
2	12/19/2007	11:50 AM	4691	3050	
Company:			APACHE CORPORATION		Recorded By: M. HOLMES
Well:			E. BLINEBRY DRINKARD UNIT #31		Witnessed By: JAMES PYLE
Field:			DRINKARD		Truck Number: 67
County:			LEA		District: ODESSA
State:			NEW MEXICO		Tool Number: SPARTEK 1"
Injector			WATER		Test Type: STEP RATE TESTS
Shut In Time:			NO INFO		<div>30-025-06541 C 12 215 37E GWSi</div>
Tool Depth			5850'		
Tubing Size:			2 3/8		
Seat Nipple Depth:			5785' TAIL PIPE		
Perfs:			5796-5996'		
Plug Back Depth			6025'		

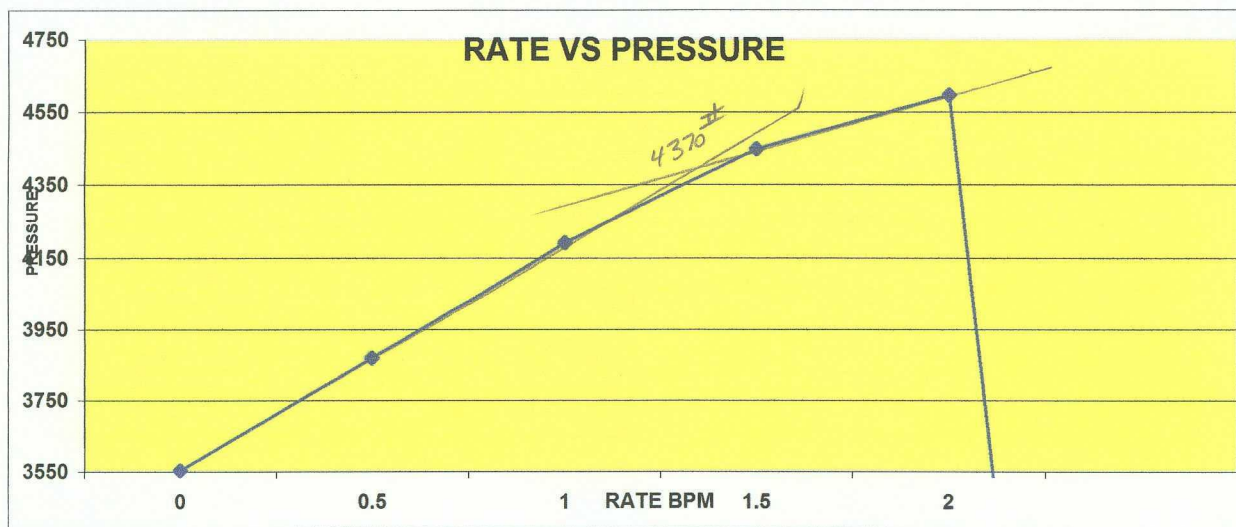




STEP RATE TEST

MONTY.HOLMES@GRAYWIRELINE.COM

RATE BPM	Date	Time	BH Press	Surf Press	Comments
0	12/13/2007	2:26 PM	3553	1000	
0.5	12/13/2007	3:00 PM	3870	1650	
1	12/13/2007	3:30 PM	4192	2125	FRACTURE
1.5	12/13/2007	4:00 PM	4448	2600	APPROX 4385 PSI
2	12/13/2007	4:30 PM	4596	3050	
Company: APACHE CORPORATION			Recorded By: M. HOLMES		
Well: E. BLINEBRY DRINKARD UNIT #3			Witnessed By: JAMES PYLE		
Field: DRINKARD			Truck Number: 67		
County: LEA			District: ODESSA		
State: NEW MEXICO			Tool Number: SPARTEK 1"		
Injector: WATER			Test Type: STEP RATE TESTS		
Shut In Time: NO INFO			<div>30-025-06325 13 1 215 37E</div> <div></div>		
Tool Depth: 5900'					
Tubing Size: 2 3/8					
Packer/Tail pipe					
Perfs:					
Plug Back Depth					





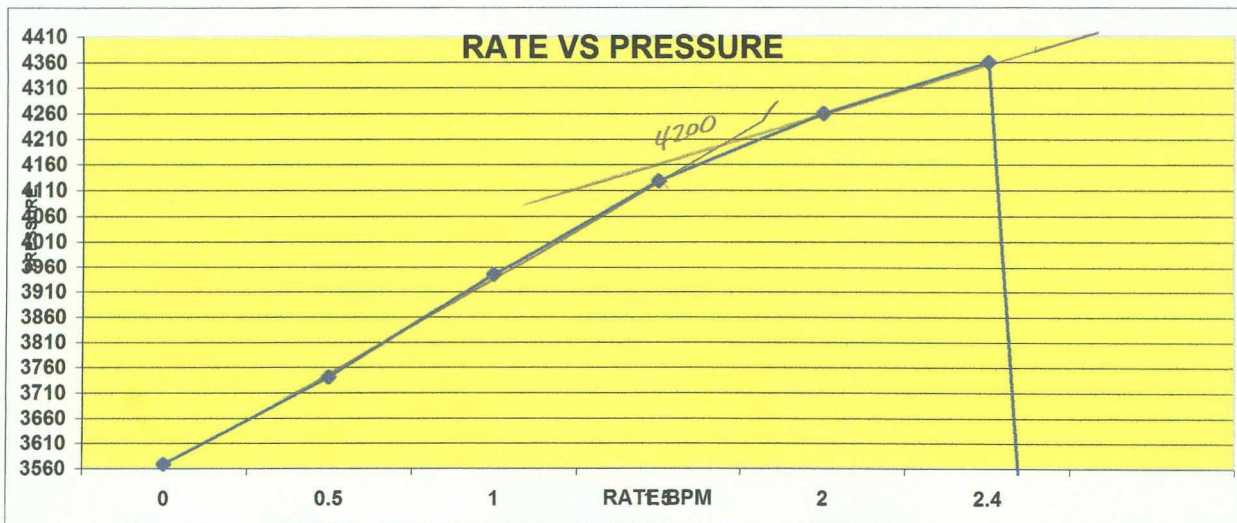
STEP RATE TESTS

MONTY.HOLMES@GRAYWIRELINE.COM

RATE BPM	Date	Time	BH Press	Surf Press	Comments
0	12/20/2007	9:19 AM	3569	1100	
0.5	12/20/2007	9:50 AM	3742	1400	
1	12/20/2007	10:20 AM	3946	1900	
1.5	12/20/2007	10:50 AM	4129	2200	FRACTURE POINT
2	12/20/2007	11:20 AM	4260	2400	APPROX. 4160 PSI
2.4	12/20/2007	11:50 AM	4359	2900	

Company:	APACHE CORPORATION	Recorded By:	M. HOLMES
Well:	E. BLINBRY DRINKARD UNIT #48	Witnessed By:	JAMES PYLE
Field:	DRINKARD	Truck Number:	67
County:	LEA	District:	ODESSA
State:	NEW MEXICO	Tool Number:	SPARTEK 1"
Injector:	WATER	Test Type:	STEP RATE TESTS
Shut In Time:	NO INFO		
Tool Depth:	5800'		
Tubing Size:	2 3/8		
Seat Nipple Depth:	5666' TAIL PIPE		
Perfs:	5720-5890'		
Plug Back Depth:	TD 5919'		

30-025-06550
m 12 z15 37E



Jones, William V., EMNRD

From: Jones, William V., EMNRD
Sent: Friday, February 01, 2008 9:27 AM
To: 'kevin.mayes@apachecorp.com'
Cc: Ezeanyim, Richard, EMNRD; Williams, Chris, EMNRD
Subject: Injection Pressure Increase application from Apache: East Blinbry Drinkard Unit (R-12394)

Hello Kevin:
Received your request and support docs.

For our files and to help in this evaluation, would you please send:

- 1) a lease plat with all injectors and producers spotted on it - and the 8 injectors with step-rate-tests circled.
- 2) a list of all 17 injection wells with stats about them, such as completion depths, latest injection rate and pressure, cumulative injection.
- 3) any discussion as to why these 8 wells were picked as representative and how the waterflood has changed to need more injection volumes, or is this just an attempt to accelerate the fillup or response? Is the current waterflood lagging behind the plan? Why is the perforation depths so much deeper in some wells? Were these 17 injection wells all approved by the same R-12394 or were some approved by waterflood expansion administrative orders?

Thank You,

William V. Jones PE
New Mexico Oil Conservation Division
1220 South St. Francis
Santa Fe, NM 87505
505-476-3448

2/1/2008

Jones, William V., EMNRD

From: Mayes, Kevin [Kevin.Mayes@usa.apachecorp.com]
Sent: Thursday, February 14, 2008 10:14 AM
To: Jones, William V., EMNRD
Cc: Ezeanyim, Richard, EMNRD; Williams, Chris, EMNRD; Mills, Clinton; Moreno, Mario; Curtis, Bob; Sullivan, Tim
Subject: Injection Pressure Increase application from Apache: East Blinebry Drinkard Unit (R-12394)
Attachments: Kevin - EBDU Plat.pdf; c108 spreadsheet - inj only - steprate test app.xls

Will,
 Sorry to take so long to respond. Below in red font are the answers to your questions.

Please call with any other questions or comments.

Kevin

-----Original Message-----

From: Jones, William V., EMNRD [mailto:William.V.Jones@state.nm.us]
Sent: Friday, February 01, 2008 10:27 AM
To: Mayes, Kevin
Cc: Ezeanyim, Richard, EMNRD; Williams, Chris, EMNRD
Subject: Injection Pressure Increase application from Apache: East Blinebry Drinkard Unit (R-12394)

Hello Kevin:
 Received your request and support docs.

For our files and to help in this evaluation, would you please send:

- 1) a lease plat with all injectors and producers spotted on it - and the 8 injectors with step-rate-tests circled. (See attached)
- 2) a list of all 47 18 injection wells with stats about them, such as completion depths, latest injection rate and pressure, cumulative injection. (See attached)
- 3) any discussion as to why these 8 wells were picked as representative (we wanted to do 1/2 the wells and spread them around the unit) and how the waterflood has changed to need more injection volumes, or is this just an attempt to accelerate the fillup or response? (just an attempt to accelerate fillup) Is the current waterflood lagging behind the plan? Why is the perforation depths so much deeper in some wells? (total unitized interval is approx 5500'-6600' with the Blinebry at 5500-6000 and the Drinkard 6300-6600. We took advantage of some wells just completed in Blinebry and some just Drinkard to ensure flooding of Drinkard) Were these 17 injection wells all approved by the same R-12394 or were some approved by waterflood expansion administrative orders? All were approved under R-12394. A subsequent administrative order was approved for well #57 (WFX-819). We would request its pressure allowable be raised also. The information for this well has been added to the attached spreadsheet.

Respectfully Submitted, Kevin

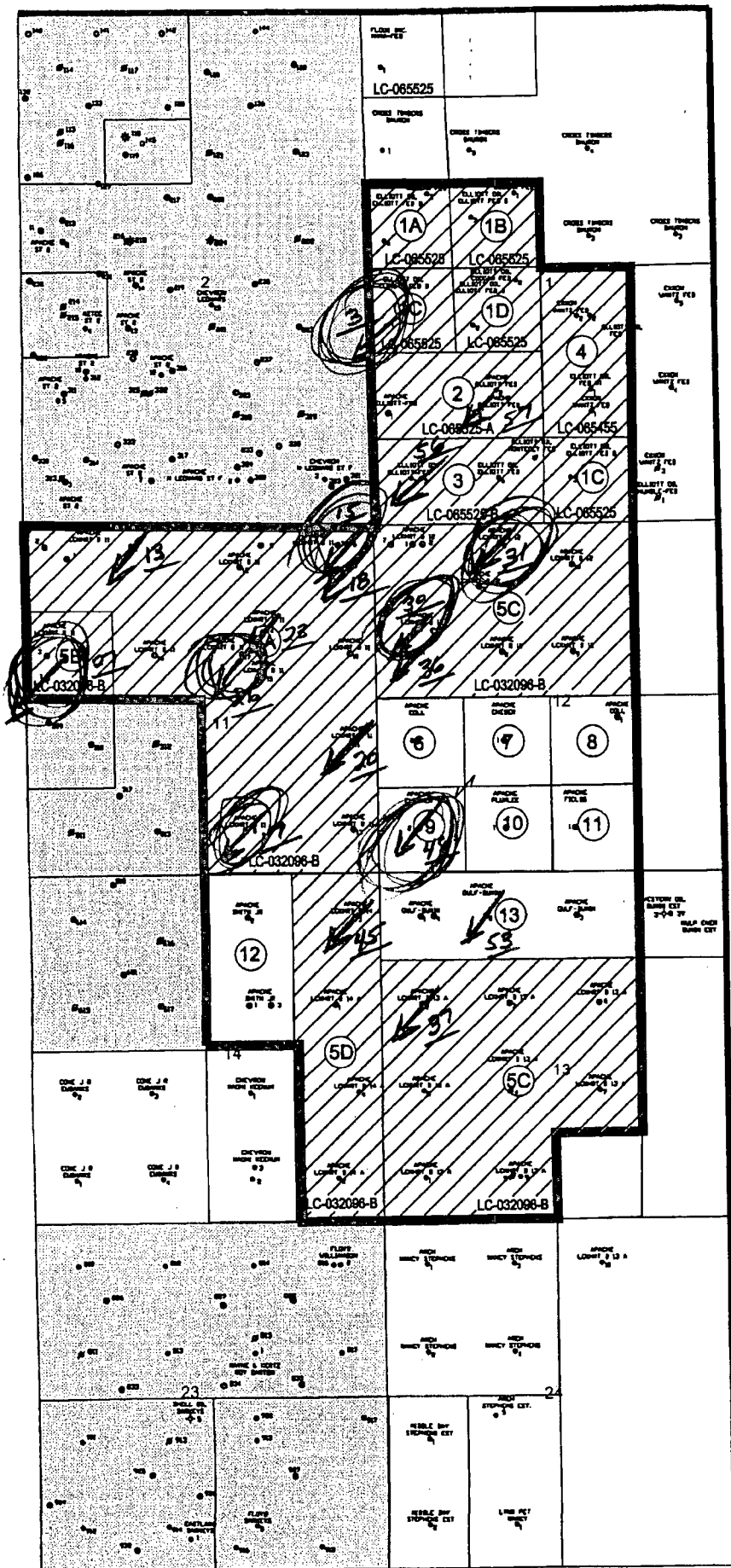
Thank You,

William V. Jones PE
 New Mexico Oil Conservation Division
 1220 South St. Francis
 Santa Fe, NM 87505
 505-476-3448

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2/14/2008

EXHIBIT "A"
EAST BLINEBRY DRINKARD UNIT
LEA COUNTY, NEW MEXICO
APACHE CORP., OPERATOR



LEGEND

⑪ UNIT TRACT NUMBER

		ACREAGE	PERCENTAGE
	FEDERAL LANDS	1640.00	78.85
	PATENTED (FEE) LANDS	<u>440.00</u>	<u>21.15</u>
	TOTALS	2080.00	100%



nit	LOCATION		FOOTAGE	TYPE	API	Current Inj Rate bwpd	Current Inj Pressure psi	Cum Injection BW	COMPLETIONS & COMMENTS
#									
3	1 21S 37E	2970 FSL, 330 FWL		Injector	30025063250000	160	1100	15,169	7/54 5880-5971 O.H.
56	1 21S 37E	660 FSL, 810 FWL		Injector	30025063340000	164	1094	15,911	10/52 5810-5987 O.H.
									4/85 6964-7426
13	11 21S 37E	330 FNL, 1650 FWL		Injector	30025064760003	453	11	67,074	1/52 7674-7776
									2/61 cibp 7500, 6960-7140
									11/63 5943-6077, ABO plugged?
									1/68 6536-6730
15	11 21S 37E	330 FNL, 330 FEL		Injector	30025065270000	170	1105	15,050	9/52 7636-7878
									1/67 6595-6766, cibp 6850
17	11 21S 37E	660 FSL, 1980 FEL		Injector	30025064780001	813	17	84,819	9/59 6560-6650
									9/53 5604-5728
18	11 21S 37E	660 FNL, 330 FEL		Injector	30025064790000	426	1100	42,812	4/54 5759-5852
20	11 21S 37E	1980 FSL, 330 FEL		Injector	30025064810000	393	1023	40,674	4/56 5696-5898
									5/65 6523-6703
23	11 21S 37E	1650 FNL, 1650 FEL		Injector	30025065290000	394	1068	40,674	7/57 5724-5894
26	11 21S 37E	1980 FNL, 1980 FEL		Injector	30025065360000	285	1097	30,475	5/62 6790-7412, 6582-6708
27	11 21S 37E	2310 FNL, 660 FWL		Injector	30025065350000	111	1100	15,173	3/53 6453-6570 O.H.
30	12 21S 37E	1650 FNL, 660 FWL		Injector	30025065390001	493	1038	51,860	7/53 8050-8150
									9/64 6601-6747
									2/90 pb 5960, perf 5740-5952
31	12 21S 37E	330 FNL, 1980 FWL		Injector	30025065410000	367	1100	39,526	3/54 5796-5840
									1/83 5796-5996
36	12 21S 37E	1980 FNL, 660 FWL		Injector	30025065460000	155	1100	15,036	3/56 5712-5908
37	13 21S 37E	1980 FNL, 660 FWL		Injector	30025065560000	474	123	70,973	10/53 6622-6703
									6/55 5680-5890, pb 6250
45	14 21S 37E	660 FNL, 330 FEL		Injector	30025065750000	205	840	19,152	7/56 5741-5877
48	12 21S 37E	660 FSL, 660 FWL		Injector	30025065500000	279	1100	31,227	4/56 5720-5815
53	13 21S 37E	660 FNL, 1650 FWL		Injector	30025065660000	405	1087	41,668	10/54 5702-5888
57	1 21S 37E	1650 FSL, 1650 FWL		Injector	30025290610000	2/00	1000	2,000	2/85 7041-7462
									5/05 CIBP 6970
									11/06 5857-6235