

Step Rate Test



Cardinal Surveys Company

30-Jul-15

Apache Corporation

Well: Barndall SWD No. 1

Field;

County: Lea County, NM

SC70499

File No. 22271

Intercept @ 4104.1 BPD, 7308.6 BH PSIA & Surface Intercept @ 2,910 PSIA

Downhole PSI Tool Ser. No. CSC2604

Surface PSI Gauge Ser. No. CSC 2701

Tool @ 8,900'

	Start	End	Rate
1	10:16 AM	10:45 AM	0 8,900'
2	10:45 AM	11:00 AM	720
3	11:00 AM	11:15 AM	1440
4	11:15 AM	11:30 AM	2160
5	11:30 AM	11:45 AM	4320
6	11:45 AM	12:00 PM	5760
7	12:15 PM	12:30 PM	7200
8	12:30 PM	12:45 PM	8640
9	12:45 PM	1:00 PM	10080
10	1:00 PM	1:15 PM	11520
11	1:15 PM	1:30 PM	12960 DATA SHOWS THIS RATE NEVER REACHED
12	1:30 PM	1:45 PM	0 15 MIN FALL OFF
13			
14			
15			
16			
17			
18			

Step Rate Test
30-Jul-15

Apache Corporation
Well: Barndall SWD No. 1
Field:
Location: Lea County, NM

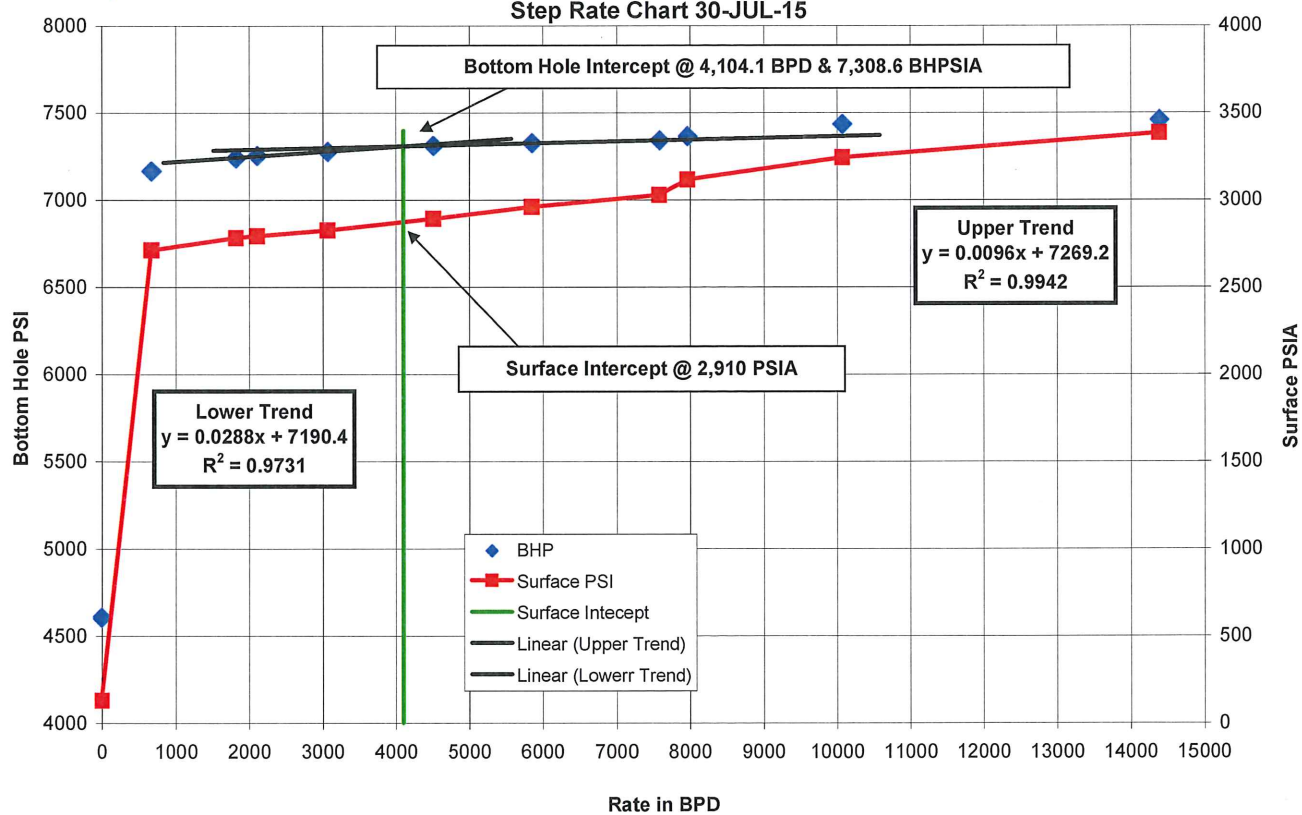


	S Time	E Time	D Time Min	Last Rate BPD	Step BPD	BHP PSIA	Surf PSIA	Cum BBL	Delta BBL	Avg. BPD	Lower Trend	Upper Trend
1	10:16 AM	10:45 AM	29	0	0	4606.7	131	0	0	0		
2	10:45 AM	11:00 AM	15	720	720	7165.9	2712	7	7	672		
3	11:00 AM	11:15 AM	15	1440	720	7240.3	2783	26	19	1824	7240.3	
4	11:15 AM	11:30 AM	15	2160	720	7254.7	2793	48	22	2112	7254.7	
5	11:30 AM	11:45 AM	15	4320	2160	7278.1	2826	80	32	3072	7278.1	
6	11:45 AM	12:00 PM	15	5760	1440	7312	2892	127	47	4512		7312
7	12:15 PM	12:30 PM	15	7200	1440	7327	2960	188	61	5856		7327
8	12:30 PM	12:45 PM	15	8640	1440	7341.8	3028	267	79	7584		7341.8
9	12:45 PM	1:00 PM	15	10080	1440	7365.9	3117	350	83	7968		
10	1:00 PM	1:15 PM	15	11520	1440	7434.9	3243	455	105	10080		
11	1:15 PM	1:30 PM	15	12960	1440	7459.5	3384	605	150	14400		
12	1:30 PM	1:45 PM	15	0	0	7396.1	3523	714	109	10464	PUMP MAXED OUT	
13							2980	714	0	0		
14												
15												
16												

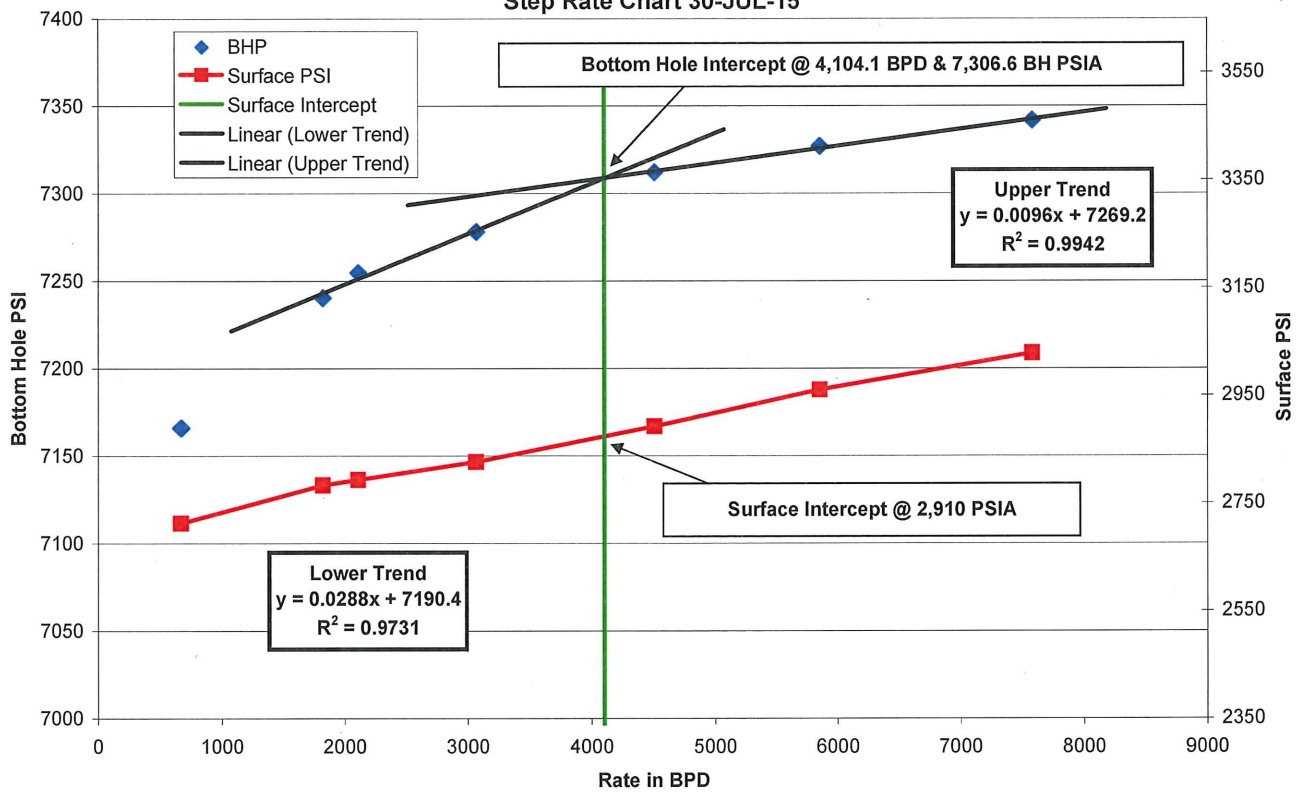
upper trend 0.0096 7269.2
lower trend 0.0288 7190.4
intersect 4104.16667 BPD
BHP PSI 7308.6 PSIA



Apache Corporation
Barndall SWD No. 1
Step Rate Chart 30-JUL-15



Apache Corportation
Barndall SWD No. 1
Step Rate Chart 30-JUL-15





Apache Corporation
Bardall SWD No. 1
Total Data Chart 30-JUL-15

