

4/14/06 DAVID CATANACH 4/17/06 IPI APP NO. pTDS0610759183

DATE IN SUSPENSE ENGINEER LOGGED IN TYPE

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

1220 South St. Francis Drive, Santa Fe, NM 87505



267

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.

Print or Type Name

Signature

Title

Date

April 12, 2006

Division Director of the Environmental Bureau
Att'n: David Catanach
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

2006 APR 14 AM 11 15

30-015-03493

RE: *Key Energy Services, Inc.*
BKE #1 Saltwater Disposal – SWD-495
Section 13, T22S, R27E, UL H
Eddy County, NM

Request to Increase Maximum Permitted Surface Injection Pressure

Dear Sir:

As an Agent for Key Energy Services, Inc. I am submitting this request for an increase in the maximum permitted surface injection pressure from the current 1110 psig to 1400 psig. The basis for this increase is a recent step-rate test. The testing was performed by Cardinal Surveys using downhole and surface pressure recorders and surface flow meters. The pressure bomb was placed at 4100' (perf 4014-4220'). Key Energy Services pump trucks were used to inject the fluids. The fluid rate metering was done on the Cardinal Survey metering trailer linked electronically to their recording van.

The interpretation of the collected data is fairly straight forward since it is quite easy to draw two straight lines through the data points both before and after the breakdown pressure was attained. A total of 15 successively increasing rates, stabilized for 30-minute intervals, were pumped. Some erratic behavior at 2600 and 3100 bpd were attributed to pump truck problems. A new truck was brought in to finish the testing. Once injection recommenced the bottomhole pressure was brought back up to the level prior to shut down before beginning the next step rate of 3600 bpd.

Our interpretation shows the bottomhole pressure at the breakdown point as 2944 psia. The corresponding surface injection pressure is 1397 psia. The official report from Cardinal Surveys is attached to this request. We have not included the raw data file for your review although we would be happy to send it to you upon request. If you have any technical questions in this regard please contact me at 432-686-9790. All correspondence can be directed to:

Key Energy Services, Inc.
Att'n: W.A. Baker
6 Desta Drive, Ste 4400
Midland, Texas 79705

Sincerely,



Terry M. Duffey

cc: Mark Perry – Key Trucking manager – Carlsbad, NM

Attachments

Step Rate Test



Cardinal Surveys Company

31-Mar-06

Key Energy
BKE SWD No. 1

Eddy County, New Mexico

Downhole PSI Tool Ser. No.	76202
Surface PSI Gauge Ser. No.	10500

Time	Procedure
9:00 AM	Arr. Loc.
11:03 AM	Tool @ 4,100'
11:45 AM	100 BPD
12:15 PM	200 BPD
12:45 PM	300 BPD
1:15 PM	500 BPD
1:45 PM	700 BPD
2:15 PM	900 BPD
2:45 PM	1200 BPD
3:15 PM	1500 BPD
3:45 PM	1800 BPD
4:15 PM	2100 BPD
4:45 PM	2600 BPD
5:15 PM	3100 BPD
5:58 PM	CHANGE PUMP
6:11 PM	RESTART PUMP
6:22 PM	3600 BPD
6:52 PM	4100 BPD
7:16 PM	4100 BPD
7:46 PM	5100 BPD
8:16 PM	0 BPD START FALL-OFF



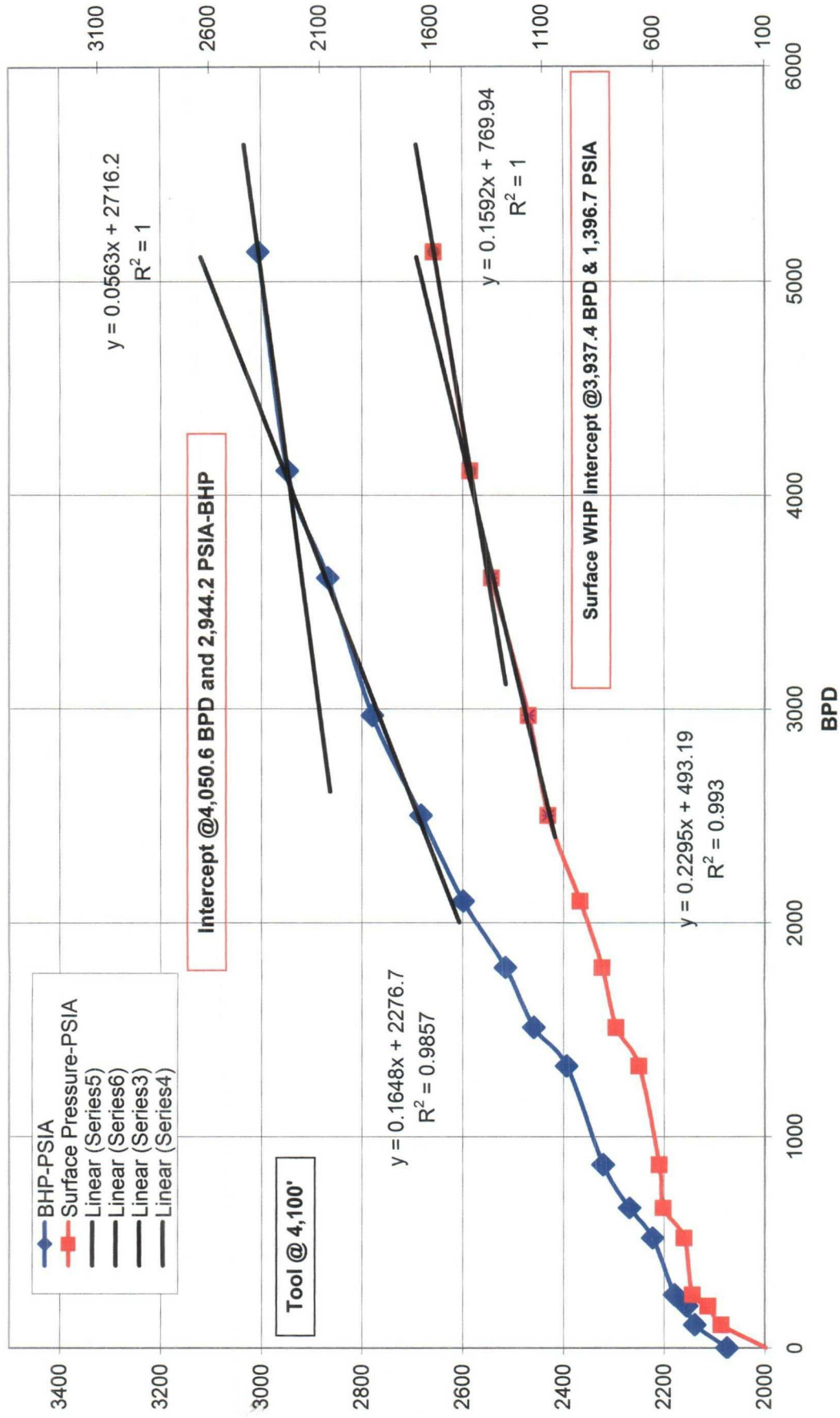
STEP RATE TEST
KEY ENERGY
BKE SWD NO. 1
31-Mar-06

	S Time	E Time	D Time	Last Rate	Step	Last BHP	Last Surf	Cum	Delta	Avg	Lower upper	
			Min	BPD	BPD	PSIA	PSIA	BBL	BBL	BPD		
1	11:03 AM	11:15 AM	9	0	0	2075.4	95.8	0		0		
2	11:45 AM	12:15 PM	0:30:00	100	100	2139.5	296.6	10.7	10.7	108		
3	12:15 PM	12:45 PM	0:30:00	200	100	2155.4	355.7	14	3.3	197		
4	12:45 PM	1:15 PM	0:30:00	300	100	2179.4	425.3	19.2	5.2	249.6		
5	1:15 PM	1:45 PM	0:30:00	500	200	2222.6	463	30	10.8	518.4		
6	1:45 PM	2:15 PM	0:30:00	700	200	2268.2	555.8	43.8	13.8	662.4		
7	2:15 PM	2:45 PM	0:30:00	900	200	2320.7	574.8	61.9	18.1	868.8		
8	2:45 PM	3:15 PM	0:30:00	1200	300	2393.1	665.5	89.6	27.7	1329.6		
9	3:15 PM	3:45 PM	0:30:00	1500	300	2458.3	767.9	118.5	28.9	1509.2		
10	3:45 PM	4:15 PM	0:30:00	1800	300	2514.3	831	152.3	33.8	1789.7		
11	4:15 PM	4:45 PM	0:30:00	2100	500	2598.3	929.9	193.1	40.8	2103.4		
12	4:45 PM	5:15 PM	0:30:00	2600	500	2681.9	1074.8	248.7	55.6	2502.9	2681.9	
13	5:15 PM	5:45 PM	0:30:00	3100	500	2779	1162.5	307	58.3	2970	2779	
14	5:58 PM	6:11 PM	0:13:00			2783.3	1001			0		
15	6:11 PM	6:22 PM	0:11:00						0	0		
16	6:22 PM	6:52 PM	0:30:00	3600	500	2867.2	1328	434		3614.7	2867.2	
17	6:52 PM	7:12 PM	0:20:00	4100						0		
18	7:16 PM	7:46 PM	0:30:00	4100	500	2947.8	1425	571.6		4114.2		2974.8
19	7:46 PM	8:16 PM	0:30:00	5100	1000	3005.5	1588.2	679.2	107.6	5139.2		3005.5
	8:16 PM	8:30 PM	0:14:00	0		2907.4	1132.4					

Surface PSIA		BHP-PSIA
0.2295	493.1	0.1648
0.1592	769.9	0.0563
inter point	3937.411 BPD	inter point
1396.736 Pressure		4050.691 BPD
		2944.254 Pressure

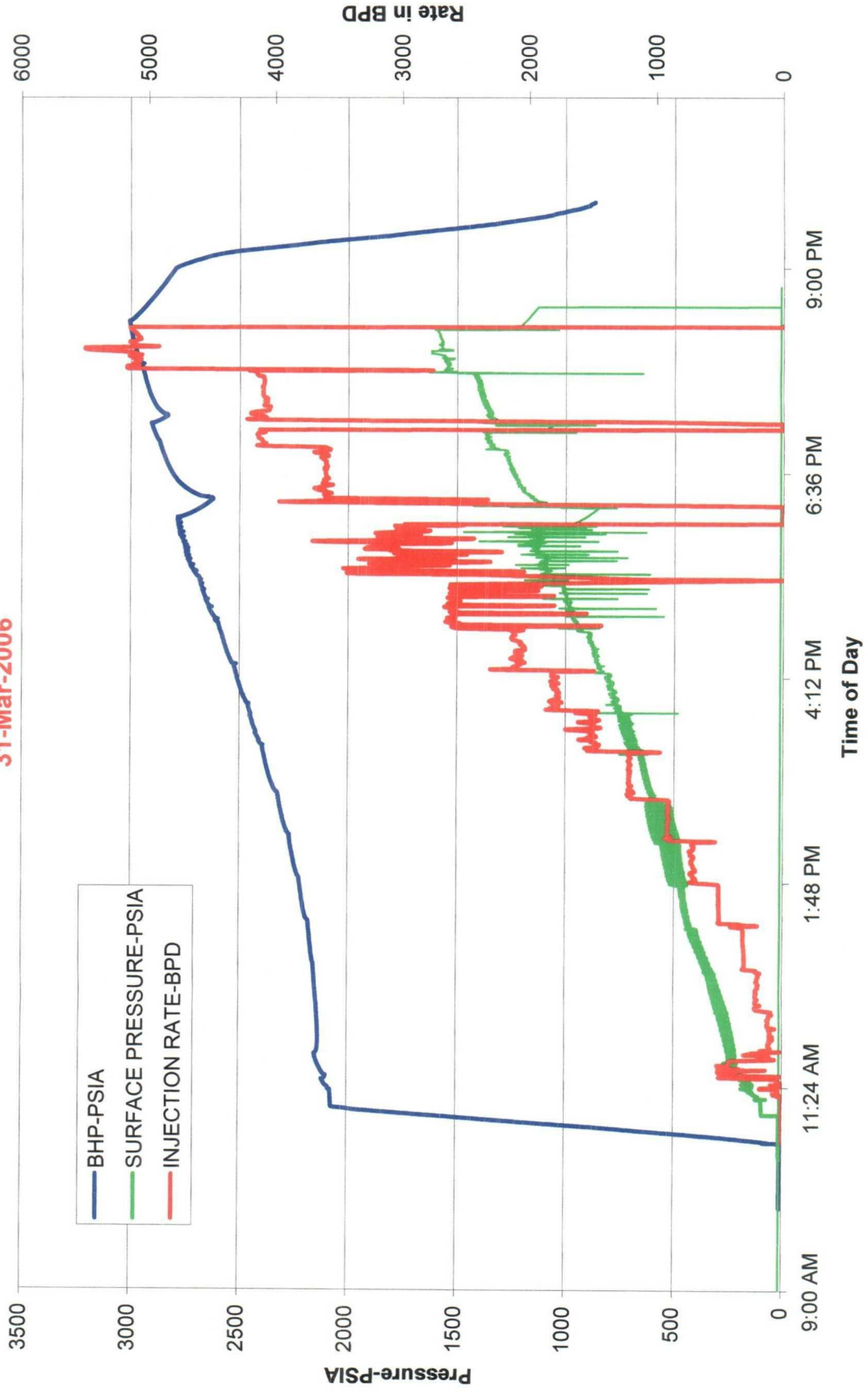


Key Energy
BKE SWD #1
Step Rate Test, 31-Mar-2006





Key Energy
BKE SWD No. 1
31-Mar-2006



Well Selection Criteria Quick Print

(Field_No = 16521)

API Well #	Well Name and No.	Operator Name	Typ	Stat	County	Surf	UL	Sec	Twp	Rng	Ft N/S	Ft E/W	UICPrmt	Lst Insp Dt
30-015-23493-00-00	BKE	001	YALE E KEY, INC	S	A	Eddy	S	H	13	23S	27E	2310 N	860 E	SWD-495 10/19/2005