

Kuehling, Monica, EMNRD

30-045-26420

From: Dan_Dalton@praxair.com
Sent: Thursday, April 24, 2014 11:02 AM
To: Kuehling, Monica, EMNRD; nnepauic@frontiernet.net; Frank.Culler@Bakerhughes.com
Cc: Tyrell_Jones@Praxair.com; Lee_Davis@Praxair.com; Amer_Akhras@praxair.com; Tom_Harrison@praxair.com
Subject: Hogback 18-43 SWDW, Step-Rate Test
Attachments: Step Rate Test Procedure.xlsx

Monica, Bill, and Frank

I've included methodology, procedure, Step Rate and chart for estimating break over on this well. We will have 720 barrels of clean water on location in case you deem that we need to go one or two steps over the 5 bpm. I've schedule Baker to be on location ready to pump by 8:00 A.M. We will have the down hole gauges in the well. Our plan is to shut the water injection well down at 8:00 A.M., April 27 for static conditions for 48 hours. I think everything else is documented on the spreadsheet I've included below. I've include all the contact information below.

Thanks

Dan

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Procedure Steps	Date	Time	Procedure For Step Rate Test:
1	4/27/2014	8:00	Shut Injection pump for SWDW 18-43 down, Shut entire field in, RIH with E-line tools and set tools at mid perf- 2160' KB Record pressure gradient & note time every 500' to the 2160' setting of e-line tools. Make final gradient in hole at 2000'
2	4/28/2014	8:00	Down load SRO Data from e-line tools and store worksheet data
3	4/29/2014	7:45	Down load SRO Data from e-line tools and store worksheet data, Open Braden head valve, and intermediate casing valve with guages on them for witness by state during injection test
4	4/29/2014	8:00	Pump clean water at 0.5 bpm for exactly 15 minutes and record all of the rates and pressure
5	4/29/2014	8:15	Pump clean water at 1.0 bpm for exactly 15 minutes and record all of the rates and pressure
6	4/29/2014	8:30	Pump clean water at 1.5 bpm for exactly 15 minutes and record all of the rates and pressure
7	4/29/2014	8:45	Pump clean water at 2.0 bpm for exactly 15 minutes and record all of the rates and pressure
8	4/29/2014	9:00	Pump clean water at 2.5 bpm for exactly 15 minutes and record all of the rates and pressure
9	4/29/2014	9:15	Pump clean water at 3.0 bpm for exactly 15 minutes and record all of the rates and pressure
10	4/29/2014	9:30	Pump clean water at 3.5 bpm for exactly 15 minutes and record all of the rates and pressure
11	4/29/2014	9:45	Pump clean water at 4.0 bpm for exactly 15 minutes and record all of the rates and pressure
12	4/29/2014	10:00	Pump clean water at 4.5 bpm for exactly 15 minutes and record all of the rates and pressure
13	4/29/2014	10:15	Pump clean water at 4.5 bpm for exactly 15 minutes and record all of the rates and pressure
14	4/29/2014	10:30	Shut down pump and record ISIP
15	4/29/2014	10:35	5 min pressure since Shut Down
16	4/29/2014	10:40	10 min pressure since shut down
17	4/29/2014	10:45	15 min pressure since shut down
18	4/29/2014	10:45	Rig down Baker High pressure pumping equipment from 18-43 SWDW
19	4/29/2014	11:00	Begin pulling e-line tools: Start pressure gradient out of hole at 2000' and every 500' for 5 minutes recording time, pressure and temperature
20	4/29/2014	12:00	Out of Hole with e-line tools. State of New Mexico Representative witness calibration sheet and serial number for E - line tools.
21	04/29/2014	12:30	Down load SRO Data from e-line tools and store worksheet data, give copy of CSV file to NMOCD representative
22	4/29/2014	13:00	Open flow line valve on injection well, start field wells back up and start water injection from water injection pump into 18-43 SWDW for normal operation
23	4/30/2014	12:00	Have final Report and data delivered to NMOCD and Bill Freeman, by Tyrell Jones