

blm/state

HALLIBURTON

iCem® Service

NOBLE ENERGY INC-EBUS

United States of America, COLORADO

For: PETER BURNS

Date: Friday, December 16, 2016

Pirnce, #3-29

WELD, Pirnce, #3-29

NORIE PRINCE 3-29

HALLIBURTON

Customer: NOBLE ENERGY INC E-BUSINESS

Job: 903720677 Noble Prince 3-29 Plug

Case: Case 2 | SO#: 903720677

6

Event	9	End Job	End Job	12/15/201	14:41:53	COM1	3.00	-0.36	0.00	80.4
				6						
Event	10	Depart Location Safety Meeting	Depart Location Safety Meeting	12/15/201	15:00:00	USER				
				6						

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Customer: NOBLE ENERGY INC-EBUS
Job: Noble, Prince 3-29, PTA
Case: NOBLE PRINCE 3-29 | SO#: 903720677

2.0 Real-Time Job Summary

2.1 Job Event Log

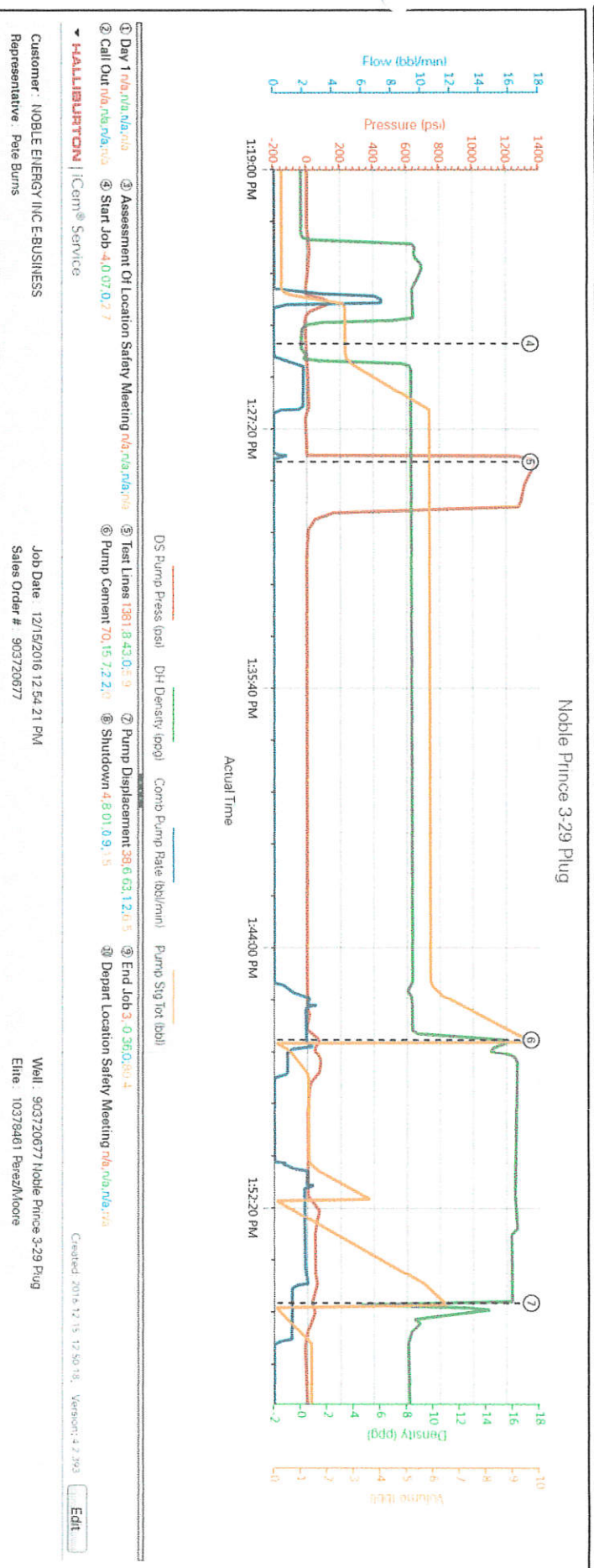
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	PS Pump Press (psi)	DH Density (ppg)	PS Pump Rate (bbl/min)	Recirc Density (ppg)	Pump Sig Tot (bbl)	Comments
Event	1	Arrive at Location from Other Job or Site	Arrive at Location from Other Job or Site	12/16/201	14:30:30	USER						arrived on location from previous location @1430
Event	2	Start Job	Start Job	12/16/201	14:39:17	COM5	61.00	8.29	0.00	0.00	0.00	
Event	3	Start Mix	Start Mixing Brazan pill	12/16/201	14:42:02	USER	64.00	8.29	2.60	0.00	1.50	mixed 1/2 bag Barazan 4 bags of stoppit and 8 bags of sawdust in to 10 bbl of water
Event	4	Pressure Test	Pressure Test	12/16/201	15:37:44	USER	655.00	8.35	0.00	0.00	0.10	test pumps and lines to 2500 psi
Event	5	Pump Spacer	Pump Spacer	12/16/201	15:42:48	USER	30.00	8.36	0.00	0.00	0.00	pumped 10 bbl Barazan pill
Event	6	Pump Displacement	Pump Displacement	12/16/201	15:47:55	USER	52.00	8.67	1.10	0.00	0.60	pumped 1.7 bbl to displace pill out of tubing
Event	7	Pump Cement	Pump Cement	12/16/201	16:50:52	USER	12.00	8.61	0.00	0.00	0.00	40 sks 8.2 bbl @15.8ppg 1.15 yield 5gal/sks
Event	8	Pump Spacer	Pump Spacer	12/17/201	17:01:50	USER	12.00	9.20	2.10	15.71	11.50	5bbl water ahead to establish flow
Event	9	Pump Displacement	Pump Displacement	12/17/201	17:13:40	USER	9.00	8.48	0.00	0.39	0.00	pumped .75 bbl displacement
Event	10	End Job	End Job	12/17/201	17:46:10	COM5						

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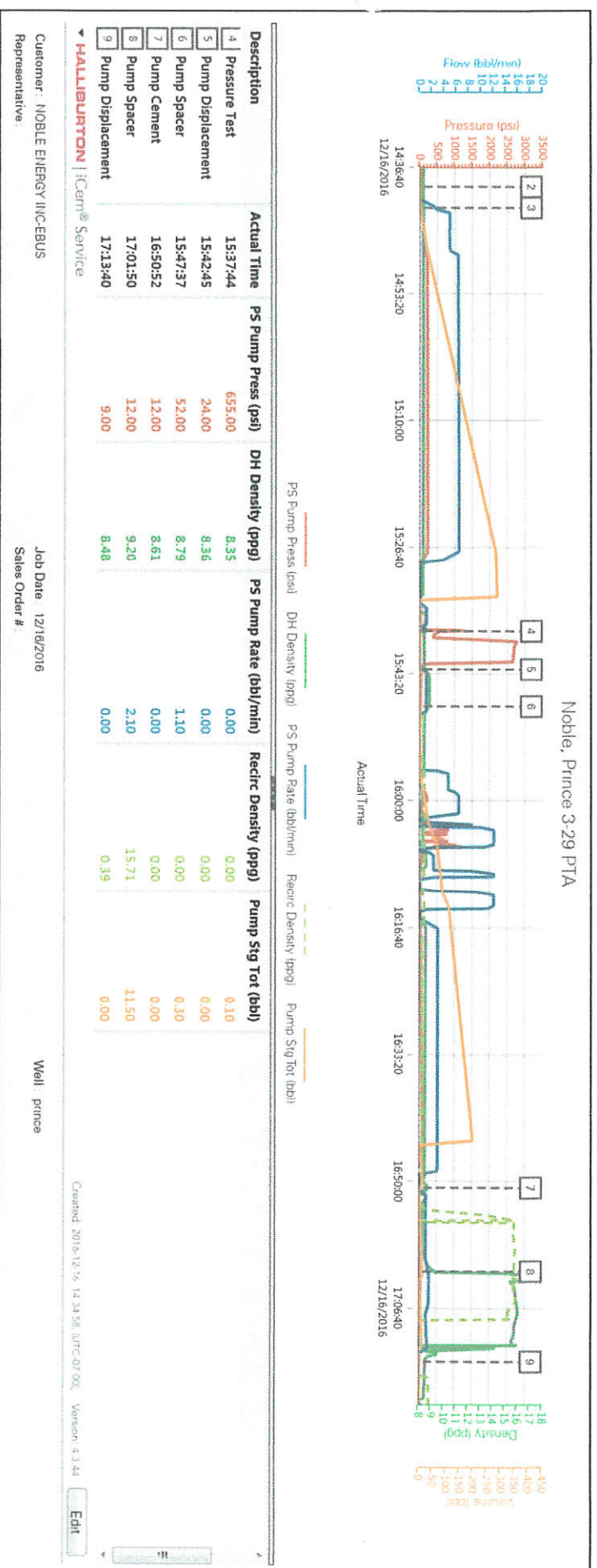
(v. 4.3.44)

3.0 Attachments

3.1 Case 2-Custom Results.png



Customer: NOBLE ENERGY INC-EBUS
 Job: Noble, Prince 3-29, PTA
 Case: NOBLE PRINCE 3-29 | SO#: 903720677



HALLIBURTON

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NOBLE ENERGY INC E-BUSINESS

For:

Date: Thursday, December 29, 2016

Prince 3-29

Case 1

Job Date: Wednesday, December 28, 2016

Sincerely,

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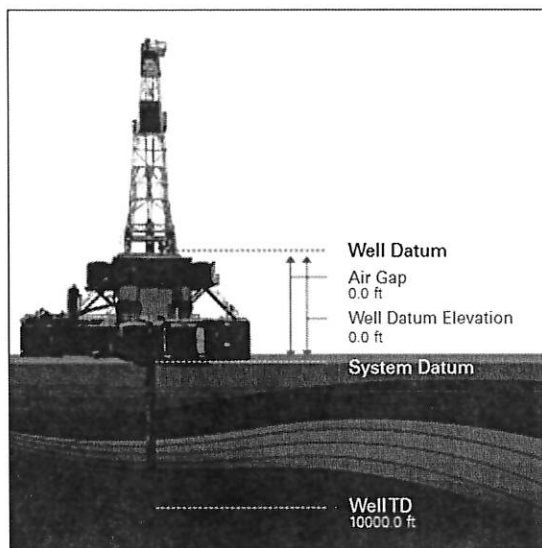
 3D Wellbore Schematic 10

1.0 Job Design

1.1 Overview

Job Type	Primary Cement Job
Injection Path	Casing/Conventional
Foam Job	No

Well Snapshot



Simulations Performed

1.2 Pressure Schedule Inputs

Pressure Mode	Conventional
---------------	--------------

1.3 Pressure Schedule Table

Start (Pump Volume in bbl)	End (Pump Volume in bbl)	Pressure (psi)
0.00	End	0.00

1.4 Time of Stages

Graph Label	Time (min)	Stage Starts Pumping	Stage Enters Annulus
①	0.0	Pump Displacement	
②	0.0	Pump Spacer	
③	0.0	Pump Displacement	
④	0.0	Pump Cement	
⑤	0.0	Pre-Job Safety Meeting	

⑥	0.0	Other
⑦	0.0	Pump Water
⑧	0.0	Pre-Job Safety Meeting
⑨	0.0	Call Out
⑩	0.0	Rig-Up Equipment
⑪	0.0	Rig-Down Completed
⑫	0.0	Other
⑬	0.0	Pump Cement
⑭	0.0	Job Complete
⑮	0.0	Rig-Up Equipment
⑯	0.0	Pre-Rig Up Safety Meeting
⑰	0.0	Pre-Rig Up Safety Meeting
⑱	0.0	Depart Shop for Location
⑲	0.0	Pump Water
20	0.0	Depart Yard Safety Meeting
21	0.0	Depart Location Safety Meeting
22	0.0	Pump Water
23	0.0	Depart Location for Service Center or Other Site
24	0.0	Pump Cement
25	0.0	Pump Cement
26	0.0	Pump Spacer
27	0.0	Pre-Job Safety Meeting
28	0.0	Pump Displacement
29	0.0	Rig-Down Completed
30	0.0	Pump Spacer
31	0.0	Arrive at Location from Service Center
32	0.0	Pressure Test

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Pass-Side Pump Pressure (psi)	Downhole Density (ppg)	Combined Pump Rate (bbl/min)	Combined Pump Total (bbl)	Comments
Event	1	Call Out	Call Out	12/28/2016	03:00:00	USER					Call Out Requested Crew On Location @ 08:00 AM.
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	12/28/2016	06:00:00	USER					2 Bulk Trucks, Cement Pump and Pick Up Truck.
Event	3	Depart Shop for Location	Depart Shop for Location	12/28/2016	07:30:00	USER					
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	12/28/2016	09:30:00	USER					
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	12/28/2016	09:45:00	USER					
Event	6	Rig-Up Equipment	Rig-Up Equipment	12/28/2016	10:00:00	USER					
Event	7	Rig-Down Completed	Rig-Down Completed	12/28/2016	10:50:00	USER					
Event	8	Pre-Job Safety Meeting	Pre-Job Safety Meeting	12/28/2016	11:00:00	USER					
Event	9	Pump Water	Pump Water	12/28/2016	11:32:00	USER	-22.70	6.32	0.00	0.0	Flush Line & Break Circulation With 2 BBL H2O @ 2 BPM 150 PSI.
Event	10	Pressure Test	Pressure Test	12/28/2016	11:35:00	USER	-18.70	8.45	0.00	0.0	Test Lines 2000 PSI.
Event	11	Pump Spacer	Pump Spacer	12/28/2016	11:48:00	USER	51.30	8.44	0.00	0.0	Pump 10 BBL H2O Mixed With 40 LBS MF-III @ 2 BPM 150 PSI.
Event	12	Pump Cement	Pump Cement	12/28/2016	11:55:00	USER	77.30	8.50	0.00	10.8	1ST Plug @ 3971 FT (100 Sacks, Y 1.15, 5 GPS) 20.5

BBL @ 2 BPM 120 PSI : 80
PSI.

Event	13	Pump Displacement	Pump Displacement	12/28/201 6	12:06:00	USER	-26.70	12.18	0.00	19.4	Dispalce With 18 BBL H2O @ 3.5 BPM 50 PSI.
Event	14	Other	Other	12/28/201 6	12:10:00	USER	18.30	8.04	3.40	10.5	POOH To 1528 (2ND Plug)
Event	15	Pre-Job Safety Meeting	Pre-Job Safety Meeting	12/28/201 6	13:25:00	USER	11.30	8.06	0.00	5.0	
Event	16	Pump Water	Pump Water	12/28/201 6	13:35:00	USER	1.30	8.06	0.00	5.0	Flush Line & Break Circulation With 5 BBL H2O @ 3.5 BPM 150 PSI.
Event	17	Pump Spacer	Pump Spacer	12/28/201 6	13:40:00	USER	100.30	9.32	3.10	3.3	Pump 10 BBL H2O Mixed With 40 LBS MF-III @ 3 BPM 122 PSI.
Event	18	Pump Cement	Pump Cement	12/28/201 6	13:43:00	USER	37.30	8.21	1.60	0.1	2ND Plug @ 1528 FT (160 Sacks, Y 1.15, 5 GPS) 33 BBL @ 3 BPM 200 PSI : 80 PSI.
Event	19	Pump Displacement	Pump Displacement	12/28/201 6	13:55:00	USER	-9.70	11.81	0.70	0.0	Dispalce With 4 BBL H2O @ 4 BPM 50 PSI.
Event	20	Other	Other	12/28/201 6	14:00:00	USER					POOH To 321 (3RD Plug)
Event	21	Pre-Job Safety Meeting	Pre-Job Safety Meeting	12/28/201 6	14:20:00	USER					
Event	22	Pump Water	Pump Water	12/28/201 6	14:31:00	USER	-10.70	8.20	0.00	6.5	Flush Line & Break Circulation With 3 BBL H2O @ 4 BPM 130 PSI.
Event	23	Pump Spacer	Pump Spacer	12/28/201 6	14:34:00	USER	-9.70	8.16	0.00	6.5	Pump 10 BBL H2O Mixed With 40 LBS MF-III @ 4 BPM 192 PSI.
Event	24	Pump Cement	Pump Cement	12/28/201 6	14:38:00	USER	24.30	8.44	0.00	0.0	3RD Plug @ 321 FT (115 Sacks, Y 1.15, 5 GPS) 23.5 BBL @ 2.5 BPM 70 PSI : 30 PSI (6 BBL Back To Surface)

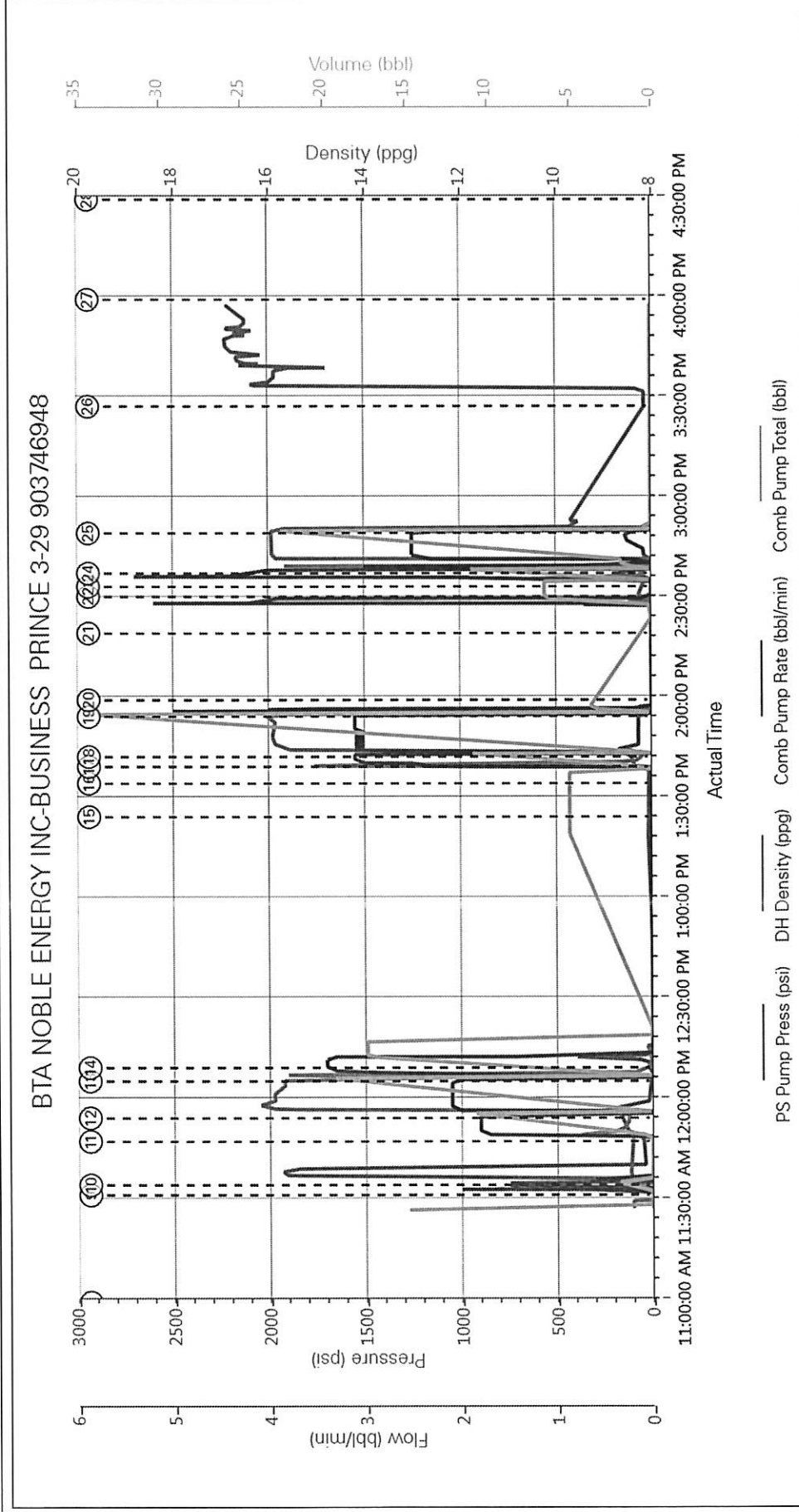
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Created: Thursday, December 29, 2016

Event	25	Pump Displacement	Pump Displacement	12/28/201 6	14:50:00	USER	17.30	15.93	0.40	0.0	Dispalce With 0.5 BBL H2O @ 1 BPM 50 PSI.
Event	26	Pump Cement	Pump Cement (Top Out)	12/28/201 6	15:28:00	USER	-19.70	8.14	0.00	0.0	Mix & Pump Top Out Total Of 53 Sacks 11 BBL @ 15.8 (Pump 5 BBL Waited for 5 Minutes, Pump 3 BBL Waited For 5 Minutes, Pump 3 BBL)
Event	27	Job Complete	Job Complete	12/28/201 6	16:00:00	USER					
Event	28	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	12/28/201 6	16:30:00	USER					
Event	29	Rig-Up Equipment	Rig-Up Equipment	12/28/201 6	16:45:00	USER					
Event	30	Rig-Down Completed	Rig-Down Completed	12/28/201 6	18:10:00	USER					
Event	31	Depart Location Safety Meeting	Depart Location Safety Meeting	12/28/201 6	18:20:00	USER					
Event	32	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	12/28/201 6	18:30:00	USER					

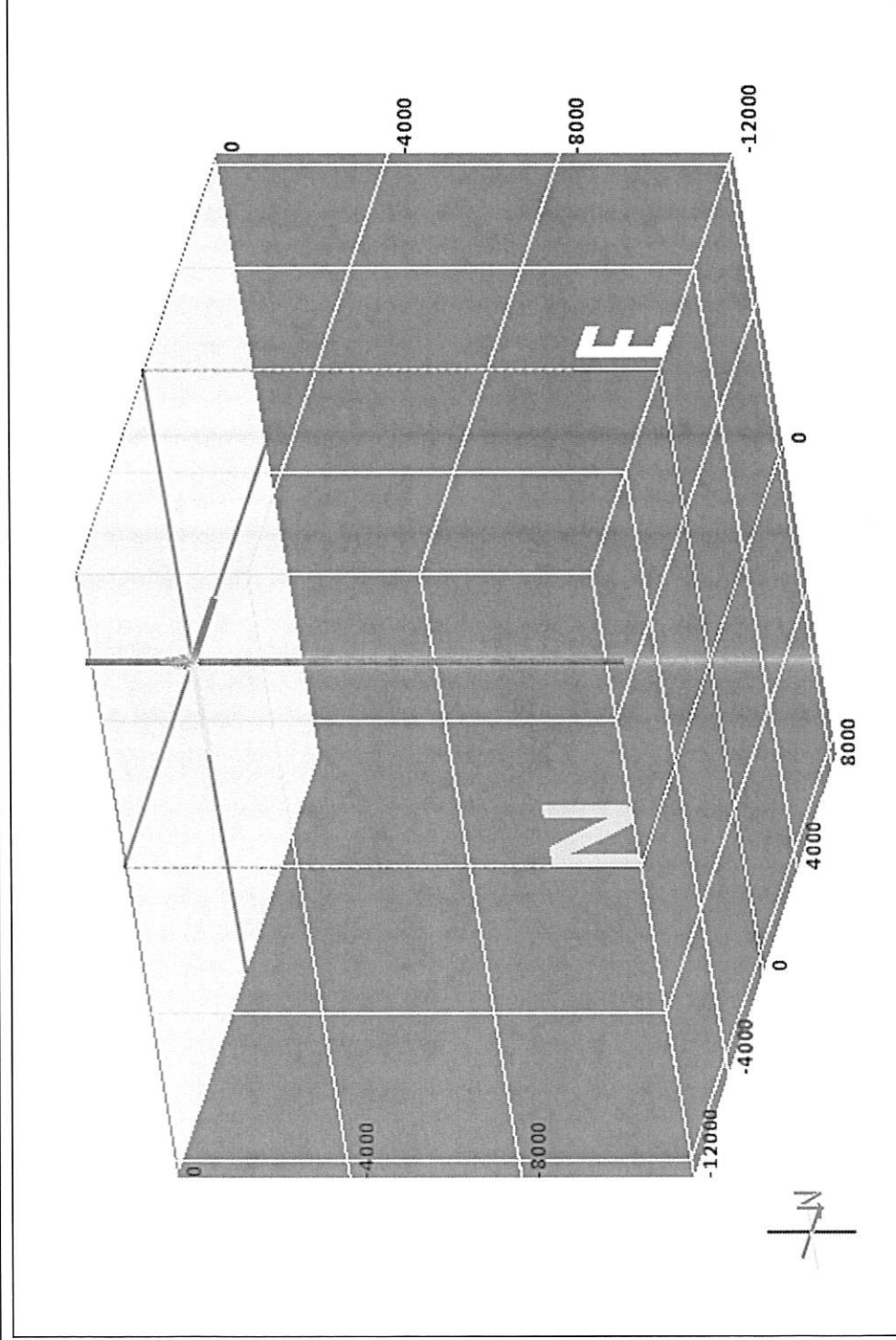
3.0 Custom Graphs

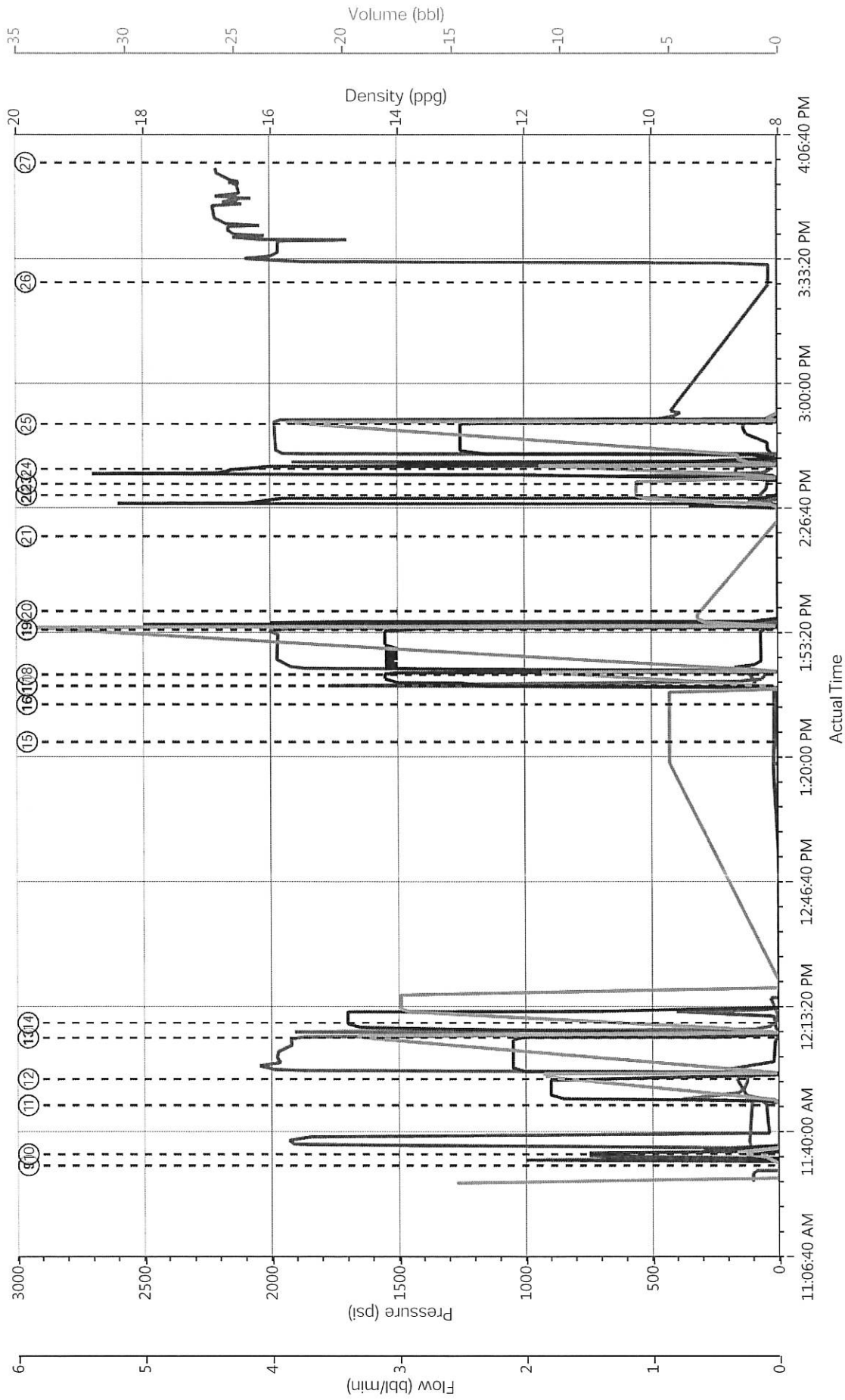
3.1 Custom Graph



4.0 Appendix

4.1 3D Wellbore Schematic





PS Pump Press (psi) DH Density (ppg) Comb Pump Rate (bbl/min) Comb Pump Total (bbl)

- Call Out n/a;n/a;n/a;n/a;n/a;n/a
- Depart Shop for Location n/a;n/a;n/a;n/a;n/a;n/a
- Depart Yard Safety Meeting n/a;n/a;n/a;n/a;n/a;n/a
- Arrive at Location from Service Center n/a;n/a;n/a;n/a;n/a;n/a
- Pre-Rig Up Safety Meeting n/a;n/a;n/a;n/a;n/a;n/a
- Rig-Up Equipment n/a;n/a;n/a;n/a;n/a;n/a
- Pre-Job Safety Meeting n/a;n/a;n/a;n/a;n/a;n/a
- Rig-Down Completed n/a;n/a;n/a;n/a;n/a;n/a
- Pu

Company Man

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NOBLE ENERGY INC-EBUS

United States of America, COLORADO

For: PETER BURNS

Date: Friday, December 16, 2016

Pirnce, #3-29

WELD, Pirnce, #3-29

NOBLE PRINCE 3-29

Job Date: Friday, December 16, 2016

Sincerely,

JACOB AYERS

HALLIBURTON

Customer: NOBLE ENERGY INC E-BUSINESS

Job: 903720677 Noble Prince 3-29 Plug

Case: Case 2 | SO#: 903720677

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Driv-Side Pump Pressure (psi)	Downhole Density (ppg)	Combined Pump Rate (bbl/mh)	Pump Stage Total (bbl)	Comments
Event	1	Other	Day 1	12/14/201	14:41:54	USER					Arrived on location at 1200. Performed JSA then Rigged up and pumped 50'/16 sk plug followed by 1.1 bbl displacement. 2.875" 6.5 # tubing set at 245' inside 8.625" 24# casing. Left location at 1500.
Event	2	Call Out	Call Out	12/15/201	06:00:00	USER					OL time 1200. Verify equipment and materials. Departed yard at 1000
Event	3	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	12/15/201	12:10:00	USER					JSA. Rig tagged previous plug at 305' Need cement inside 8.625" shoe which is 258'. Tubing set at 304' inside 10" open hole. 42 sks to get 50' inside previous casing.
Event	4	Start Job	Start Job	12/15/201	13:24:41	COM1	-4.00	0.07	0.00	2.7	Fill lines 4 bbl water. Circulation established.
Event	5	Test Lines	Test Lines	12/15/201	13:28:29	COM1	1381.00	8.43	0.00	5.9	1300 psi pressure test with kickoff verification.
Event	6	Pump Cement	Pump Cement	12/15/201	13:47:02	COM1	70.00	15.70	2.20	0.0	42 sks/ 8.6 bbl with 50 lbs calcium chloride. 15.8 ppg verified with pressurized scales
Event	7	Pump Displacement	Pump Displacement	12/15/201	13:55:28	COM1	38.00	6.63	1.20	6.5	1.1 bbl water displacement to balance
Event	8	Shutdown	Shutdown	12/15/201	14:03:51	COM1	4.00	8.01	0.90	1.5	

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(v. 4.2.393)

Created: Thursday, December 15, 2016

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Customer: NOBLE ENERGY INC E-BUSINESS

Job: 903720677 Noble Prince 3-29 Plug

Case: Case 2 | SO#: 903720677

6

Event	9	End Job	End Job	12/15/201	14:41:53	COM1	3.00	-0.36	0.00	80.4
				6						
Event	10	Depart Location Safety Meeting	Depart Location Safety Meeting	12/15/201	15:00:00	USER				
				6						

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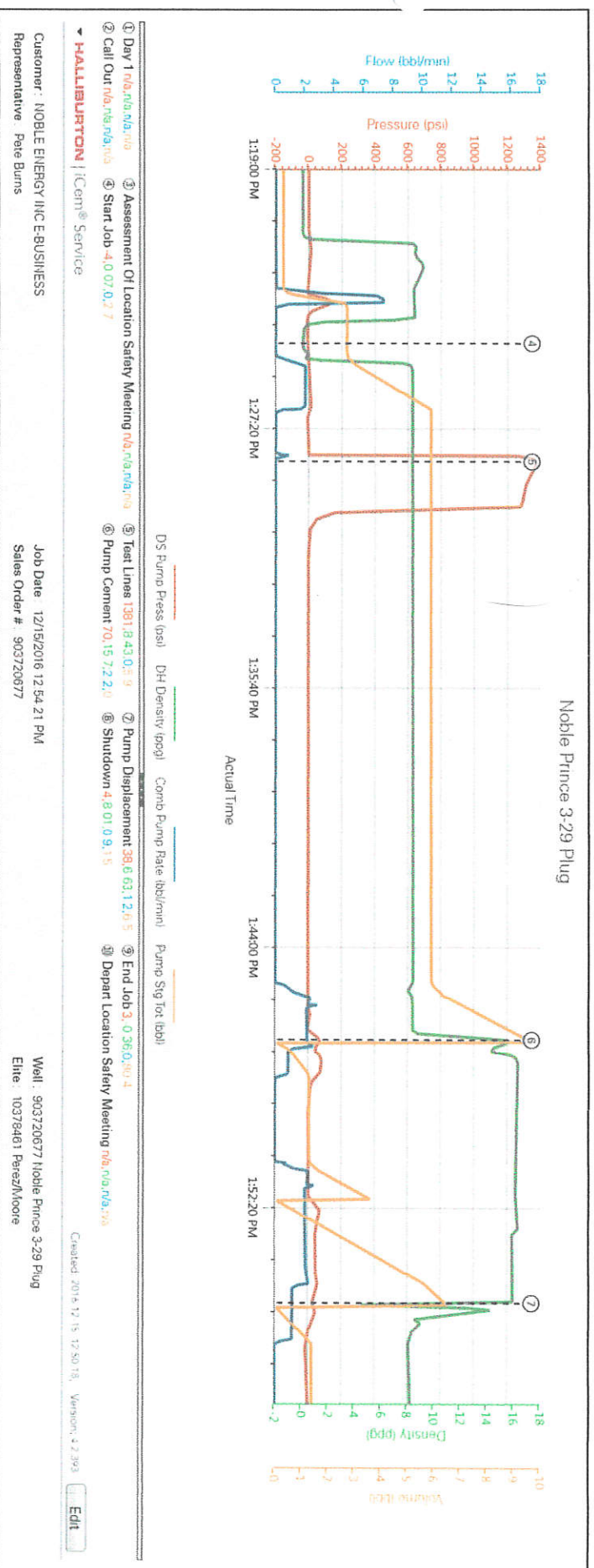
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Type	Seq. No.	Activity	Graph Label	Date	Time	Source	PS Pump Press (psi)	DH Density (ppg)	PS Pump Rate (bbl/min)	Recirc Density (ppg)	Pump Stg Tot (bbl)	Comments
Event	1	Arrive at Location from Other Job or Site	Arrive at Location from Other Job or Site	12/16/2016	14:30:30	USER						arrived on location from previous location @1430
Event	2	Start Job	Start Job	12/16/2016	14:39:17	COM5	61.00	8.29	0.00	0.00	0.00	
Event	3	Start Mix	Start Mixing brazan pill	12/16/2016	14:42:02	USER	64.00	8.29	2.60	0.00	1.50	mixed 1/2 bag Barazan 4 bags of stoppit and 8 bags of sawdust in to 10 bbl of water
Event	4	Pressure Test	Pressure Test	12/16/2016	15:37:44	USER	655.00	8.35	0.00	0.00	0.10	test pumps and lines to 2500 psi
Event	5	Pump Spacer	Pump Spacer	12/16/2016	15:42:48	USER	30.00	8.36	0.00	0.00	0.00	pumped 10 bbl Barazan pill
Event	6	Pump Displacement	Pump Displacement	12/16/2016	15:47:55	USER	52.00	8.67	1.10	0.00	0.60	pumped 1.7 bbl to displace pill out of tubing
Event	7	Pump Cement	Pump Cement	12/16/2016	16:50:52	USER	12.00	8.61	0.00	0.00	0.00	40 sks 8.2 bbl @15.8ppg 1.15 yield 5gal/sks
Event	8	Pump Spacer	Pump Spacer	12/17/2016	17:01:50	USER	12.00	9.20	2.10	15.71	11.50	5bbl water ahead to establish flow
Event	9	Pump Displacement	Pump Displacement	12/17/2016	17:13:40	USER	9.00	8.48	0.00	0.39	0.00	pumped .75 bbl displacement
Event	10	End Job	End Job	12/17/2016	17:46:10	COM5						

3.0 Attachments

3.1 Case 2-Custom Results.png



Customer: NOBLE ENERGY INC-EBUS
 Job: Noble, Prince 3-29, PTA
 Case: NOBLE PRINCE 3-29 | SO#: 903720677

