



## US Treatment Report

<b>Customer:</b> PDC Energy	<b>Rig:</b> Ensign 162	<b>Job #:</b> JOB00082766
<b>Rep:</b> Jeremy Stoltz	<b>Well:</b> FERGUSON 23E-332	<b>Job Date:</b> Mar 03 @ 00:00
<b>Supervisor:</b> Vitalijs Neverdasovs	<b>UWI:</b> 250'FNL, 2240'FEL, Sec 24	<b>Time Requested:</b> Mar 03 @ 00:00
<b>Job Type:</b> US Primary	<b>Surface:</b> Lat 40.385787, Long - 104.524891	<b>Time Arrived:</b> Mar 03 @ 11:00
Casing-Production		<b>Time Released:</b> Mar 03 @ 20:00

### Scavenger

55.29 sk	MAG EV 12.9 + 0.80% MCR-3 + 0.50% MCR-1 + 0.70% MCFL-7 + 1.00% MCFW-1 + 0.50% MCGC-1 + 0.20% MCDF-P			
	Weight: 12lb/gal			
	Yield: 1.93 ft <sup>3</sup> /sk = 19bbls	Mix Water:	10.71 gal/sk = 592.08 gal	
1037 sk	MAG EV 12.9 + 0.80% MCR-3 + 0.50% MCR-1 + 0.70% MCFL-7 + 1.00% MCFW-1 + 0.50% MCGC-1 + 0.20% MCDF-P			
	Yield: 1.53 ft <sup>3</sup> /sk = 282.5bbls	Mix Water:	7.72 gal/sk = 8003.4gal	
1890 sk	MAG EV 13.7 + 0.50% MCA-2 + 0.35% MCR-H + 0.30% MCI-2 + 0.80% MCFL-7 + 0.30% MCFR-2 + 0.50% MCFW-1 + 0.50% MCGC-1 + 0.20% MCDF-P			
	Yield: 1.35ft <sup>3</sup> /sack = 367.87bbls	Mix Water:	6.40gal/sack = 9792gal	

BHCT (F)	215	BHST (F)	215	Casing 1 Casing Size (in)	9.625
Casing 1 Grade	J-55	Casing 1 Weight (lb/ft)	36	Casing 2 Casing Size (in)	5.5
Casing 2 Grade	P-110	Casing 2 Weight (lb/ft)	20	Collapse Csg Pressure (psi)	11080
Float Depth (ft)	15608.8	Funnel Vis (sec/qt)	55	Hole Size (in)	8.5 / 8.75
Max Csg Pressure (psi)	12640	Max Pressure (psi)	3200	Mud Density (lb/gal)	10.3
Mud Type	OIL	Plug Size (in)	5.5	Plug Type	Rig
TMD (ft)	BASED 16641	TVD (ft)	6609		Supplie d

Treatment Info:	Sacks Used: 0	Sacks Not Used: 0		
Preflush:	38bbls MAG Sweep-H + MAG Clean-1 & 19bbls MAG Sweep-H			Circulation Time: 4.5
Displace:	347bbls Fresh Water & 153.7bbls Fresh Water			Slurry Temp: 65 Bulk Sample: Yes
				Water Temp: 60 Water Sample: Yes
				Bulk Temp: 68 Slurry Sample: Yes
	Slurry Returns:	Plug Bumped: Yes	Pump Out Lines: Yes	Float Held: Yes

Time	Pressure psi	Annular Pressure psi	Volume Per Stage bbls	Total Stage Volume bbls	Rate bbls/min	Treatment Detail
10:00	0.00					Arrive on Location - CUSTOMER REQUESTED CREW @ 11:00 AM. RIG IS RUNNING CASING.
10:45	0.00					CASING LANDED/ RIG IS CIRCULATING 10.5 BPM @ 1022 PSI

14:40	0.00					Safety Meeting - Held pre job safety meeting to discuss job hazards and procedure
15:09	0.00					Drop Plug - DROP 1ST BOTTOM PLUG
15:12	257.00		5	5	2.0	Fill Lines - Load line with fresh water
15:17	4,810.00		0.1	0.1	0.5	Start Pressure Test - Test line to 4810 PSI
15:22	522.00		38	38	5.2	Pump Preflush - Pump MAG Sweep H+MAG Clean 1 @ 11 PPG
15:29	304.00		19	19	3.7	Pump Preflush - Pump MAG Sweep H @ 11.5 PPG
15:34	304.00		19	19	3.7	Pump Scavenger - Pump scavenger @ 12.0 PPG /1.93 Y
15:38	0.00					Drop Plug - DROP 2ND BOTTOM PLUG ON THE FLY
15:39	455.00		282.6	282.6	5.2	Pump Slurry - Batch/ Weight/ Pump 1037 sks / 282.6 BBLS of lead @ 12.9 PPG / Y 1.53/ MW 7.72. CALCULATED TOP OF LEAD@ 1355'.
16:32	764.00		367.9	367.9	6.8	Pump Slurry - Weight/ Pump 1890 sks/ 454.4 BBLS of tail cement @ 13.7 PPG/ Y 1.35/ MW 6.49. CALCULATED TOP OF TAIL @ 7624'
17:32	0.00					Stop Pumping - Finished pumping cement
17:35	250.00		20		5.0	Pump Out Treating Lines - Wash pumps and lines
17:47	0.00					Drop Plug - Drop top plug verified by tool hand
17:50	2,990.00		330	330	10.0	Displace - Pump fresh displacement/ First 10 BBLS with 100 # sugar. Remaining with Biocide
18:22	2,350.00		17	17	5.0	Decrease Rate - Slow rate to 5 BPM
18:28	2,808.00		347	347	0	Bump Plug - BUMP P;UG WITH 500 OVER FINAL CIRCULATING PRESSURE
18:32	3,890.00		2	2	2	BURST DISC AND PUMP 5 BBLS WET SHOE
18:33	1,560.00		0	0	0	Stop Pumping - Shutdown. GOT ALL PREFLUSH AND 15 BBLS OF SCAVENGER BACK TO SURFACE
18:35	0.00		0	0	0	Check Floats -
18:50	0.00		0	0	0	Rig Out
20:30	0.00		0	0	0	Leave Location