

CHEVRON - MID-CONTINENT EBIZ
11111 S WILCREST DR - DO NOT MAIL
HOUSTON, Texas

Emerald 94X

H&P 304: 432-238-4515

Post Job Summary

Cement Production Casing

Prepared for: Ted Groff
Date Prepared: June 15, 2011
Version: 1

Service Supervisor: ASHBY, ANDREW

Submitted by: Joshua Anglin

HALLIBURTON

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Wellbore Geometry

Job Tubulars					MD		TVD		Excess	Shoe Joint Length
Type	Description	Size in	ID in	Wt lbm/ft	Top ft	Bottom ft	Top ft	Bottom ft	%	ft
Casing	Surface Casing	9.63	8.921	36.00	0.00	2,000.00				40.00
Open Hole Section	8-3/4" Hole		8.750		2,000.00	6,286.00			100.00	
Casing	Production Casing	7.00	6.366	23.00	0.00	6,286.00				40.00

Pumping Schedule

Stage /Plug #	Fluid #	Fluid Type	Fluid Name	Surface Density lbm/gal	Avg Rate bbl/min	Surface Volume	Downhole Volume
1	1	Spacer	Tuned Spacer III	10.50	0.00	30.0 bbl	30.0 bbl
1	2	Cement Slurry	Tuned Light	11.00		550.0 sacks	550.0 sacks
1	3	Cement Slurry	Tuned Light	11.70		350.0 sacks	350.0 sacks
1	4	Spacer	Displacement	8.30	0.00	250.0 bbl	250.0 bbl

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Fluids Pumped

Stage/Plug # 1 Fluid 1: Tuned Spacer III
TUNED SPACER III - SBM (483826)
88.7 lbm/bbl Barite

Fluid Density: 10.50 lbm/gal
Fluid Volume: 30.00 bbl
Pump Rate: 0.00 bbl/min

Stage/Plug # 1 Fluid 2: Tuned Light
TUNED LIGHT (TM) SYSTEM
0.2 lbm HR-800
0.25 lbm Poly-E-Flake

Fluid Weight: 11.00 lbm/gal
Slurry Yield: 2.20 ft³/sack
Total Mixing Fluid: 9.48 Gal
Surface Volume: 550.0 sacks
Sacks: 550.0 sacks
Calculated Fill: 4,750.00 ft
Calculated Top of Fluid: 0.00 ft
Estimated Top of Fluid:

Stage/Plug # 1 Fluid 3: Tuned Light
TUNED LIGHT (TM) SYSTEM
0.4 lbm HR-800
0.3 lbm D-AIR 3000
0.25 lbm Poly-E-Flake

Fluid Weight: 11.70 lbm/gal
Slurry Yield: 1.72 ft³/sack
Total Mixing Fluid: 5.93 Gal
Surface Volume: 350.0 sacks
Sacks: 350.0 sacks
Calculated Fill: 1,536.00 ft
Calculated Top of Fluid: 4,750.00 ft
Estimated Top of Fluid:

Stage/Plug # 1 Fluid 4: Displacement
DUMMY MUD / FLUSH / SPACER SBC MATERIAL

Fluid Density: 8.30 lbm/gal
Fluid Volume: 250.00 bbl
Pump Rate: 0.00 bbl/min

Job Summary

Job Information

Job Start Date	6/13/2011 12:30:00 PM
Job MD	6,433.2 ft
Job TVD	6,433.2 ft
Height of Plug Container/Swage Above Rig Floor	5.0 ft
Surface Temperature at Time of Job	72 degF
Time Circulated before job	3.00 hour(s)
Rate at Which Well was Circulated	6.700 bbl/min
Pipe Movement During Hole Circulation	None
Time From End Mud Circ. to Job Start	30.00 minute
Pipe Movement During Cementing	None
Calculated Displacement	250.00 bbl
Amount of Cement Returns	90.00 bbl
Job Displaced by (rig/halco)	Cement Unit HP Pumps
Annular flow Before Job? (Water/Gas)	Unknown
Annular flow After Job? (Water/Gas)	Unknown

Cementing Equipment

Pipe Centralization	Unknown
Did Float Equipment Hold?	Yes
Plug set used?	Unknown
Brand of Plug set used?	Halliburton
Did Plugs Bump?	Unknown
Calculated Pressure to Bump Plugs	963.0 psig
Did Stage Cementing Tool Open Properly?	Unknown

Service Supervisor Reports

Job Log

Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pump	Pressure (psig)	Comments
06/13/2011 01:00		Call Out					Crew Called out for Job. Plug Container# D1269
06/13/2011 02:50		Pre-Convoy Safety Meeting					Met w/crew to discuss safety and hazards of travel to location
06/13/2011 03:00		Depart from Service Center or Other Site					Entered into Journey Management.
06/13/2011 03:36		Other					Increase Rate
06/13/2011 04:15		Arrive At Loc					Ended Journey Management. [Casing being ran (17 jts left)]
06/13/2011 04:20		Assessment Of Location Safety Meeting					Met w/crew to discuss hazards of site, location of materials and safety precautions.
06/13/2011 04:30		Other					Spot Equipment
06/13/2011 04:50		Pre-Rig Up Safety Meeting					Met w/crew to discuss the best way to rig up, safety and hazards involved.
06/13/2011 05:00		Rig-Up Equipment					Rig up Ground & Standpipe
06/13/2011 09:30		Other					On bottom, Circulating Bottoms Up (circ @ 6.7 bpm) Very little losses & No gas
06/13/2011 12:00		Pre-Job Safety Meeting					Met w/Rig Crew, Co. Rep, and our crew to discuss job procedres, contingencies, and safety measures.
06/13/2011 12:15		Rig-Up Equipment					Rig-up the rig floor.
06/13/2011 12:35		Other	2	3		200.0	Fill Lines w/Fresh Water
06/13/2011 12:37		Test Lines				5431.0	Pressure Test (5000 psi) - Lost 133 psi over 3 min
06/13/2011 12:42		Pump Spacer	5	30		418.0	26 sks Tuned Spacer @ 10.5 ppg, 6.48 cuft/sk, 43.49 gps

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Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pump		Pressure (psig)	Comments
06/13/2011 12:48		Drop Bottom Plug						Shutdown & Drop Bottom Plug
06/13/2011 12:51		Pump Lead Cement	5	219			376.0	560 sks Tuned Light Lead Cement @ 11.0 lb/gal, 2.20 cuft/sk, 9.48 gal/sk
06/13/2011 13:12		Shutdown						Shutdown to check cement
06/13/2011 13:24		Other	4				65.0	Resume Pumping
06/13/2011 13:25		Other						Tub powdered off - not getting water. Cleared water line and cleaned up tub.
06/13/2011 13:27		Pump Tail Cement	3.5	107			6.0	350 sks Tuned Light Tail Cement @ 11.7 lb/gal, 1.72 cuft/sk, 5.92 gal/sk
06/13/2011 13:30		Other						Tub powdered off again - shut down to fix it.
06/13/2011 13:33		Other	4				82.0	Tub cleared - resume pumping
06/13/2011 13:38		Other						Tub powder off again - shutdown to clear it.
06/13/2011 13:42		Other	5.5				213.0	Resume pumping tail cement
06/13/2011 14:17		Shutdown						(Stroke counter = 227 bbls) Shutdown / Drop Top Plug
06/13/2011 14:21		Clean Lines						Wash pump & lines to the pit
06/13/2011 14:22		Pump Displacement	8	250			268.0	Displacement = Brine Water
06/13/2011 14:26		Displ Reached Cmmt	8				263.0	Displacement reached Cement
06/13/2011 14:35		Slow Rate	7				1155.0	Slow rate to keep pressure down.
06/13/2011 14:40		Other						Kickouts set @ 1500 psi - pumps kicked out
06/13/2011 14:40		Other	6.5				1428.0	Reset Kickout to 2500 psi - Resume pumping
06/13/2011 14:55		Slow Rate	3				1428.0	Slow rate to bump plug.
06/13/2011 14:59		Bump Plug					2124.0	500 psi over final circulating pressure (1459 psi)
06/13/2011 15:01		Check Floats						held for 2 min, check floats, 1.5 bbls back - Floats held.

HALLIBURTON

Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pump		Pressure (psig)		Comments
06/13/2011 15:02		End Job							Job Complete - Full returns during job, 30 bbls spacer & 90 bbls cement back to surface.
06/13/2011 15:15		Post-Job Safety Meeting (Pre Rig-Down)							Met w/crew to discuss rigging down safely.
06/13/2011 16:00		Rig-Down Equipment							Rig everything down.
06/13/2011 17:45		Pre-Convoy Safety Meeting							Met w/crew to discuss fit-for-duty, safety and hazards of travel back.
06/13/2011 18:30		Depart Location for Service Center or Other Site							Entered into Journey Management.
06/13/2011 18:30		Other							Thanks for using Halliburton!!!

The Road to Excellence Starts with Safety

Sold To #: 338668		Ship To #: 2857522		Quote #:		Sales Order #: 8232644	
Customer: CHEVRON - MID-CONTINENT EBIZ				Customer Rep: Kavander, Chad			
Well Name: Emerald			Well #: 94X			API/UWI #: 05-103-11855	
Field: RANGELY WEBER SAND UNIT		City (SAP): RANGELY		County/Parish: Rio Blanco		State: Colorado	
Legal Description: Section 26 Township 2N Range 103W							
Lat: N 40.11 deg. OR N 40 deg. 6 min. 36.659 secs.				Long: W 108.918 deg. OR W -109 deg. 4 min. 55.261 secs.			
Contractor: H&P			Rig/Platform Name/Num: 304 432-238-4515				
Job Purpose: Cement Production Casing							
Well Type: Development Well			Job Type: Cement Production Casing				
Sales Person: GROFF, THEODORE			Srvc Supervisor: ASHBY, ANDREW			MBU ID Emp #: 450544	

Job Personnel

HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #
ASHBY, ANDREW A		450544	ESTEP, KENNETH		214387	THOMAS, STEPHEN Troy		490352
WILKISON, KEVIN Diverne		491065						

Equipment

HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way
10994445	45 mile	11127525	45 mile	11128406	45 mile	11189139	45 mile
11410666	45 mile	11526494	45 mile				

Job Hours

Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours

TOTAL		Total is the sum of each column separately
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Job**Job Times**

Formation Name					Called Out	Date	Time	Time Zone
Formation Depth (MD)	Top		Bottom		On Location	13 - Jun - 2011	01:00	MST
Form Type		BHST			Job Started	13 - Jun - 2011	04:30	MST
Job depth MD	6433.2 ft	Job Depth TVD	6433.2 ft		Job Completed	13 - Jun - 2011	12:30	MST
Water Depth		Wk Ht Above Floor	5. ft		Job Completed	13 - Jun - 2011	15:00	MST
Perforation Depth (MD)	From		To		Departed Loc	13 - Jun - 2011	18:30	MST

Well Data

Description	New / Used	Max pressure psig	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
8-3/4" Hole				8.75				2000.	6286.		
Production Casing	New		7.	6.366	23.		K-55	.	6286.		
Surface Casing	New		9.625	8.921	36.		H-40	.	2000.		

Sales/Rental/3rd Party (HES)

Description	Qty	Qty uom	Depth	Supplier
PLUG,CMTG,TOP,7,HWE,5.66 MIN/6.54 MAX CS	1	EA		
PLUG,CMTG,BOT,7,HWE,5.66 MIN/6.54 MAX CS	1	EA		
SUGAR - GRANULATED	20	LB		

Tools and Accessories													
Type	Size	Qty	Make	Depth	Type	Size	Qty	Make	Depth	Type	Size	Qty	Make
Guide Shoe					Packer					Top Plug			
Float Shoe					Bridge Plug					Bottom Plug			
Float Collar					Retainer					SSR plug set			
Insert Float										Plug Container			
Stage Tool										Centralizers			
Miscellaneous Materials													
Gelling Agt			Conc		Surfactant			Conc		Acid Type		Qty	Conc %
Treatment Fld			Conc		Inhibitor			Conc		Sand Type		Size	Qty
Fluid Data													
Stage/Plug #: 1													
Fluid #	Stage Type	Fluid Name			Qty	Qty uom	Mixing Density lbm/gal	Yield ft ³ /sk	Mix Fluid Gal/sk	Rate bbl/min	Total Mix Fluid Gal/sk		
1	Tuned Spacer III	TUNED SPACER III - SBM (483826)			30.00	bbl	10.5	.0	.0	.0			
	37.58 gal/bbl	FRESH WATER											
	88.7 lbm/bbl	BARITE, BULK (100003681)											
2	Tuned Light	TUNED LIGHT (TM) SYSTEM (452984)			550.0	sacks	11.	2.2	9.48		9.48		
	0.2 lbm	HR-800, 50 LB SACK (101619742)											
	0.25 lbm	POLY-E-FLAKE (101216940)											
	9.48 Gal	FRESH WATER											
3	Tuned Light	TUNED LIGHT (TM) SYSTEM (452984)			350.0	sacks	11.7	1.72	5.93		5.93		
	0.4 lbm	HR-800, 50 LB SACK (101619742)											
	0.3 lbm	D-AIR 3000 (101007446)											
	5.93 Gal	FRESH WATER											
	0.25 lbm	POLY-E-FLAKE (101216940)											
4	Displacement				250.00	bbl	8.3	.0	.0	.0			
Calculated Values		Pressures		Volumes									
Displacement		Shut In: Instant			Lost Returns			Cement Slurry			Pad		
Top Of Cement		5 Min			Cement Returns			Actual Displacement			Treatment		
Frac Gradient		15 Min			Spacers			Load and Breakdown			Total Job		
Rates													
Circulating		Mixing			Displacement			Avg. Job					
Cement Left In Pipe		Amount	40 ft	Reason	Shoe Joint								
Frac Ring # 1 @		ID		Frac ring # 2 @		ID		Frac Ring # 3 @		ID		Frac Ring # 4 @	
The Information Stated Herein Is Correct					Customer Representative Signature								

Lab Data

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Cementing Rockies, Vernal

LAB RESULTS - Lead

Job Information

Request/Slurry	151633/1	Rig Name	H&P 304	Date	29/MAY/2011
Submitted By	Joshua Anglin	Job Type	Surface Casing	Bulk Plant	Vernal
Customer	Chevron	Location	Rio Blanco	Well	Emerald 94X

Well Information

Casing/Liner Size	9 5/8"	Depth MD	2000 ft	BHST	106 F
Hole Size	12 1/4"	Depth TVD	0 ft	BHCT	90 F

Drilling Fluid Information

Mud Company	Type	Density	PV/YP
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Cement Information - Lead Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
		Tuned Light				Slurry Density	11.00	PPG
92.55	%	> Holcim Type III	Bulk	May 30, 2011		Slurry Yield	2.88	ft3/sk
13	%	> Spherelite TEST	Bulk	May 30, 2011		Water Requirement	15.68	GPS
100.00	% BWOC	Cement Blend						
3.000	lb/sk	Cal-Seal 60	Bulk	May 30, 2011				
3.000	lb/sk	Econolite (Powder - PB)	Bulk	May 30, 2011	010111			
0.200	lb/sk	D-Air 3000	Bulk	May 30, 2011	2011056 AC	Water Source	Field (Fresh) Water	
15.68	gal/sack	Field (Fresh) Water	Lab	Jul 22, 2010	7/22/2010	Water Chloride	N/A	ppm
0.125	lb/sk	Pol-E-Flake	Bulk	May 30, 2011				

Operation Test Results Request ID 151633/1

UCA Comp. Strength, Request Test ID:1523291, Historical Data

End Temp (°F)	Pressure (psi)	50 psi (hh:mm)	500 psi (hh:mm)	12 hr CS (psi)	24 hr CS (psi)	48 hr CS (psi)	End CS (psi)	End Time (hrs)
106	800	04:05	46:08	313	414	505	563	72

Thickening Time, Request Test ID:1523290, Historical Data

Temp (°F)	Pressure (psi)	Reached in (min)	Start BC	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)
90	1,200	17	6	06:41	09:23	10:39	13:08

Mixability (0 - 5) - 0 is not mixable, Request Test ID:1523292, Historical Data

Mixability rating (0 - 5)

5

Marsh Funnel, Request Test ID:1523294, Historical Data

Volume [ml]	Time [Sec]	Foam Quality
250	15	0

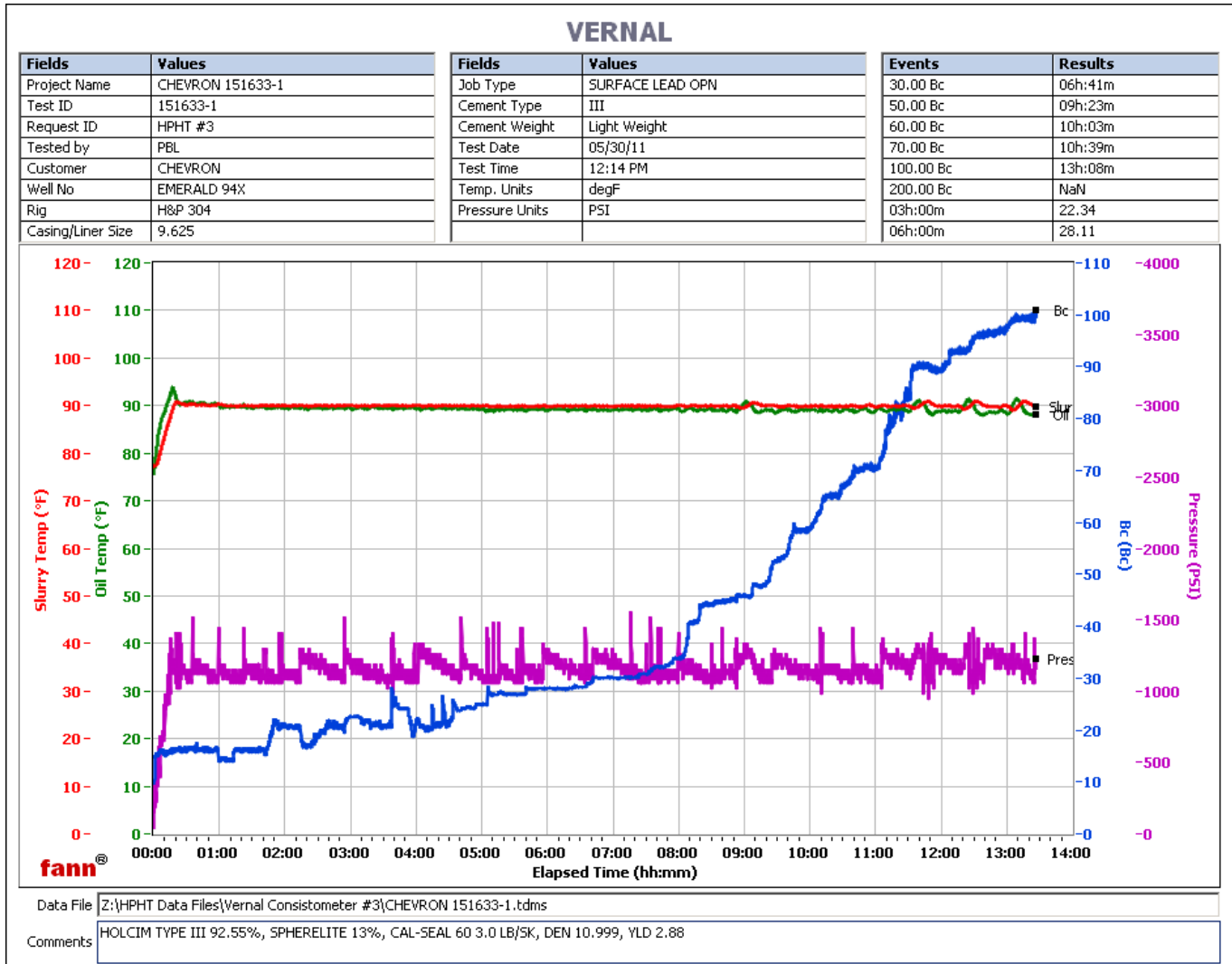
Free fluid API 10B-2 / ISO 10426-2, Request Test ID:1523295, Historical Data

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Con. Temp (F)	Cond. Time (min)	Static time (min)	Incl. (deg)	% Fluid	SG top
90	20	120	90	1.2	3

FYSA Viscosity Profile & Gel Strength, Request Test ID:1523293, Historical Data

Test Temp (°F)	600	300	200	100	60	30	6	3	Conditioning time
90	199	12	8	6	6	5	4	4	20



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Cementing Rockies, Vernal

LAB RESULTS - Tail

Job Information

Request/Slurry	153660/1	Rig Name	H&P 304	Date	07/JUN/2011
Submitted By	Isaac Whorl	Job Type	Production Casing	Bulk Plant	Vernal
Customer	Chevron	Location	Rio Blanco	Well	Emerald 94X

Well Information

Casing/Liner Size	7"	Depth MD	6286 ft	BHST	155 F
Hole Size	8 3/4"	Depth TVD	0 ft	BHCT	109 F

Drilling Fluid Information

Mud Company	Type	Density	PV/YP
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Cement Information - Tail Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
		Tuned Light				Slurry Density	11.70	PPG
71.28	%	> Mountain G				Slurry Yield	1.72	ft3/sk
12	%	> Silicalite - Compacted				Water Requirement	5.93	GPS
21	%	> Spherelite TEST						
100.00	% BWOC	Cement Blend						
0.300	lb/sk	D-Air 3000						
0.300	lb/sk	HALAD-322				Water Source	Fresh Water	
0.250	lb/sk	CFR-3				Water Chloride	N/A	ppm
0.400	lb/sk	HR-800						
0.250	lb/sk	Pol-E-Flake						
5.93	gal/sack	Fresh Water						

Operation Test Results Request ID 153660/1

UCA Comp. Strength, Request Test ID:1542246, Historical Data

End Temp (°F)	Pressure (psi)	50 psi (hh:mm)	500 psi (hh:mm)	12 hr CS (psi)	24 hr CS (psi)	Crush CS (psi)
155	3,000	03:43	04:53	2,289	3,281	3,052

Thickening Time, Request Test ID:1542217, Historical Data

Temp (°F)	Pressure (psi)	Reached in (min)	Start BC	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)
109	3,700	34	27	01:50	02:40	02:51	03:00

Mixability (0 - 5) - 0 is not mixable, Request Test ID:1542218, Historical Data

Mixability rating (0 - 5)

5

Marsh Funnel, Request Test ID:1542245, Historical Data

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Volume [ml]

250

Time [Sec]

36

Foam Quality

0

Free Water, Request Test ID:1542244, Historical Data

Test Temp (°F)

109

% FW Vert

0

Conditioning time

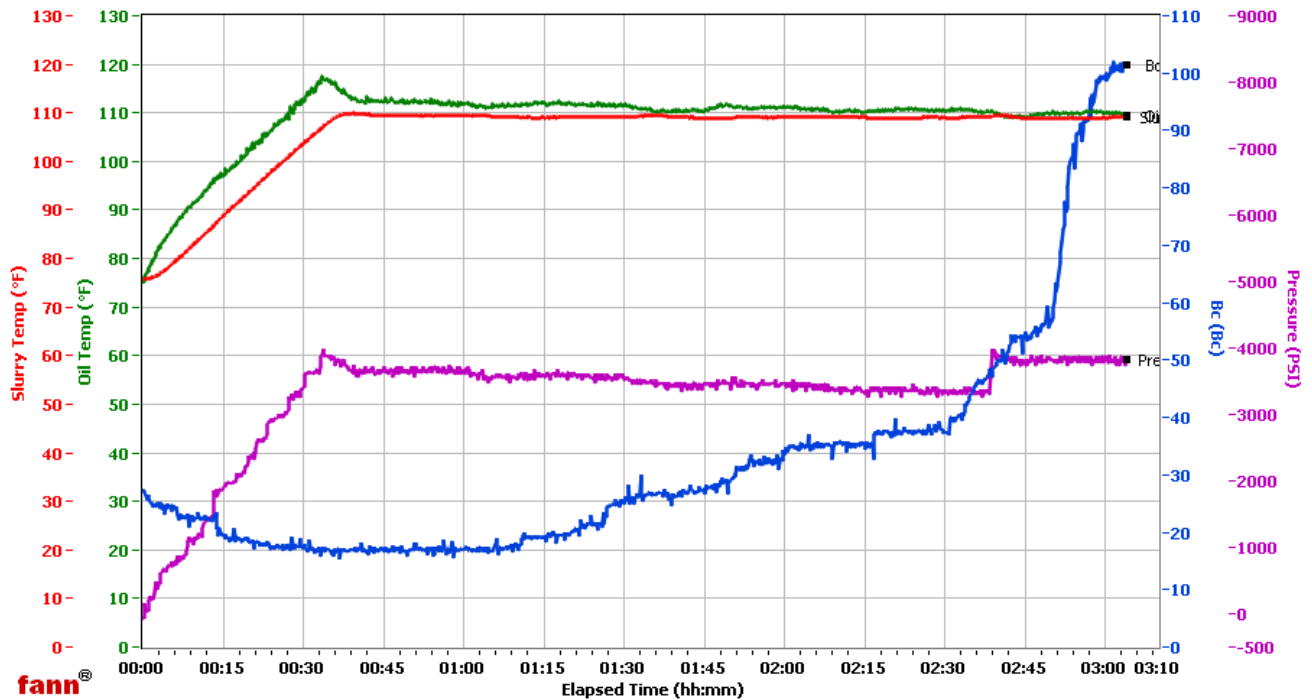
20

Vernal

Fields	Values
Project Name	Chevron 153660-1
Test ID	153660-1
Request ID	HPHT #4
Tested by	D.O.
Customer	Chevron
Well No	Emerald 94X
Rig	H7P 304
Casing/Liner Size	8.75

Fields	Values
Job Type	pro tail
Cement Type	G
Cement Weight	Light Weight
Test Date	06/08/11
Test Time	08:57 PM
Temp. Units	degF
Pressure Units	PSI

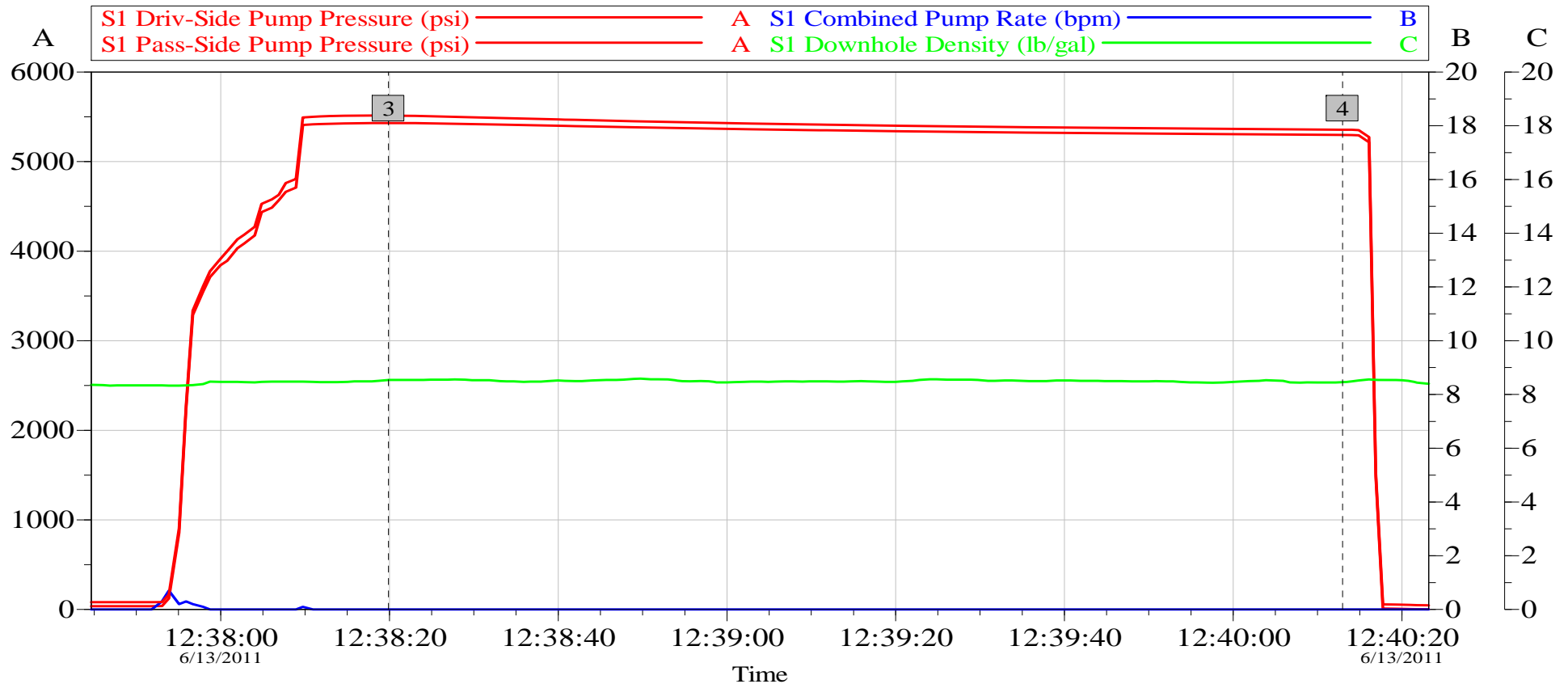
Events	Results
30.00 Bc	01h:50m
50.00 Bc	02h:40m
60.00 Bc	02h:50m
70.00 Bc	02h:51m
100.00 Bc	03h:00m
200.00 Bc	NaN
03h:00m	99.49
06h:00m	NaN



Data File Z:\HPHT Data Files\Vernal Consistometer #4\Chevron 153660-1.tdms

Comments 71.28 g, .4% HR-800, 11 den, 1.72 yd.

Chevron - Emerald-94X 7" Production - Pressure Test

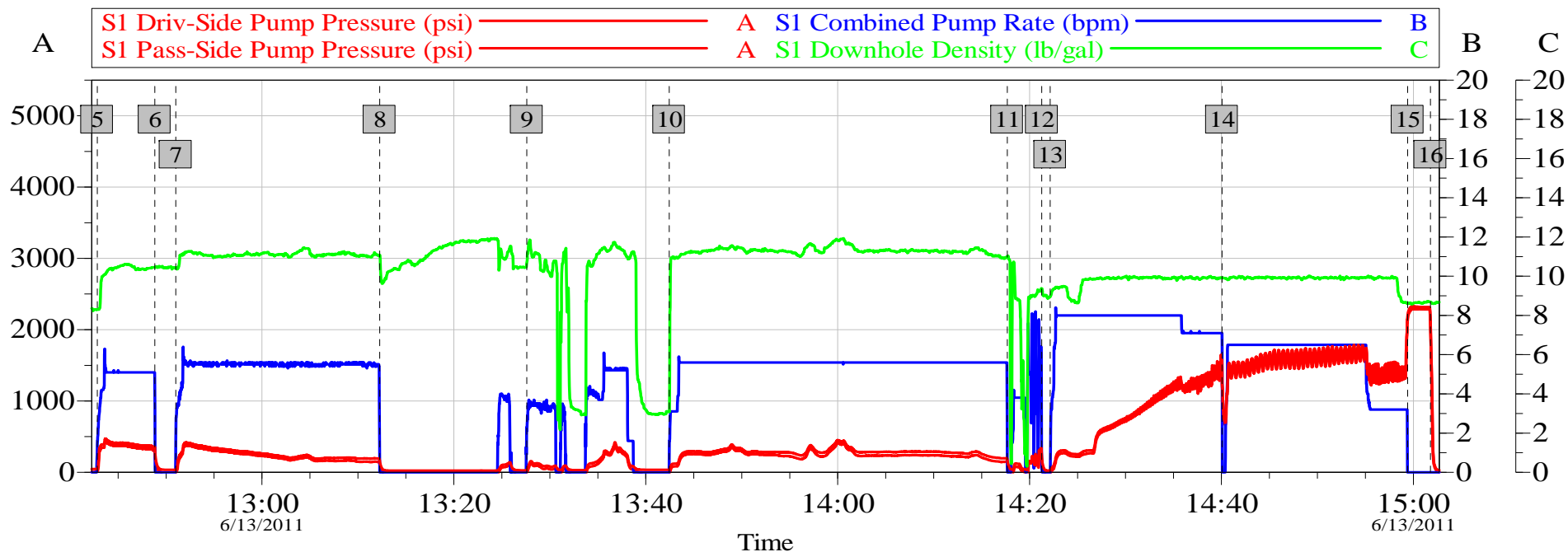


Global Event Log					
Intersection		PSI	RATE	Intersection	
3	Start Pressure Test	12:38:20	5431 0.000	4	End Pressure Test
					12:40:13 5298 0.000

Customer: Chevron	Job Date: 13-Jun-2011	Sales Order #: 8232644
Well Description: Emerald-94X	UWI: 05-103-11855	

OptiCem v6.4.9
13-Jun-11 17:11

Chevron - Emerald-94X 7" Production



Global Event Log

Intersection			PSI	RATE	Intersection			PSI	RATE
5	Pump Tuned Spacer	12:42:50	9.107	1.221	6	Shutdown / Drop Plug	12:48:49	298.0	4.316
7	Pump Lead Cement	12:51:01	-5.000	1.319	8	Shutdown	13:12:15	119.8	0.592
9	Pump Tail Cement	13:27:36	0.983	2.102	10	Resume Pumping Tail Cement	13:42:26	-3.000	0.737
11	Shutdown / Drop Plug	14:17:40	129.5	1.035	12	Wash pump & lines	14:21:17	176.2	0.193
13	Pump Displacement	14:22:09	-9.000	0.000	14	pumps kicked out	14:40:04	1463	7.035
15	Bump Plug	14:59:24	2124	0.000	16	Check Floats	15:01:46	2105	0.000

Customer: Chevron
Well Description: Emerald-94X

Job Date: 13-Jun-2011
UWI: 05-103-11855

Sales Order #: 8232644

OptiCem v6.4.9
13-Jun-11 18:25