

EXXONMOBIL CORPORATION
HOUSTON, Texas

PCU 296-5A5

H&P 321

Post Job Summary

Cement Intermediate Casing

Date Prepared: November 18, 2010
Version: 1

Service Supervisor: Andrew Ashby
Submitted by: Simukayi Mutasa

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Wellbore Geometry

Job Tubulars					MD		TVD		Excess %	Shoe Joint Length ft
Type	Description	Size in	ID in	Wt lbm/ft	Top ft	Bottom ft	Top ft	Bottom ft		
Casing	Surface Casing	10.75	9.950	45.50	0.00	4,645.00	0.00	4,552.00		80.00
Open Hole Section	Intermediate Open Hole		9.875		4,645.00	9,964.00	4,552.00	9,852.00	100.00	
Casing	Intermediate Casing	7.00	6.276	26.00	0.00	9,954.00	0.00	9,842.00		94.90

Pumping Schedule

Fluid #	Fluid Type	Fluid Name	Surface Density lbm/gal	Avg Rate bbl/min	Surface Volume
1	Spacer	TUNED SPACER III	10.00	6.00	80.0 barrels
2	Cement Slurry	New Vernal Tuned Light	11.00	6.00	1370.0 sacks
3	Spacer	Mud	9.35	0.00	377.0 barrels

Fluids Pumped

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

Fluid Density: 10.00 lbm/gal
 Pump Rate: 6.00 bbl/min

Stage/Plug # 1 Fluid 2: New Vernal Tuned Light
 TUNED LIGHT (TM) SYSTEM
 0.75 lbm HR-601

Fluid Weight: 11.00 lbm/gal
 Slurry Yield: 2.25 ft³/sack
 Total Mixing Fluid: 10.04 Gal
 Surface Volume: 1370.0 sacks
 Sacks: 1370.0 sacks
 Calculated Fill: 5,748.00 ft
 Calculated Top of Fluid: 4,144.00 ft
 Pump Rate: 6.00 bbl/min

Stage/Plug # 1 Fluid 3: Mud
 Displacement Mud

Fluid Density: 9.35 lbm/gal
 Fluid Volume: 377.00 bbl

Job Summary

Job Information

Job Start Date	11/16/2010
Job MD	9,954.0 ft
Job TVD	9,842.0 ft
Height of Plug Container/Swage Above Rig Floor	5.0 ft
Surface Temperature at Time of Job	28 degF
Mud Type	Water Based Mud
Name of Mud Company	BAROID
Actual Mud Density	9.35 lbm/gal
Mud PV	16.0 cp
Mud YP	24.0 lbf/100ft ²
Mud loss while running Casing	14,500.00 bbl
Time Circulated before job	1.50 hour(s)
Mud Volume Circulated	720.00 bbl
Rate at Which Well was Circulated	8.000 bbl/min
Pipe Movement During Hole Circulation	Reciprocated
Time From End Mud Circ. to Job Start	8.00 minute
Mud loss during Cement Job	450.00 bbl
Pipe Movement During Cementing	Reciprocated
Calculated Displacement	377.70 bbl
Job Displaced by (rig/halco)	Cement Unit HP Pumps
Annular flow After Job? (Water/Gas)	No
Length of Rat Hole	10.00 ft

Cementing Equipment

Number of Centralizers Used	55
Pipe Centralization	Through Entire Cement Column
Did Float Equipment Hold?	Yes
Plug set used?	Yes
Brand of Plug set used?	Weatherford GEMOCO
Did Plugs Bump?	Yes
Calculated Pressure to Bump Plugs	1,125.0 psig

Service Supervisor Reports

Job Log

Date/Time	Activity Code	Pump Rate	Cum Vol	Pressure (psig)	Comments
11/15/2010 10:45	Call Out				Crew Called out for Job. Plug Container# D1263
11/15/2010 13:00	Pre-Convoy Safety Meeting				Met w/crew to discuss safety and hazards of travel to location
11/15/2010 13:30	Depart from Service Center or Other Site				Entered into Journey Management.
11/15/2010 18:45	Arrive At Loc				Ended Journey Management. [Casing being ran (50 jts left)]
11/15/2010 18:50	Assessment Of Location Safety Meeting				Met w/crew to discuss hazards of site, location of materials and safety precautions.
11/15/2010 18:55	Other				Spot Equipment
11/15/2010 19:15	Pre-Rig Up Safety Meeting				Met w/crew to discuss the best way to rig up, safety and hazards involved.
11/15/2010 19:20	Rig-Up Equipment				Rig up Ground & Standpipe
11/15/2010 22:30	Wait on Customer or Customer Sub-Contractor Equip				Rigged up as far as safe, waiting for rig to finish casing
11/18/2010 01:10	Casing on Bottom				
11/18/2010 01:37	Other				Rig Down CRT
11/18/2010 01:40	Rig-Up Equipment				Rig-up the rig floor.
11/18/2010 03:00	Pre-Job Safety Meeting				Met w/Rig Crew, Co. Rep, and our crew to discuss job procedres, contingencies, and safety measures.
11/18/2010 03:09	Other				Fill Lines
11/18/2010 03:22	Test Lines				Low Pressure Test (383 psi) - Passed, lost 14 psi in 3 minutes
11/18/2010 03:27	Test Lines				High Pressure Test (5300 psi) - Passed, lost 89 psi in 5 minutes
11/18/2010 03:36	Pump Spacer				80 barrels Tuned spacer @ 10.0 ppg, 6.07 cuft/sk, 41.43 gps. Calculated water requirement: 73 barrels.93 barrels mix water used, 106 barrels Tuned Spacer pumped
11/18/2010 03:59	Drop Bottom Plug				Shutdown & Drop Bottom Plug
11/18/2010 04:02	Pump Cement	5	540	435.0	1370 sks Tuned Light Cement @ 11.0 ppg, 2.21 cuft/sk, 9.67 gps, Design: 540 barrels, 315 barrels mix water, actual: 569 barrels, 335 barrels mix water (1446 sacks), 210 barrels mud lost to this point.
11/18/2010 04:40	Other				Mud scale reading 11.0 lb/gal, downhole densometer reading 10.70 lb/gal
11/18/2010 04:47	Other				Mud scale reading 11.3 lb/gal, downhole densometer reading 10.83 lb/gal
11/18/2010 05:25	Slow Rate	2.5	370	275.0	Returns slowed, reduce rate to 2.5 bpm as per co. man
11/18/2010 05:32	Other	5	405	445.0	Increased rate back up to 5 bpm
11/18/2010 05:40	Other				Mud scale reading 10.9 lb/gal, downhole densometer reading 10.68 lb/gal
11/18/2010 06:08	Shutdown				Shutdown / Drop Top Plug / Wash pump & lines to the pit
11/18/2010 06:14	Pump Displacement	8	377	435.0	Pump 377 barrels water based mud displacement

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Date/Time	Activity Code	Pump Rate	Cum Vol	Pressure (psig)	Comments
11/18/2010 07:03	Slow Rate	2	358	745.0	Slow displacement rate to 2 bpm as per co. man.
11/18/2010 07:13	Bump Plug	2	376.14	617.0	Bump plugs after 376.14 barrels displacement gone at 617 psi
11/18/2010 07:22	Check Floats		376	1178.0	Floats held - 2 barrels back
11/18/2010 07:25	End Job				Job Complete
11/18/2010 07:30	Post-Job Safety Meeting (Pre Rig-Down)				Met w/crew to discuss rigging down safely.
11/18/2010 07:45	Rig-Down Equipment				Rlg everything down.
11/18/2010 09:20	Pre-Convoy Safety Meeting				Met w/crew to discuss fit-for-duty, safety and hazards of travel back.
11/18/2010 09:30	Depart Location for Service Center or Other Site				Entered into Journey Management.
11/18/2010 09:30	Other				Thanks for using Halliburton!!!

The Road to Excellence Starts with Safety

Sold To #: 331699	Ship To #: 2753381	Quote #:	Sales Order #: 7773431
Customer: EXXONMOBIL CORPORATION		Customer Rep: McClain, Eric	
Well Name: PCU		Well #: 296-5A5	API/UWI #: 05103112440000
Field:	City (SAP): MEEKER	County/Parish: Rio Blanco	State: Colorado
Legal Description: Section 5 Township 2S Range 96W			
Job Purpose: Cement Intermediate Casing			
Well Type: Development Well		Job Type: Cement Intermediate Casing	
Sales Person: TURNER, JAMIE		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	63	450544	BROWN, DALLAS S.G.	43.5	479707	DUBE, M	63	476241
JENSEN, RICKY D	17.5	482815	TEICHERT, RONDO Chad	63	476071	MUTASA, SIMUKAYI Taiziveyi	63	464970
PARTRIDGE, BRENT W	63	471227	POOLE, ALAN	63	338188	SMITH, KC Hyrum	63	462378

Equipment

HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way
10948688	140 mile	10994447	140 mile	11061775	140 mile	11127525	140 mile
11189139	140 mile	11410662	140 mile	11410666	140 mile	11526496	140 mile
6325	140 mile	6325	140 mile	6573	140 mile	6573	140 mile
D1263	140 mile						

Job Hours

Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours
15 Nov 2010	5.5	0	16 Nov 2010	24	0	17 Nov 2010	24	0
18 Nov 2010	9.5	4.5						
TOTAL	63 hrs on Location & 4.5 hrs Operating			<i>Total is the sum of each column separately</i>				

Job

Formation Name	Formation Depth (MD)	Top	Bottom	Form Type	Job depth MD	Job Depth TVD	Water Depth	Perforation Depth (MD)	From	To
				BHST	9954. ft	9842. ft				
				210 degF						
							Wk Ht Above Floor			
							5. ft			
								Deparated Loc		

Job Times

Date	Time	Time Zone
15 - Nov - 2010	00:00	MST
15 - Nov - 2010	00:00	MST
18 - Nov - 2010	03:00	MST
18 - Nov - 2010	07:30	MST
18 - Nov - 2010	09:30	MST

Well Data

Description	New / Used	Max pressure psig	Size in	ID in	Weight lbf/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Intermediate Open Hole				9.875				4645.	9964.	4552.	9852.
Intermediate Casing	Unknown		7.	6.276	26.	HYDRIL - SERIES 500 TYPE 513	P-110	.	9954.	.	9842.
Surface Casing	Unknown		10.75	9.95	45.5	BTC	J-55	.	4645.	.	4552.

Tools and Accessories

Type	Size	Qty	Make	Depth	Type	Size	Qty	Make	Depth	Type	Size	Qty	Make
Guide Shoe		1			Packer		0			Top Plug	7	1	
Float Shoe		1			Bridge Plug		0			Bottom Plug	7	1	
Float Collar		1			Retainer		0			SSR plug set		0	

Summit
Version:

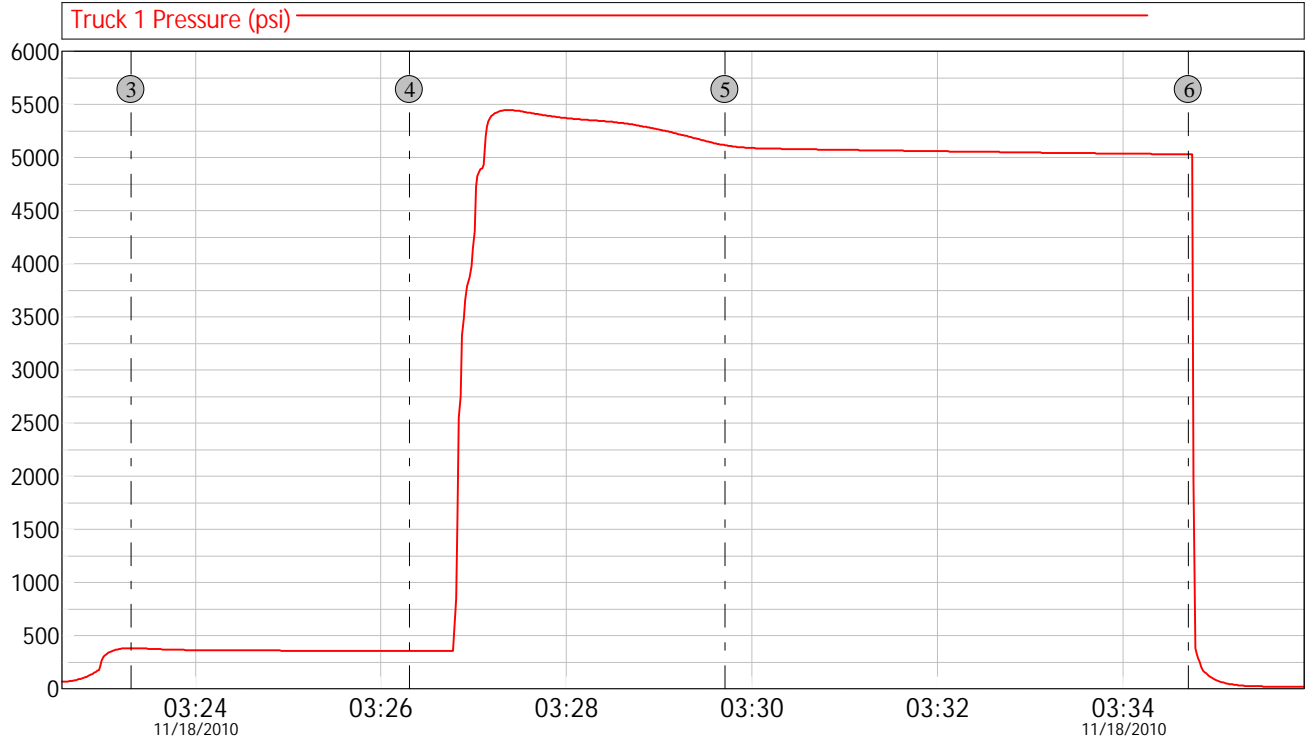
Friday, November 19, 2010 09:00:00

Insert Float		0							Plug Container	7	1	
Stage Tool		0							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)			80.00	bbl	10.	6.07	41.43	6.0		
	59.8 lbm/bbl	BARITE, 100 LB SK (100003680)										
	38.32 gal/bbl	FRESH WATER										
2	New Vernal Tuned Light	TUNED LIGHT (TM) SYSTEM (452984)			1370.0	sacks	11.	2.25	10.04	6.0	10.04	
	0.75 lbm	HR-601, 50 LB BAG (101328348)										
	10.035 Gal	FRESH WATER										
3	Mud				377.00	bbl	9.4	.0	.0	.0		
Calculated Values		Pressures			Volumes							
Displacement	377.7	Shut In: Instant			Lost Returns		Cement Slurry	540	Pad			
Top Of Cement	3884	5 Min			Cement Returns	0	Actual Displacement	376.5	Treatment			
Frac Gradient		15 Min			Spacers	80	Load and Breakdown		Total Job			
Rates												
Circulating	7.5	Mixing		5	Displacement	7	Avg. Job		6			
Cement Left In Pipe	Amount	94.9 ft	Reason	Shoe Joint								
Frac Ring # 1 @	ID	Frac ring # 2 @	ID	Frac Ring # 3 @	ID	Frac Ring # 4 @	ID					
The Information Stated Herein Is Correct					Customer Representative Signature							

Data Acquisition

ExxonMobil

PCU 296-5A5 Intermediate



③ Begin Low Pressure Test 03:23:18 383.0 ④ End Low Pressure Test 03:26:18 359.0
 ⑤ Begin High Pressure Test 03:29:42 5117 ⑥ End High Pressure Test 03:34:42 5031

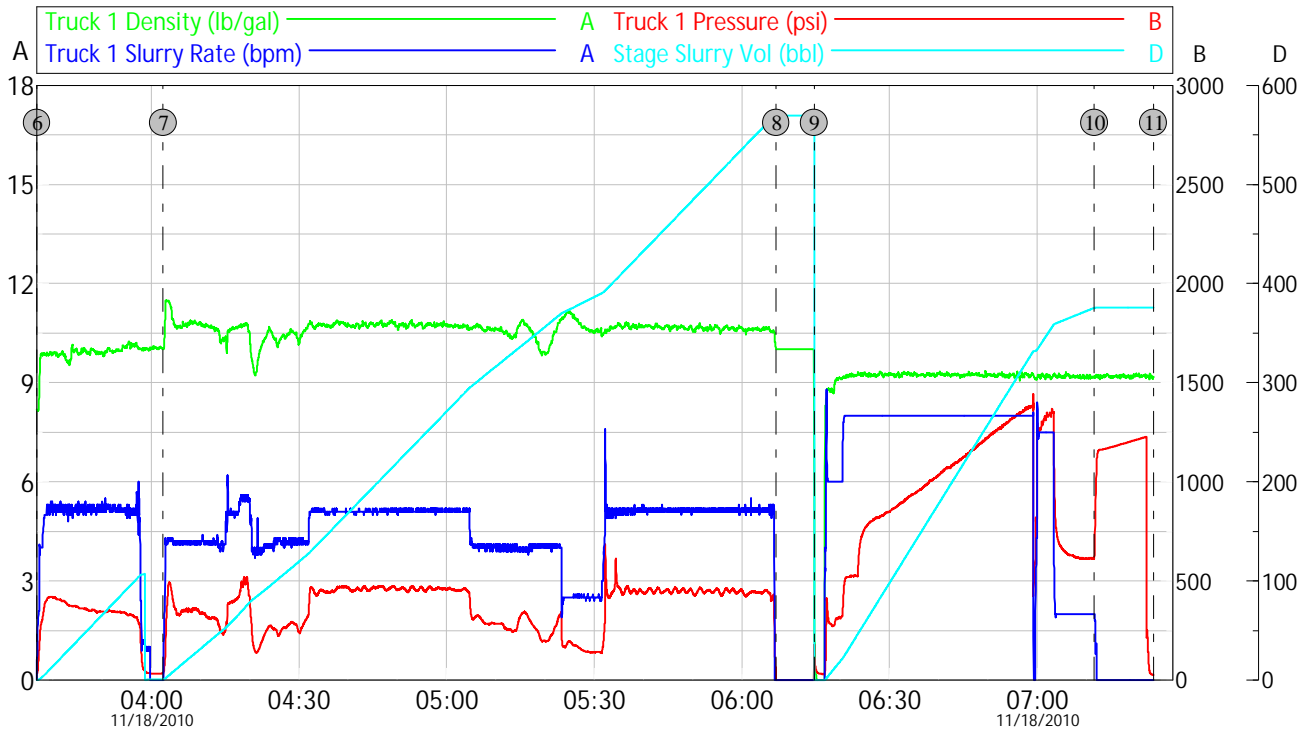
Customer: ExxonMobil	Job Date: November 18, 2010	Sales Order #: 7773429
Well Description: PCU 296-5A5	UWI: 05-103-11244	Rig: H&P 321

OptiCem v6.4.9
18-Nov-10 03:41

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ExxonMobil

PCU 296-5A5 Intermediate



⑥ 80 bbl 10# Tuned Spacer	03:36:44	35.00	⑦ 1370 sk 11# Tuned Light	04:02:24	35.00	⑧ Drop Top Plug	06:06:59	0.000
⑨ 377 bbl 9.3# WBM	06:14:42	179.1	⑩ Bump Plug	07:11:39	616.8	⑪ Floats Held	07:23:41	27.00

Customer: ExxonMobil	Job Date: November 18, 2010	Sales Order #: 7773429	OptiCem v6.4.9 18-Nov-10 07:26
Well Description: PCU 296-5A5	UWI: 05-103-11244	Rig: H&P 321	

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Lab Data

Job Information

Request/Slurry	110711	Rig Name	H&P 321	Date	November 12th 2010
Submitted By	Joshua Anglin	Job Type	Intermediate Casing	Bulk Plant	Vernal
Customer	ExxonMobil	Location	Rio Blanco	Well	PCU 296-5A5

Well Information

Casing/Liner Size	7"	Depth MD	9964 ft	BHST	210 F
Hole Size	9 7/8"	Depth TVD	9852 ft	BHCT	154 F

Drilling Fluid Information

Mud Company	Baroid	Type	WBM	Density	9.35 PPG	PV/YP	16/24
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Cement Information - Primary Design

<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		Tuned Light				Slurry Density	11.00	PPG
						Slurry Yield	2.21	FT3
						Water Requirement	9.67	GPS
100.00	% BWOC	Cement Blend						
36.88	%	> Boral Craig Pozmix	Bulk	Nov 14, 2010				
11	%	> HGS 6000 dry blended	Bulk	Nov 14, 2010				
53.19	%	> Holcim Type V	Bulk	Nov 14, 2010				
13	%	> Silicalite - Compacted	Bulk	Nov 14, 2010				
0.75	lb/sk	HR-601	Bulk	Nov 14, 2010	23HR07 X-08S3JP	Water Source	Field (Fresh) Water	
						Water Chloride	N/A	ppm
0.50	lb/sk	D-Air 3000	Bulk	Nov 14, 2010	2010L84 AC			
0.20	lb/sk	FWCA	Bulk	Nov 14, 2010	8905013 1			
80.70	L/100kg	Field (Fresh) Water	Lab	Oct 20, 2010	10/20/20 10			

Operation Test Results Request ID 110711

UCA Comp. Strength

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)
191	3,000	07:42	10:18	1,253	1,691	1,739	1,801

Thickening Time

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)
154	4,676	60	8	05:06	05:20	05:20	05:29

Mixability (0 - 5) - 0 is not mixable

Mixability rating (0 - 5)

5

Marsh Funnel

Volume [ml]	Time [Sec]	Foam Quality
250	35	0

Free Water

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Test Temp (°F)

154

% FW 45 Inc

0

API Rheology

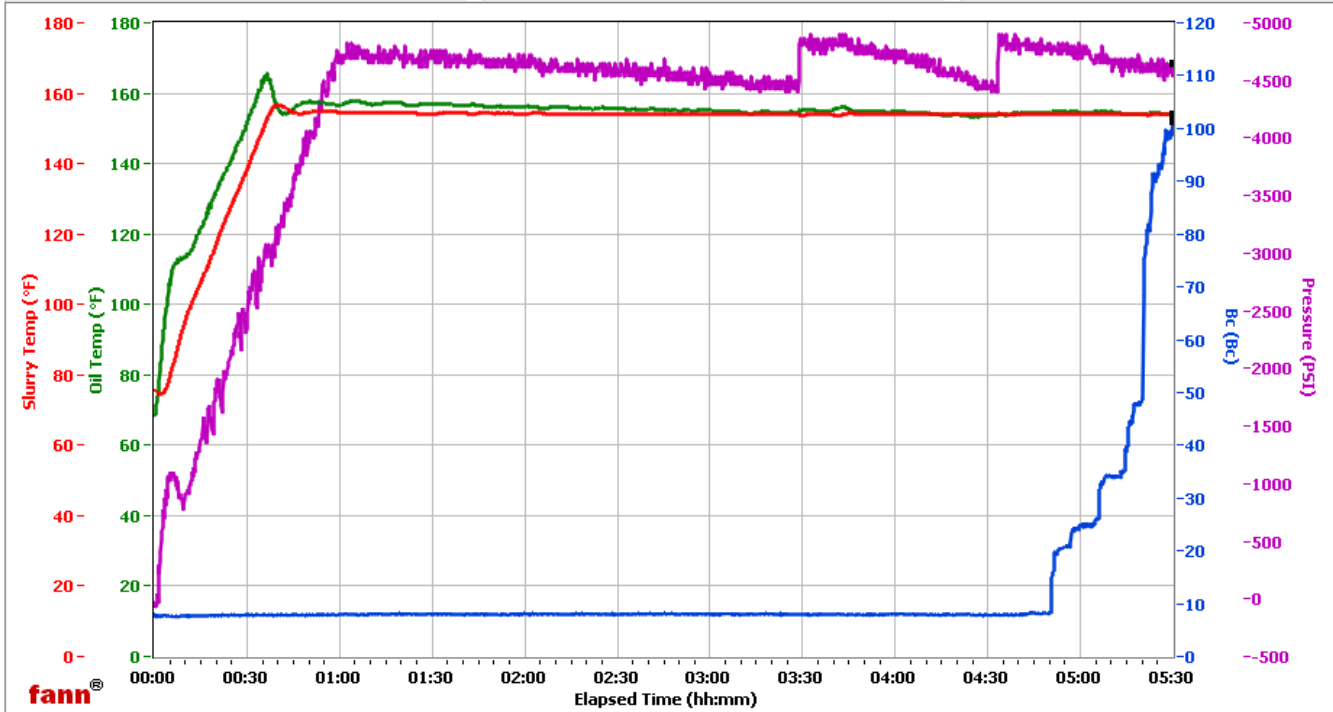
Temp (°F)	600	300	200	100	60	30	6	3	PV/YP
80	196	105	78	46	32	22	11	10	95.7 / 12.2

API Fluid Loss

Test Temp (°F)	Test Pressure (psi)	Test Time (min)	Meas. Vol (< 30 min, cc)	Extr. ISO FL (cc/30 min)
154	1,000	7.67	42	166

Vernal

Fields	Values	Fields	Values	Events	Results
Project Name	ExxonMobil 110711-1	Job Type	Intermediate Primary	30.00 Bc	05h:06m
Test ID	110711-1	Cement Type	V	50.00 Bc	05h:20m
Request ID	HPHT#5	Cement Weight	Light Weight	60.00 Bc	05h:20m
Tested by	SMR	Test Date	11/14/10	70.00 Bc	05h:20m
Customer	ExxonMobil	Test Time	09:51 PM	100.00 Bc	05h:29m
Well No	PCU 296-5A5	Temp. Units	degF	200.00 Bc	NaN
Rig	H8P 321	Pressure Units	PSI	03h:00m	7.91
Casing/Liner Size	7			06h:00m	NaN



Data File O:\HPHT Data Files\Vernal Consistometer #5\ExxonMobil 110711-1.tdms

Comments Tuned Light, 0.7 lb/sk HR-601, 11.0 Density, 2.21 Yield

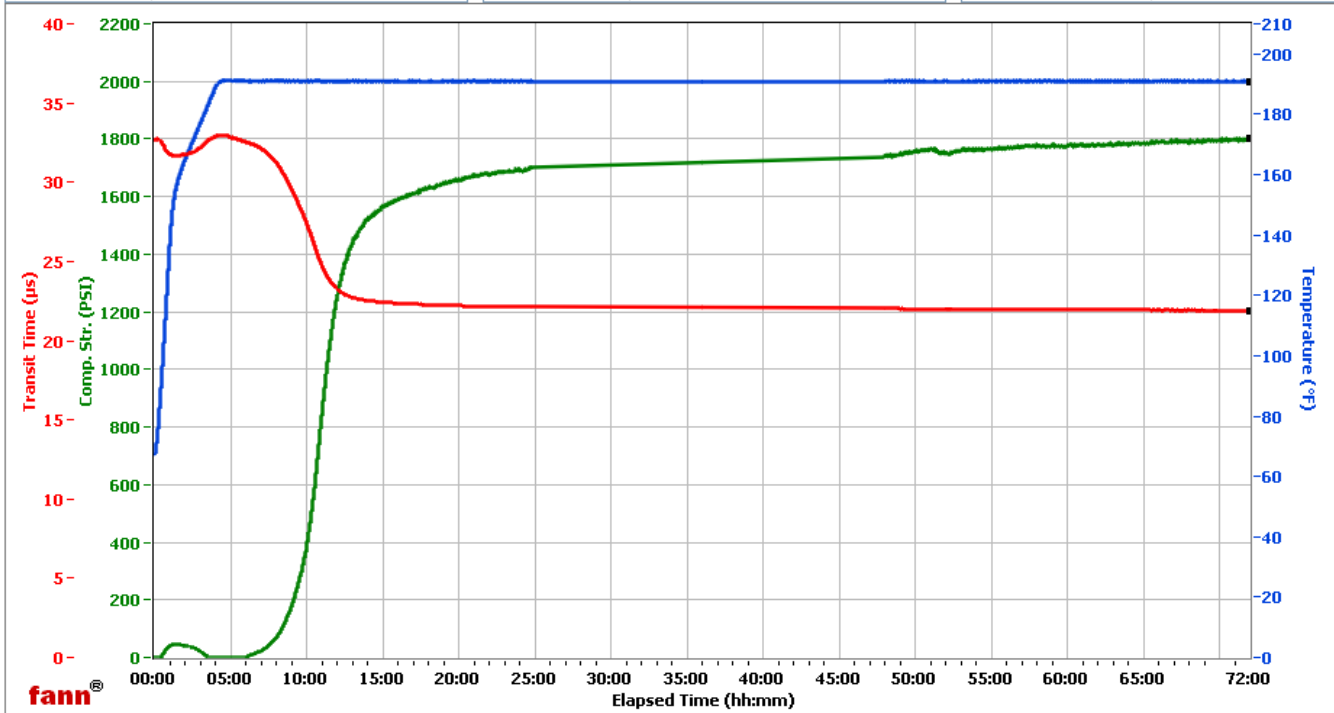
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Vernal

Fields	Values
Project Name	ExxonMobil 110711-1
Test ID	110711-1
Request ID	UCA#8
Tested by	SMR
Customer	ExxonMobil
Well No	PCU 296-5A5
Rig	H8P 321
Casing/Liner Size	7

Fields	Values
Job Type	Intermediate Primary
Cement Type	V
Cement Weight	Light Weight
Test Date	11/14/2010
Test Time	1:11 PM
Temp. Units	degF
Pressure Units	PSI

Events	Results
50.00 PSI	07h:42m
100.00 PSI	08h:23m
500.00 PSI	10h:18m
1000.00 PSI	11h:19m
12h:00m	1252.96
24h:00m	1691.26
48h:00m	1739.02
72h:00m	1801.14



Data File C:\Data Files\110711-1.tdms

Comments Tuned Light, 0.7 lb/sk HR-601, 11.0 Density, 2.21 Yield