

EXXONMOBIL CORPORATION

HOUSTON, Texas

PCU 296-6A3

H&P239

Post Job Summary

Cement Intermediate Casing

Prepared for: George McNary
Date Prepared: October 11, 2010
Version: 1

Service Supervisor: ASHBY, ANDREW

Submitted by: Joshua Anglin

HALLIBURTON

HALLIBURTON

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	4,347.00	0.00	4,273.00		85.00
Open Hole Section	Intermediate Open Hole		9.875		4,347.00	9,484.00	4,273.00	9,416.00	100.00	
Casing	Intermediate Casing	7.00	6.276	26.00	0.00	9,469.00	0.00	9,401.00		85.00

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	10.00	5.00	80.0 bbl	80.0 bbl
1	2	Cement Slurry	New Vernal Tuned Light	11.00	5.00	1300.0 sacks	1300.0 sacks
1	3	Mud	Drilling Fluid/ Mud	9.10	4.00	359.0 bbl	360.0 bbl

HALLIBURTON

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
Fluid Volume: 80.00 bbl
Pump Rate: 5.00 bbl/min

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

Fluid Weight: 11.00 lbm/gal
Slurry Yield: 2.25 ft³/sack
Total Mixing Fluid: 10.02 Gal
Surface Volume: 1300.0 sacks
Sacks: 1300.0 sacks
Calculated Fill: 5,455.00 ft
Calculated Top of Fluid: 4,032.00 ft
Estimated Top of Fluid:
Pump Rate: 5.00 bbl/min

Stage/Plug # 1 Fluid 3: Drilling Fluid/ Mud

Fluid Density: 9.10 lbm/gal
Fluid Volume: 359.00 bbl
Pump Rate: 4.00 bbl/min
Fluid Gels:
Mud PV/YP:

HALLIBURTON

Job Summary

Job Information

Job Start Date	10/10/2010
Job MD	9,484.0 ft
Job TVD	9,416.0 ft
Height of Plug Container/Swage Above Rig Floor	5.0 ft
Surface Temperature at Time of Job	40 degF
Mud Type	Water Based Mud
Name of Mud Company	BAROID
Actual Mud Density	9 lbm/gal
Time Circulated before job	1.50 hour(s)
Mud Volume Circulated	720.00 bbl
Rate at Which Well was Circulated	8.000 bbl/min
Mud loss while Circulating	75.00 bbl
Pipe Movement During Hole Circulation	Reciprocated
Time From End Mud Circ. to Job Start	60.00 minute
Mud loss during Cement Job	171.00 bbl
Pipe Movement During Cementing	Reciprocated
Calculated Displacement	359.00 bbl
Job Displaced by (rig/halco)	Cement Unit HP Pumps
Length of Rat Hole	15.00 ft

Cementing Equipment

Pipe Centralization	Through Entire Cement Column
Did Float Equipment Hold?	Yes
Plug set used?	Yes
Did Plugs Bump?	Yes
Calculated Pressure to Bump Plugs	562.0 psig

HALLIBURTON

Service Supervisor Reports

Job Log

Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pump		Pressure (psig)	Comments
10/09/2010 07:30		Call Out						Crew Called out for Job. Plug Container#
10/09/2010 09:15		Pre-Convoy Safety Meeting						Met w/crew to discuss safety and hazards of travel to location
10/09/2010 10:00		Depart from Service Center or Other Site						Entered into Journey Management.
10/09/2010 12:45		Arrive At Loc						Ended Journey Management. [Casing being ran (45 jts left)]
10/09/2010 12:50		Assessment Of Location Safety Meeting						Met w/crew to discuss hazards of site, location of materials and safety precautions.
10/09/2010 12:55		Other						Spot Equipment
10/09/2010 13:00		Pre-Rig Up Safety Meeting						Met w/crew to discuss the best way to rig up, safety and hazards involved.
10/09/2010 13:10		Rig-Up Equipment						Rig up Ground & Standpipe
10/09/2010 17:30		Other						On bottom, Circulating Bottoms Up (3356 strokes @ 34 spm)
10/09/2010 23:00		Rig-Up Equipment						Rig-up the rig floor.
10/09/2010 23:45		Pre-Job Safety Meeting						Met w/Rig Crew, Co. Rep, and our crew to discuss job procedures, contingencies, and safety measures.
10/10/2010 00:34		Other	2	4				Fill Lines
10/10/2010 00:38		Test Lines					369.0	Low Pressure Test (250 psi)
10/10/2010 00:41		Test Lines					5141.0	High Pressure Test (5000 psi)
10/10/2010 00:48		Pump Spacer	2	80			195.0	82 sks Tuned Spacer @ 10.0 ppg, 5.05 cuft/sk, 34.28 gps
10/10/2010 00:55		Other	4				343.0	Increase Rate
10/10/2010 00:57		Other	5				345.0	Increase Rate
10/10/2010 01:09		Drop Bottom Plug						Shutdown & Drop Bottom Plug
10/10/2010 01:12		Pump Cement	3	520.9			309.0	1300 sks Tuned Light Cement @ 11.0 ppg, 2.25 cuft/sk, 10.04 gps

HALLIBURTON

Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pump		Pressure (psig)	Comments
10/10/2010 01:16		Other	4				362.0	Increase Rate per Co. Rep.
10/10/2010 01:18		Other	5				465.0	Increase Rate
10/10/2010 02:56		Shutdown						Shutdown / Drop Top Plug
10/10/2010 02:59		Pump Displacement	3	360			59.0	Displacement = 20 bbls Water, 330 bbls Mud (9.3 ppg), 10 bbls Water
10/10/2010 03:06		Other	4				145.0	Increase Rate per Co. Rep., Started 330 bbls Mud
10/10/2010 03:21		Other	5				218.0	Increase Rate per Co. Rep.
10/10/2010 03:25		Displ Reached Cmmt	5				269.0	Displacement reached Cement
10/10/2010 03:49		Slow Rate	4				456.0	Slow rate to keep pressure down.
10/10/2010 04:16		Slow Rate	3				661.0	Slow rate to keep pressure down.
10/10/2010 04:20		Slow Rate	2				597.0	Slow rate to bump plug.
10/10/2010 04:26		Bump Plug	2				1286.0	500 psi over final circulating pressure (620 psi)
10/10/2010 04:32		Check Floats						held for 5 min, check floats, 1.75 bbls back - Floats held.
10/10/2010 04:33		End Job						Job Complete
10/10/2010 04:45		Post-Job Safety Meeting (Pre Rig-Down)						Met w/crew to discuss rigging down safely.
10/10/2010 05:00		Rig-Down Equipment						Rlg everything down.
10/10/2010 06:50		Pre-Convoy Safety Meeting						Met w/crew to discuss fit-for-duty, safety and hazards of travel back.
10/10/2010 07:00		Depart Location for Service Center or Other Site						Entered into Journey Management.
10/10/2010 07:00		Other						Thanks for using Halliburton!!!

The Road to Excellence Starts with Safety

Sold To #: 331699	Ship To #: 2791690	Quote #:	Sales Order #: 7668223
Customer: EXXONMOBIL CORPORATION	Customer Rep: Naranjo, German		
Well Name: PCU	Well #: 296-6A3	API/UWI #: 05-103-11481	
Field: PICEANCE CREEK	City (SAP): MEEKER	County/Parish: Rio Blanco	State: Colorado
Legal Description: Section 6 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 #
ANGLIN, JOSHUA B	18.25	462343	ASHBY, ANDREW A	18.25	450544	BEREECE, TERRY Lee	18.25	222819
GOODRICH, BENJAMIN Franklin	18.25	481342	HUNTER, SAMUEL David	18.25	479669	PARTRIDGE, BRENT W	18.25	471227
SMITH, KC Hyrum	18.25	462378	STUMF, TOM	18.25	482818			

Equipment

HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way
10948685	45 mile	11062234	45 mile	11127525	45 mile	11189139	45 mile
11263213	45 mile	11287531	45 mile	11410664	45 mile		

Job Hours

Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours
10/9/2010	11.25	0	10/10/10	7	4			
TOTAL			Total is the sum of each column separately					

Job

Job				Job Times			
Formation Name					Date	Time	Time Zone
Formation Depth (MD)	Top		Bottom	Called Out	09 - Oct - 2010	07:30	MST
Form Type	BHST			On Location	09 - Oct - 2010	12:45	MST
Job depth MD	9484. ft			Job Started	10 - Oct - 2010	00:00	MST
Water Depth	Wk Ht Above Floor			Job Completed	10 - Oct - 2010	04:30	MST
Perforation Depth (MD)	From		To	Departed Loc	10 - Oct - 2010	07:00	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
Intermediate Open Hole				9.875				4347.	9484.	4273.	9416.
Intermediate Casing	Unknown		7.	6.276	26.	HYDRIL - SERIES 500 TYPE 513	P-110	.	9469.	.	9401.
Surface Casing	Unknown		10.75	9.95	45.5	BTC	J-55	.	4347.	.	4273.

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)			80.00	bbl	10.	.0	.0	6.0		
	38.32 gal/bbl	FRESH WATER										
	59.8 lbm/bbl	BARITE, 100 LB SK (100003680)										
2	New Vernal Tuned Light	TUNED LIGHT (TM) SYSTEM (452984)			1300.0	sacks	11.	2.25	10.02	6.0	10.02	
	0.7 lbm	HR-601, 50 LB BAG (101328348)										
	10.02 Gal	FRESH WATER										
3	Drilling Fluid/Mud				359.00	bbl	9.1			6.0		
Calculated Values			Pressures			Volumes						
Displacement	359	Shut In: Instant				Lost Returns	171	Cement Slurry	512	Pad		
Top Of Cement	3878	5 Min				Cement Returns	0	Actual Displacement	356	Treatment		
Frac Gradient		15 Min				Spacers	80	Load and Breakdown		Total Job		
Rates												
Circulating	8	Mixing			5	Displacement	4	Avg. Job				
Cement Left In Pipe	Amount	85 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							

HALLIBURTON

Lab Data

HALLIBURTON

Cementing Rockies, Vernal

LAB RESULTS - Primary

Job Information

Request/Slurry	102247/6	Rig Name	H&P 239	Date	September 29th 2010
Submitted By	Joshua Anglin	Job Type	Intermediate Casing	Bulk Plant	Vernal
Customer	ExxonMobil	Location	Rio Blanco	Well	PCU 296-6A3

Well Information

Casing/Liner Size	7"	Depth MD	9416 ft	BHST	210 F
Hole Size	9 7/8"	Depth TVD	9484 ft	BHCT	154 F

Drilling Fluid Information

Mud Company	Type	Density	9,3 PPG	PV/YP
-------------	------	---------	---------	-------

Cement Information - Primary Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
		Tuned Light				Slurry Density	10.999	PPG
						Slurry Yield	2.21	FT3
100.00	% BWOC	Cement Blend	Bulk	Oct 01, 2010		Water Requirement	9.67	GPS
36.88	%	> Boral Craig Pozmix	Bulk	Oct 01, 2010				
11	%	> HGS 6000 dry blended	Bulk	Oct 01, 2010				
53.19	%	> Holcim Type V	Bulk	Oct 01, 2010				
13	%	> Silicalite - Compacted	Bulk	Oct 01, 2010				
0.70	lb/sk	HR-601	Bulk	Oct 01, 2010	21HR05 X-14S2JB	Water Source	Fresh Water	
						Water Chloride	N/A	ppm
0.50	lb/sk	D-Air 3000	Bulk	Oct 01, 2010	2010183 AC			
0.20	lb/sk	FWCA	Bulk	Oct 01, 2010	37234			
80.73	L/100kg	Fresh Water	Lab	Jul 07, 2010	07/07/2010			

Operation Test Results Request ID 102247/6

Thickening Time, Request Test ID:1075827, 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)
154	4,549	60	8	05:13	05:43	05:58	06:10

Operation Test Results Request ID 102247/1

UCA Comp. Strength, Request Test ID:1071838, 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)
191	3,000	12:04	14:32	46	1,393	1,441	1,450	72

Marsh Funnel, Request Test ID:1071843, Historical Data

Volume [ml]	Time [Sec]	Foam Quality
250	42	0

Free Water, Request Test ID:1071840, Historical Data

HALLIBURTON

Test Temp (°F)

154

% FW 45 Inc

0

Conditioning time

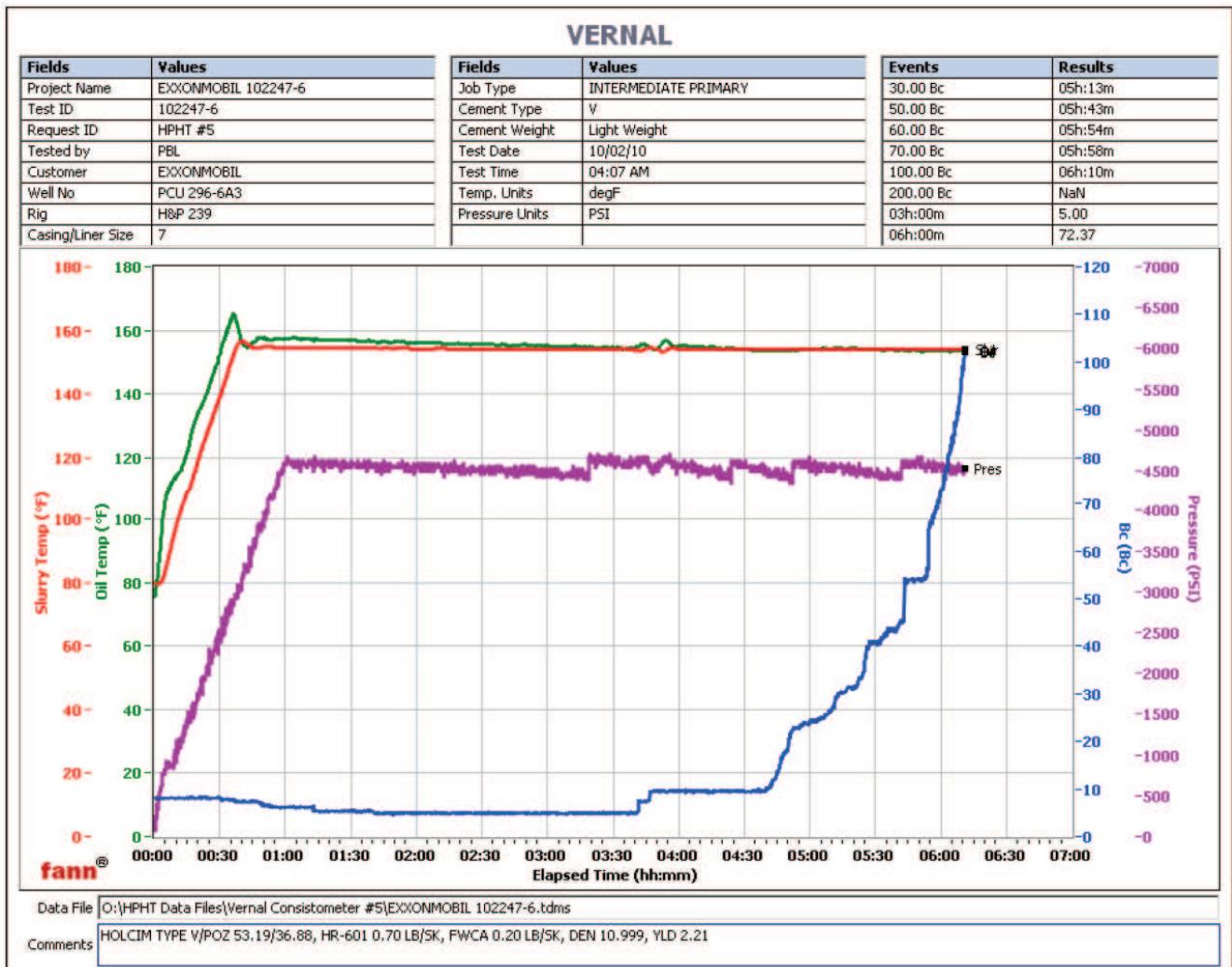
30

API Rheology, Request Test ID:1071839, Historical Data

Temp (°F)	600	300	200	100	60	30	6	3	Cond Time (min)	PV/YP
80	224	118	89	58	46	38	30	27	0	90.3 / 29.6

API Fluid Loss, Request Test ID:1071841, Historical Data

Test Temp (°F)	Test Pressure (psi)	Test Time (min)	Meas. Vol (< 30 min, cc)	Extr. ISO FL (cc/30 min)	Conditioning time (min)
154	1,000	4	39	214	30



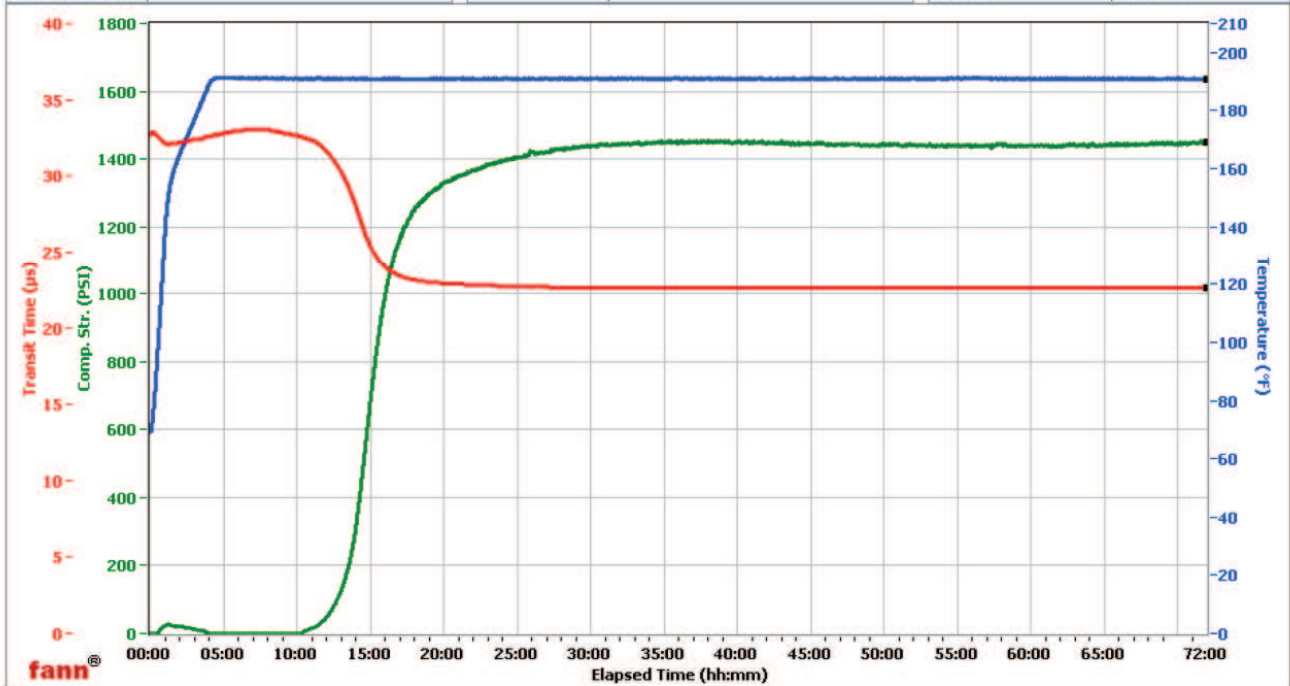
HALLIBURTON

Vernal

Fields	Values
Project Name	EXXONMOBIL 102247-1
Test ID	102247-1
Request ID	6
Tested by	RR
Customer	ExxonMobil 102247-1
Well No	PCU 296-6A3
Rig	H&P 239
Casing/Liner Size	

Fields	Values
Job Type	PROD INTERMEDIATE
Cement Type	Tuned Light
Cement Weight	Light Weight
Test Date	9/29/2010
Test Time	12:19 PM
Temp. Units	degF
Pressure Units	PSI

Events	Results
50.00 PSI	12h:04m
100.00 PSI	12h:45m
500.00 PSI	14h:32m
1000.00 PSI	16h:02m
12h:00m	46.32
24h:00m	1392.65
48h:00m	1441.11
72h:00m	1450.43

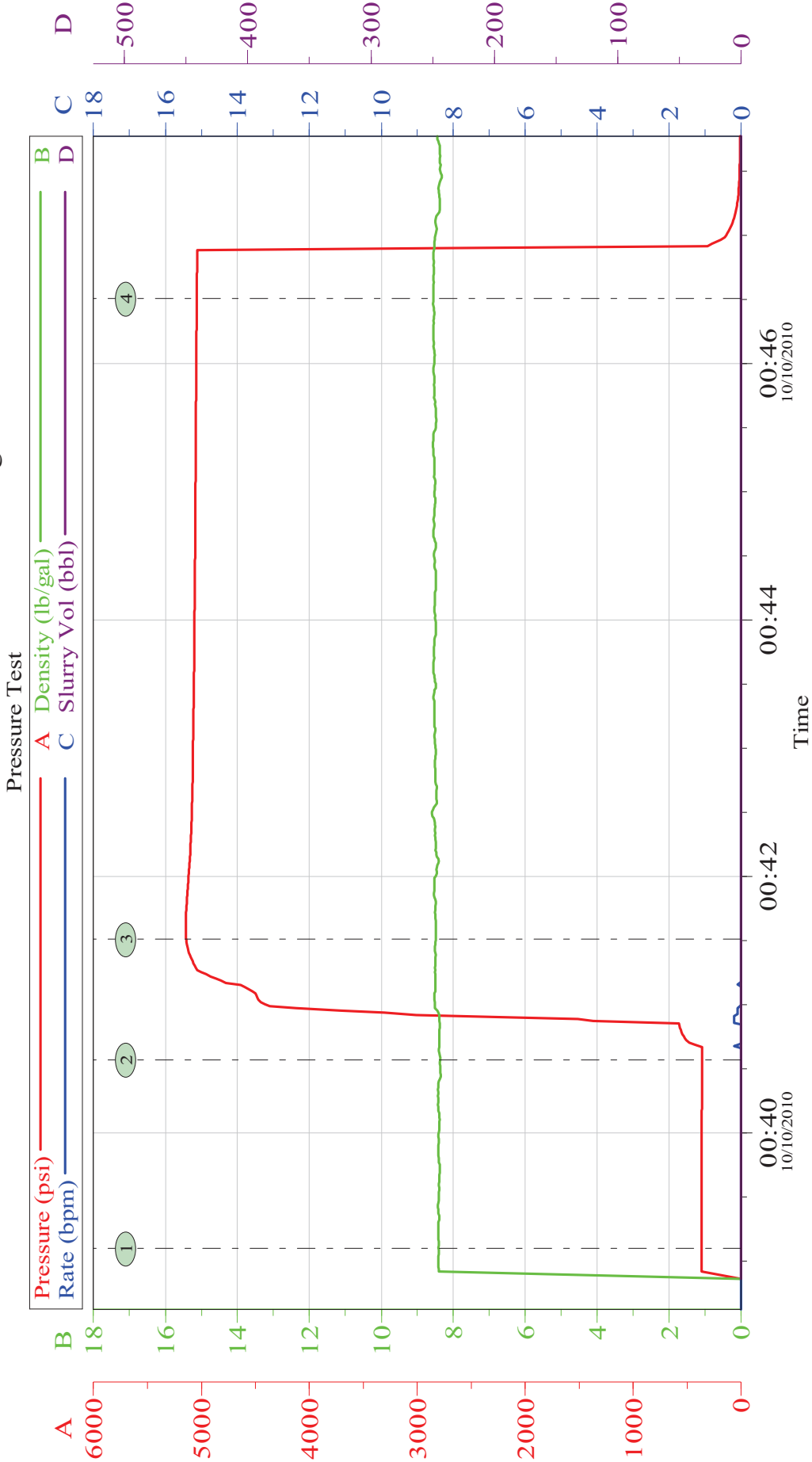


Data File C:\Data Files\102247-1.tdms

Comments TUNED LIGHT, HR-601 .750%, DENSITY 11.0, YIELD 2.21 YARD

Data Acquisition

XOM PCU 296-6A3 7" Intermediate Casing

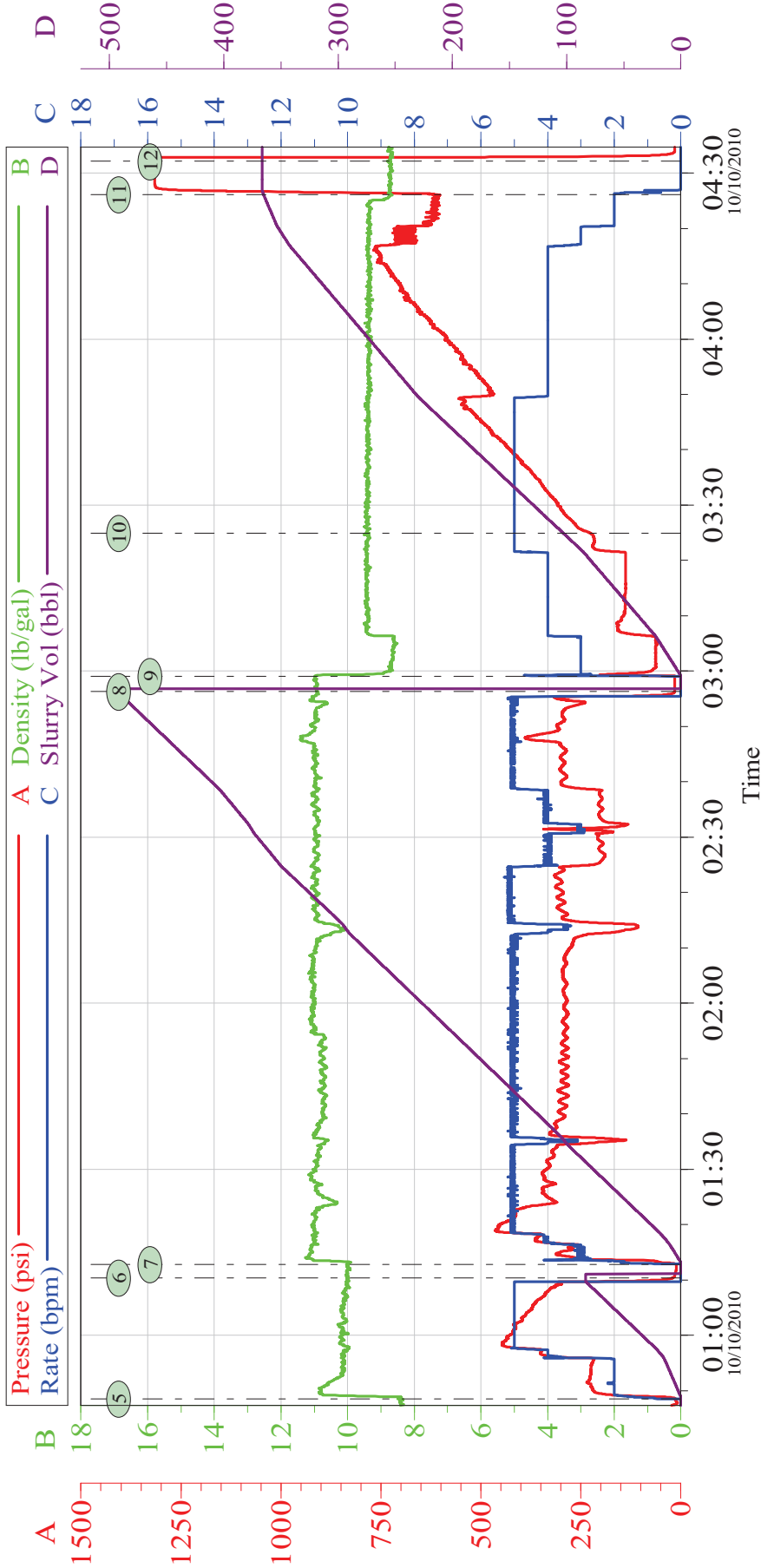


Customer: EXXONMOBIL	Job Date: 10-Oct-2010	Sales Order #: 7668223
Well Description: PCU 296-6A3	UWI: 05-103-11481	

OptiCem v6.4.9
10-Oct-10 04:47

XOM PCU 296-6A3 7" Intermediate Casing

Job Chart

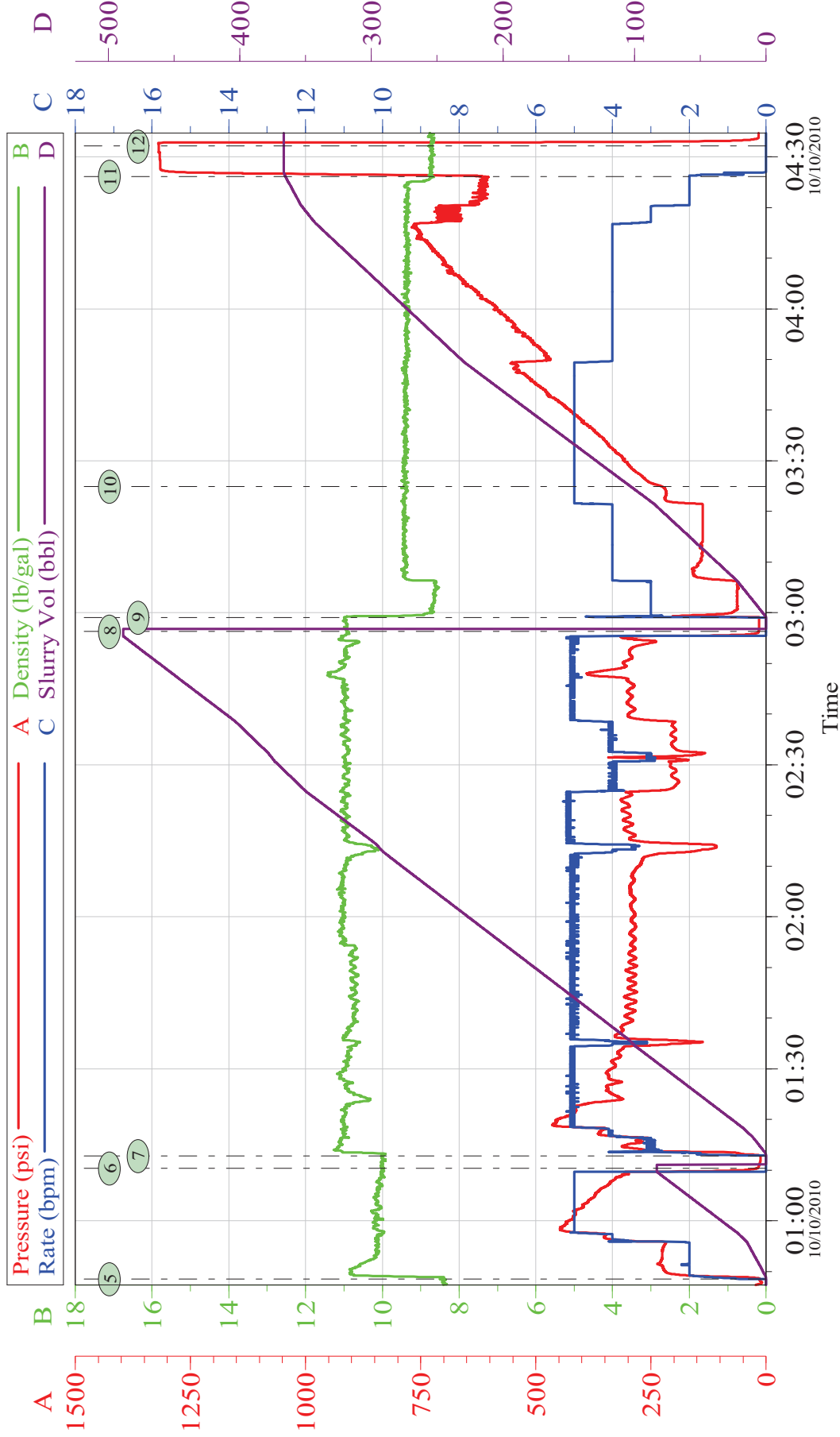


5	Pump Spacer	00:48:31	13.00	6	Drop Bottom Plug	01:10:22	20.00	7	Pump Cement	01:12:50	12.00
8	Drop Top Plug	02:56:21	16.00	9	Pump Displacement	02:59:05	15.00	10	Caught Cement	03:24:57	226.0
11	Bump Plug	04:26:10	617.7	12	Check Floats	04:32:09	1319				

Customer:	EXXONMOBIL	Job Date:	10-Oct-2010	Sales Order #:	7668223
Well Description:	PCU 296-6A3	UWI:	05-103-11481		

XOM PCU 296-6A3 7" Intermediate Casing

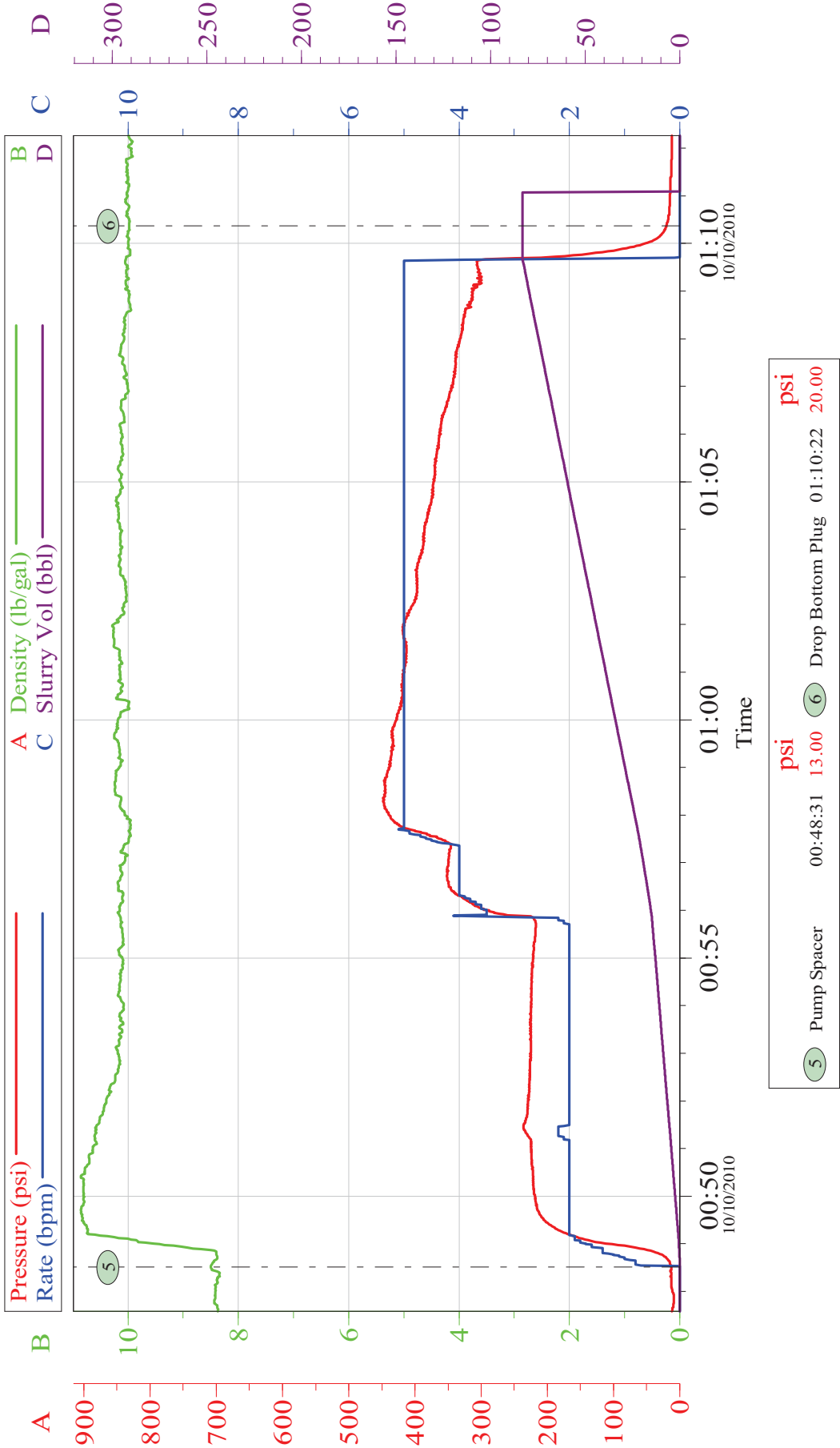
Job Chart



Customer: EXXONMOBIL	Job Date: 10-Oct-2010	Sales Order #: 7668223
Well Description: PCU 296-6A3	UWI: 05-103-11481	

OptiCem v6.4.9
10-Oct-10 04:46

XOM PCU 296-6A3 7" Intermediate Casing
Job Chart



Customer: EXXONMOBIL	Job Date: 10-Oct-2010	Sales Order #: 7668223
Well Description: PCU 296-6A3	UWI: 05-103-11481	

XOM PCU 296-6A3 7" Intermediate Casing
Job Chart



Customer: EXXONMOBIL	Job Date: 10-Oct-2010	Sales Order #: 7668223
Well Description: PCU 296-6A3	UWI: 05-103-11481	

XOM PCU 296-6A3 7" Intermediate Casing
Job Chart



Customer: EXXONMOBIL	Job Date: 10-Oct-2010	Sales Order #: 7668223
Well Description: PCU 296-6A3	UWI: 05-103-11481	