

EXXONMOBIL CORPORATION
HOUSTON, Texas

PCU 197-36A2 Surface

H&P 326

Post Job Summary

Cement Multiple Stages

Date Prepared: October 1, 2010
Version: 1

Service Supervisor: Zachary Sarver
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		
Open Hole Section	Surface Open Hole		14.750		0.00	1,592.00	0.00	1,564.00	75.00	
Open Hole Section	Surface Open Hole		14.750		1,592.00	4,200.00	1,564.00	4,079.00	25.00	
Casing	Surface Casing	10.75	9.950	45.50	0.00	4,190.00	0.00	4,069.00		80.00
Cement Stage Tool	Multiple Stage Cementer		.000		1,592.00	1,592.00				0.00

Pumping Schedule

Stage #	Fluid #	Fluid Type	Fluid Name	Surface Density	Surface Volume
1	1	Spacer	FreshWater Ahead	8.33	50.0 bbl
1	2	Cement Slurry	First Stage Lead Cement	12.70	775.0 sacks
1	3	Cement Slurry	First Stage Tail Cement	15.80	350.0 sacks
1	4	Spacer	Drilling Fluid / Mud	8.90	393.0 bbl
2	1	Spacer	Freshwater Ahead	8.33	50.0 bbl
2	2	Cement Slurry	Second Stage Lead Cement	12.70	800.0 sacks
2	3	Spacer	Drilling Fluid / Mud	8.90	154.0 bbl
2	4	Cement Slurry	Top Out	15.80	40.0 sacks

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Fluids Pumped

Stage/Plug # 1 **Fluid 1:** FreshWater Ahead
FLUSH

Fluid Density: 8.33 lbm/gal
Fluid Volume: 50.00 bbl
Pump Rate: 6.00 bbl/min

Stage/Plug # 1 **Fluid 2:** First Stage Lead
Cement
ECONOCEM (TM) SYSTEM
0.6 % HR-7
0.25 lbm Poly-E-Flake

Fluid Weight: 12.70 lbm/gal
Slurry Yield: 1.88 ft³/sack
Total Mixing Fluid: 9.96 Gal
Surface Volume: 775.0 sacks
Sacks: 775.0 sacks
Calculated Fill: 2,081.82 ft
Calculated Top of Fluid: 1,592.00 ft
Pump Rate: 6.00 bbl/min

Stage/Plug # 1 **Fluid 3:** First Stage Tail Cement
HALCEM (TM) SYSTEM
0.25 % HR-800
0.25 lbm Poly-E-Flake

Fluid Weight: 15.80 lbm/gal
Slurry Yield: 1.15 ft³/sack
Total Mixing Fluid: 4.95 Gal
Surface Volume: 350.0 sacks
Sacks: 350.0 sacks
Calculated Fill: 516.18 ft
Calculated Top of Fluid: 3,673.82 ft
Pump Rate: 6.00 bbl/min

Stage/Plug # 1 **Fluid 4:** Drilling Fluid / Mud
DRILLING MUD

Fluid Density: 8.90 lbm/gal
Fluid Volume: 393.00 bbl
Pump Rate: 6.00 bbl/min

Stage/Plug # 2 **Fluid 1:** Freshwater Ahead
SPACER

Fluid Density: 8.33 lbm/gal
Fluid Volume: 50.00 bbl
Pump Rate: 6.00 bbl/min

Stage/Plug # 2 **Fluid 2:** Second Stage Lead
Cement
ECONOCEM (TM) SYSTEM
0.25 lbm Poly-E-Flake

Fluid Weight: 12.70 lbm/gal
Slurry Yield: 1.87 ft³/sack
Total Mixing Fluid: 9.98 Gal
Surface Volume: 800.0 sacks
Sacks: 800.0 sacks
Calculated Fill: 1,592.00 ft
Calculated Top of Fluid: 0.00 ft
Pump Rate: 6.00 bbl/min

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Stage/Plug # 2 **Fluid 3:** Drilling Fluid / Mud
DRILLING MUD

Fluid Density: 8.90 lbm/gal
Fluid Volume: 154.00 bbl
Pump Rate: 6.00 bbl/min

Stage/Plug # 2 **Fluid 4:** Top Out
Top Out

94 lbm Premium Cement
2 % Calcium Chloride

Fluid Weight: 15.80 lbm/gal
Slurry Yield: 1.16 ft³/sack
Total Mixing Fluid: 5.01 Gal
Surface Volume: 40.0 sacks
Sacks: 40.0 sacks
Pump Rate: 2.00 bbl/min

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Job Summary

Job Information

Job Start Date	9/19/2010 3:24:00 AM
Job MD	4,200.0 ft
Job TVD	4,079.0 ft
Height of Plug Container/Swage Above Rig Floor	3.0 ft
Surface Temperature at Time of Job	45 degF
Mud Type	Water Based Mud
Name of Mud Company	BAROID
Actual Mud Density	9.45 lbm/gal
Time Circulated before job	2.50 hour(s)
Mud Volume Circulated	1,200.00 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	5.00 minute
Pipe Movement During Cementing	Reciprocated
Calculated Displacement	153.11 bbl
Amount of Cement Returns	154.00 bbl
Job Displaced by (rig/halco)	Cement Unit HP Pumps
Annular flow Before Job? (Water/Gas)	No
Annular flow After Job? (Water/Gas)	No
Length of Rat Hole	16.00 ft

Cementing Equipment

Pipe Centralization	Unknown
Brand of Float Equipment Used	Weatherford
Did Float Equipment Hold?	Yes
Plug set used?	Yes
Brand of Plug set used?	Weatherford
Did Plugs Bump?	Yes
Calculated Pressure to Bump Plugs	800.0 psig
Brand of Stage Cementing Tools Used	Weatherford
Did Stage Cementing Tool Open Properly?	Yes

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Service Supervisor Reports

Job Log

Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pressure (psig)	Comments
09/18/2010 11:00		Call Out				CALLED OUT TO LOCATION
09/18/2010 11:15		Other				WENT TO VERNAL FROM PICEANCE CREEK, TO PICK UP PLUG CONTAINER AND OTHER EQUIPMENT FOR JOB
09/18/2010 19:00		Arrive At Loc				ARRIVE ON LOCATION WITH ALL EQUIPMENT AND PERSONAL FOR JOB, RIG IS RUNNING CASING HAS 23 JOINTS OF CASING LEFT TO RUN IN THE HOLE
09/18/2010 19:15		Assessment Of Location Safety Meeting				ASSESSMENT OF LOCATION JSA WITH CREW, ALSO TALED ABOUT TRUCK PLACEMENT
09/18/2010 19:30		Pre-Rig Up Safety Meeting				RIG UP SAFETY MEETING WITH CREW COVERD SPOTTING EQUIPMENT AND RIGGING UP IRON JSA, IRON WAS TO BE RAN TO THE EDGE OF THE RED ZONE
09/18/2010 19:40		Rig-Up Equipment				START RIGGING UP EQUIPMENT
09/18/2010 21:45		Casing on Bottom				RIG LANDED CASING ON BOTTOM, IRON IS RAN TO THE RED ZONE, AND EQUIPMENT IS READY TO BE PICKED UP TO THE RIG FLOOR AS SOON AS CRT IS RIGGED DOWN
09/18/2010 23:00		Pre-Rig Up Safety Meeting				JSA PREFORMED WITH RIG CREW ABOUT PICKING UP IRON AND RIGGING UP THE FLOOR SO THAT THE RIG CAN CIRCULATE
09/18/2010 23:15		Rig-Up Equipment				START RIGGING UP THE FLOOR SO THAT CUSTOMER CAN CIRCULATE THE WELL THROUGH ALL OF OUR EQUIPMENT
09/18/2010 23:45		Rig-Up Completed				RIG UP IS COMPLETE, WELL HAS BEEN TURNED OVER TO THE CUSTOMER AND HAS BEGUN TO CIRCULATE THE WELL AT 20 SPM, WITH A MAXIUM RATE OF 75 SPM
09/19/2010 02:45		Pre-Job Safety Meeting				PRE JOB SAFETY MEETING AND JSA PREFORMED WITH RIG CREW ABOUT PUMPING THE 1ST STAGE OF JOB
09/19/2010 03:06		Other	1	3		START PUMPING 3 BBLS OF FRESH WATER TO FILL PUMPING LINES FOR PRESSURE TEST
09/19/2010 03:08		Pressure Test			300.0	START LOW PRESSURE TEST
09/19/2010 03:11		Pressure Test			294.0	END LOW PRESSURE TEST
09/19/2010 03:12		Pressure Test			5500.0	START HIGH PRESSURE TEST
09/19/2010 03:13		Other				HALLIBURTON HAND ON RIG FLOOR NOTICED THAT A FITTING ON THE FLOOR WAS LEAKING, PRESSURE WAS TO BE BLEED OFF AND FITTING TIGHTENED BEFORE RETRYING TEST
09/19/2010 03:14		Pressure Test			5500.0	START HIGH PRESSURE TEST
09/19/2010 03:15		Other				FITTING STILL LEAKING, PRESSURE WAS BLEED OFF AND SEAL INSIDE OF CONNECTION WAS REPLACED.
09/19/2010 03:24	1	Pressure Test			235.0	START LOW PRESSURE TEST
09/19/2010 03:28	2	Pressure Test			229.0	END LOW PRESSURE TEST
09/19/2010 03:29	3	Pressure Test			5513.0	START HIGH PRESSURE TEST
09/19/2010 03:34	4	Pressure Test			5370.0	END HIGH PRESSURE TEST
09/19/2010 03:37	5	Pump Spacer	5	50	12.0	START 50 BBLS FRESH WATER SPACER AHEAD
09/19/2010 03:47	6	Pump 1st Stage Lead Slurry	6	259	241.0	START PUMPING 1ST STAGE LEAD CEMENT @ 12.7 LBS/GAL, 1.88 YLD, 10.05 WR, (775 SKS) TOTAL VOLUME OF CEMENT DESIGNED 259 BBLS, TOTAL VOLUME OF CEMENT PUMPED 265 BBLS
09/19/2010 04:44	7	Pump 1st Stage Tail Slurry	3	71	250.0	START PUMPING 1ST STAGE TAIL CEMENT @ 15.8 LBS/GAL, 1.15 YLD, 5.0 WR (350 SKS) TOTAL VOLUME OF CEMENT DESIGNED 71 BBLS, TOTAL VOLUME OF CEMENT PUMPED 68 BBLS

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Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pressure (psig)	Comments
09/19/2010 04:59	8	Shutdown				SHUTDOWN TO DROP DART PLUG
09/19/2010 05:05	9	Pump Displacement	6	393	38.0	START PUMPING FRESH WATER DISPLACEMENT
09/19/2010 05:09	10	Pump Displacement	8	393	128.0	START PUMPING DRILLING MUD DISPLACEMENT
09/19/2010 05:25	11	Slow Rate	3	393	376.0	SLOW RATE TO 3.0 BPM FOR DRAT PLUG TO GO THROUGH MSC TOOL
09/19/2010 05:32	12	Resume	8	393	79.0	RESUME PUMPING MUD DISPLACEMENT @ 8.0 BPM
09/19/2010 05:41	13	Pump Displacement	8	393	439.0	START PUMPING FRESH WATER TO PUT ACCROSS MSC TOOL
09/19/2010 05:45	14	Pump Displacement	8	393	461.0	RESUME PUMPING DRILLING MUD DISPLACEMENT
09/19/2010 06:00	15	Slow Rate	3	393	1046.0	SLOW RATE TO 3.0 BPM, ALSO STARTED PUMPIG FRESH WATER DISPLACEMENT
09/19/2010 06:02	16	Bump Plug	3	393	742.0	BUMP PLUG @ 700 PSI TOOK PRESSURE TO 1100 PSI BEFORE SHUTTING DOWN
09/19/2010 06:06	17	Check Floats				CHECK FLOATS, FLOATS HELD WITH 2.0 BBLS BACK
09/19/2010 06:10	18	Drop Opening Device For Multiple Stage Cementer				DROP OPENING PLUG FOR MSC TOOL WAIT 10 MINUTES BEFORE OPENING TOOL
09/19/2010 06:23	19	Open Multiple Stage Cementer	1		3.0	START PUMPING TO OPEN MSC TOOL
09/19/2010 06:26	20	Open Multiple Stage Cementer	1	1	899.0	MSC TOOL OPENS AT 899 PSI
09/19/2010 06:26	21	Pump Well Fluid	5	10	17.0	START PUMPING DRILLING MUD
09/19/2010 06:28	22	Shutdown	5	10	190.0	SHUTDOWN AND TURN OVER TO RIG CREW TO CIRCULATE WELL
09/19/2010 08:30		Pre-Job Safety Meeting				PRE JOB SAFETY MEETING AND JSA WTH RIG CREW ABOUT PUMPING 2ND STAGE
09/19/2010 09:01	23	Pump Spacer	6	50	11.0	START PUMPING 50 BBLS OF FRESH WATER SPACER AHEAD
09/19/2010 09:11	24	Pump Cement	6	267	180.0	START PUMPING 2ND STAGE CEMENT @ 12.7 LBS/GAL, 1.88 YLD, 10.05 WR (800 SKS) TOTAL DESIGN VOLUME OF CEMENT 267 BBLS, TOTAL VOLUME PUMPED 268 BBLS
09/19/2010 10:03	25	Shutdown		267	102.0	SHUTDOWN TO DROP MSC CLOSING PLUG
09/19/2010 10:06	26	Clean Lines				START WASHING PUMPING LINES OUT TO PIT
09/19/2010 10:10	27	Clean Lines				END WASHING PUMPING LINES OUT TO PIT
09/19/2010 10:12		Cement Returns to Surface	8	154		CEMENT RETURNS TO SURFACE AS SOON AS DISPLACEMENT STARTS
09/19/2010 10:12	28	Pump Displacement	8	154	55.0	START PUMPING FRESH WATER DISPLACEMENT
09/19/2010 10:14	29	Pump Displacement	8	154	399.0	START PUMPING DRILLING MUD DISPLACEMENT
09/19/2010 10:16	30	Slow Rate	5	154	438.0	SLOW RATE TO 5.0 BPM
09/19/2010 10:31	31	Slow Rate	3	154	499.0	SLOW RATE TO 3.0 BPM
09/19/2010 10:38	32	Pump Displacement	3	154	378.0	START PUMPING FRESH WATER DISPLACEMENT
09/19/2010 10:43	33	Bump Plug	3	154	384.0	LAND MSC CLOSING PLUG TOOK PRESSURE TO 1695 PSI BEFORE SHUTTING DOWN
09/19/2010 10:45	34	Other				CHECK MSC TOOL, TOOL HELD 1.5 BBLS BACK
09/19/2010 11:00		Pre-Rig Down Safety Meeting				PRE RIG DOWN JSA AND SAFETY MEETING WITH RIG CREW TO RIG DOWN THE FLOOR, GOING TO WATCH THE WELL TO SEE IF CEMENT FALLS, AND IF TOP OUT IS NECESSARY
09/19/2010 11:15		Rig-Down Equipment				START RIGGING DOWN FLOOR AND RIGGING UP TO CELLAR AS PER CUSTOMER REQUEST
09/19/2010 14:30		Rig-Up Equipment				START TO FINISH RIG UP TO CELLAR, NEED TO TOP OUT AND CUSTOMER WANT TO GO THROUGH THE CELLAR FOR TOP OUT JOB

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Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pressure (psig)	Comments
09/19/2010 15:01	35	Pump Cement	1		29.0	START PUMPING TOP OUT CEMENT @ 15.8 LBS/GAL, 1.15 YLD, 5.0 WR (40 SKS)
09/19/2010 15:03	36	Shutdown				SHUTDOWN, LINE IS PURGED OF ALL WATER CEMENT IS RETURNING TO CELLAR
09/19/2010 15:05	37	Resume	1	8	26.0	RESUME PUMPING CEMENT @ 15.8 LBS/GAL FOR TOP OUT
09/19/2010 15:09	38	Shutdown	1	8	64.0	CEMENT RETURNS TO SURFACE TOLD TO SHUTDOWN BY CUSTOMER, AND RELEASED FROM LOCATION
09/19/2010 15:30		Pre-Rig Down Safety Meeting				PRE RIG DOWN SAFETY MEETING WITH CREW ABOUT RIGGING DOWN ALL IRON AND HOSES
09/19/2010 15:45		Rig-Down Equipment				START RIGGING DOWN EQUIPMENT
09/19/2010 17:00		Rig-Down Completed				EQUIPMENT IS RIGGED DOWN
09/19/2010 17:30		Pre-Convoy Safety Meeting				SAFETY MEETING ABOUT TRAVEL BACK TO YARD
09/19/2010 18:00		Crew Leave Location				CREW DEPARTS LOCATION FOR YARD

The Road to Excellence Starts with Safety

Sold To #: 331699	Ship To #: 2807172	Quote #:	Sales Order #: 7641160
Customer: EXXONMOBIL CORPORATION		Customer Rep: Kelly, Whitnee	
Well Name: PCU		Well #: 197-36A2	API/UWI #: 05103111810000
Field: PICEANCE CREEK	City (SAP): MEEKER	County/Parish: Rio Blanco	State: Colorado
Legal Description: Section 36 Township 1S Range 97W			
Contractor: H&P		Rig/Platform Name/Num: 326	
Job Purpose: Cement Multiple Stages			
Well Type: Development Well		Job Type: Cement Multiple Stages	
Sales Person: TURNER, JAMIE		Srvc Supervisor: SARVER, ZACHARY	MBU ID Emp #: 219539

Job Personnel

HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #
ALLRED, JARED Don		471751	BURROWS, DARREN		475039	PACE, GARRETT		475041
SARVER, ZACHARY S		219539	WALSH, JAMES Ronald		457722			

Equipment

HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way
10572545	45 mile	10867527	45 mile	10872435	45 mile	10897817	45 mile
10948689	45 mile	11019277	45 mile	11023106	45 mile	11338211	45 mile
6616	45 mile	6647	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					

Job

Formation Name	Top	Bottom	Called Out	Date	Time	Time Zone
Formation Depth (MD)			On Location	18 - Sep - 2010	11:00	MST
Form Type		BHST	Job Started	11 - Sep - 2010	19:00	MST
Job depth MD	4200. ft	Job Depth TVD	Job Started	19 - Sep - 2010	03:24	MST
Water Depth		Wk Ht Above Floor	Job Completed	19 - Sep - 2010	15:09	MST
Perforation Depth (MD)	From	To	Departed Loc	19 - Sep - 2010	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
Multiple Stage Cementer	Used			.				1592.	1592.		
Surface Open Hole				14.75				.	1592.	.	1564.
Surface Open Hole				14.75				1592.	4200.	1564.	4079.
Surface Casing	Unknown		10.75	9.95	45.5	BTC	J-55	.	4190.	.	4069.

Miscellaneous Materials

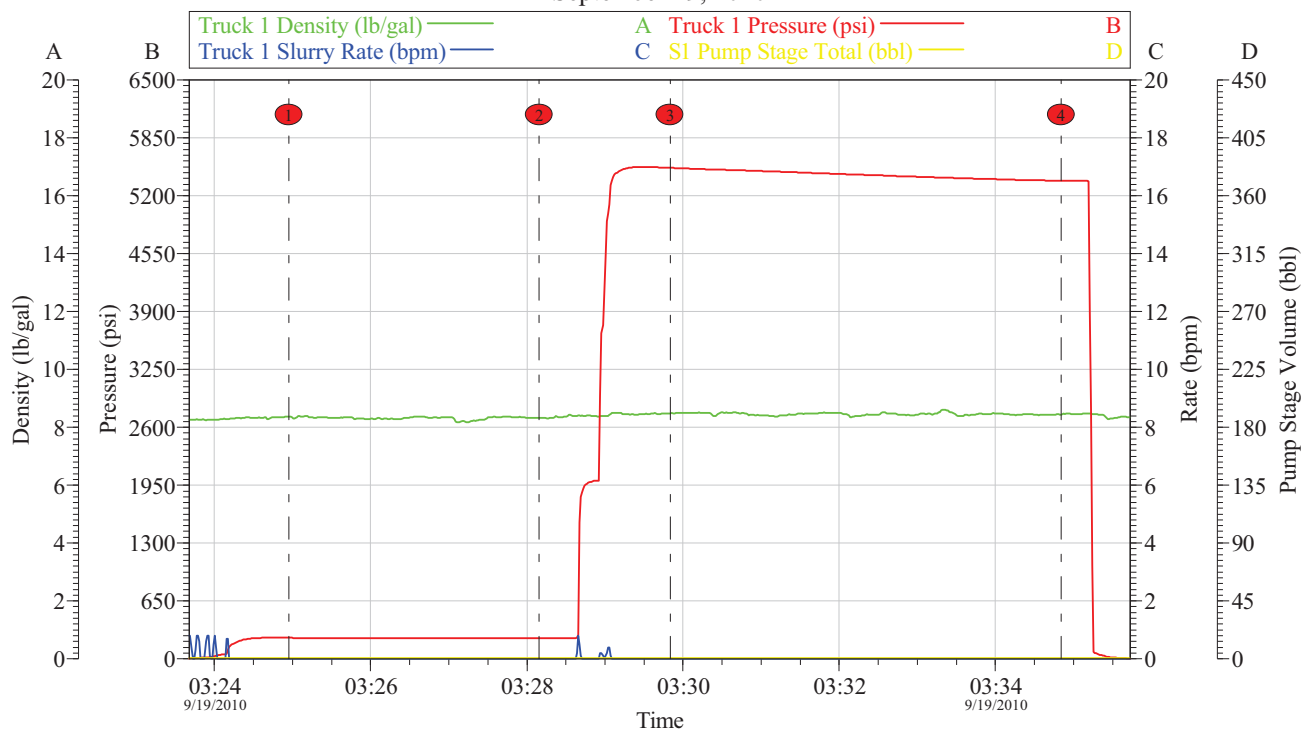
Gelling Agt	Conc	Surfactant	Conc	Acid Type	Qty	Conc	%
Treatment Fld	Conc	Inhibitor	Conc	Sand Type	Size	Qty	

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	FreshWater Ahead		50.00	bbl	8.33	.0	.0	6.0	
2	First Stage Lead Cement	ECONOCEM (TM) SYSTEM (452992)	775.0	sacks	12.7	1.88	9.96	6.0	9.96
0.6 %		HR-7 (100005055)							
0.25 lbm		POLY-E-FLAKE (101216940)							
9.957 Gal		FRESH WATER							
3	First Stage Tail Cement	HALCEM (TM) SYSTEM (452986)	350.0	sacks	15.8	1.15	4.95	6.0	4.95
0.25 %		HR-800, 50 LB SACK (101619742)							
0.25 lbm		POLY-E-FLAKE (101216940)							
4.948 Gal		FRESH WATER							
4	Drilling Fluid / Mud		393.00	bbl	8.9	.0	.0	6.0	
Stage/Plug #: 2									
Fluid #	Stage Type	Fluid Name	Qty	Qty uom	Mixing Density uom	Yield uom	Mix Fluid uom	Rate uom	Total Mix Fluid uom
1	Freshwater Ahead		50.00	bbl	8.33	.0	.0	6.0	
2	Second Stage Lead Cement	ECONOCEM (TM) SYSTEM (452992)	800.0	sacks	12.7	1.87	9.98	6.0	9.98
0.25 lbm		POLY-E-FLAKE (101216940)							
9.982 Gal		FRESH WATER							
3	Drilling Fluid / Mud		154.00	bbl	8.9	.0	.0	6.0	
4	Top Out	CMT - PREMIUM - CLASS G, 94 LB SK (100003685)	40.0	sacks	15.8	1.16	5.01	2.0	5.01
94 lbm		CMT - PREMIUM - CLASS G REG OR TYPE V, BULK (100003685)							
2 %		CALCIUM CHLORIDE - HI TEST PELLET (100005053)							
5.019 Gal		FRESH WATER							
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	80 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					

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Data Acquisition

ExxonMobil Corporation
PCU 197-36A2, 10 3/4" 2 Stage Surface, Pressure Test
September 19, 2010



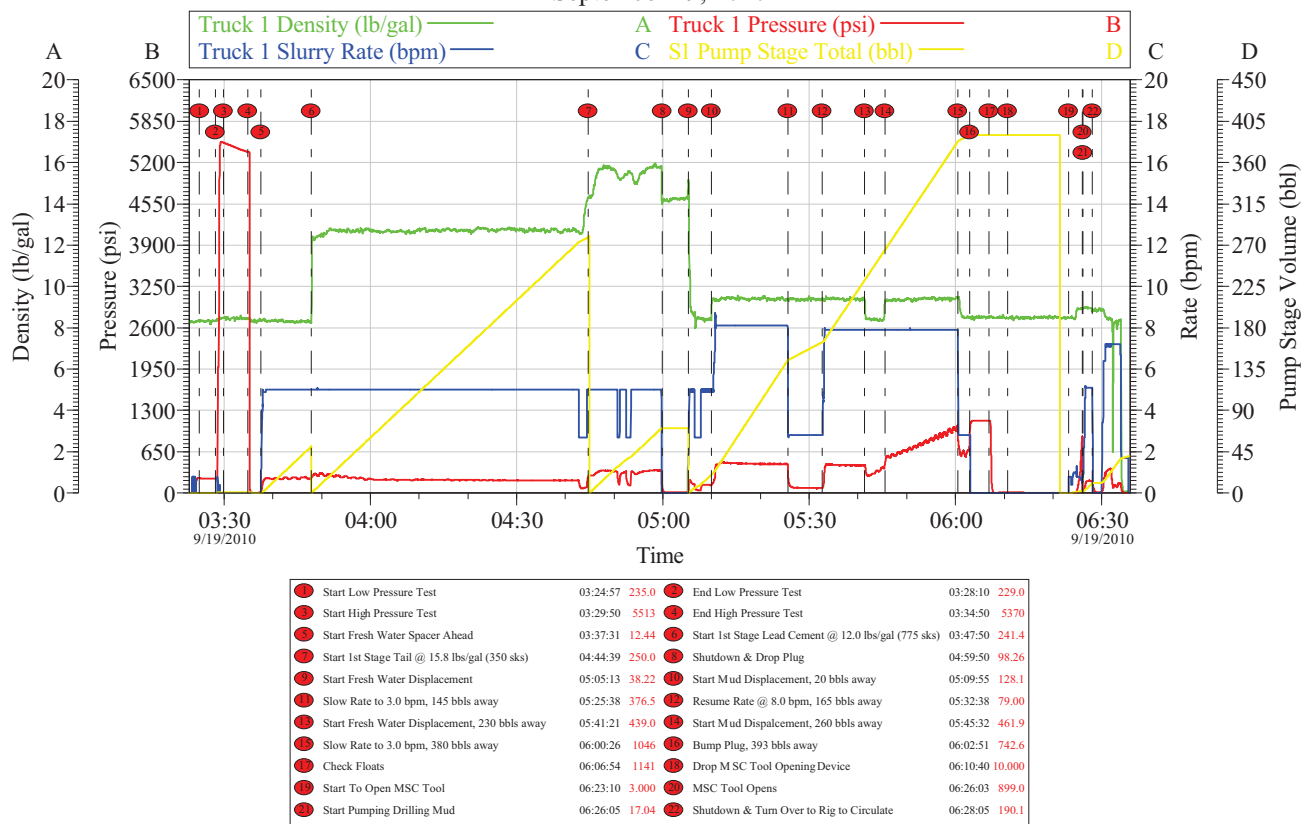
Intersection	Time	PSI	Intersection	Time	PSI
1 Start Low Pressure Test	03:24:57	235.0	2 End Low Pressure Test	03:28:10	229.0
3 Start High Pressure Test	03:29:50	5513	4 End High Pressure Test	03:34:50	5370

Customer: XOM	Job Date: 18-Sep-2010	Sales Order #: 7641160
Well Description: PCU 197-36A2	Job Type: 10 3/4" 2 Stage Surface	

OptiCem v6.3.3
19-Sep-10 03:45

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ExxonMobil Corporation
PCU 197-36A2, 10 3/4" 2 Stage Surface, 1st Stage
September 19, 2010



Customer: XOM
Well Description: PCU 197-36A2

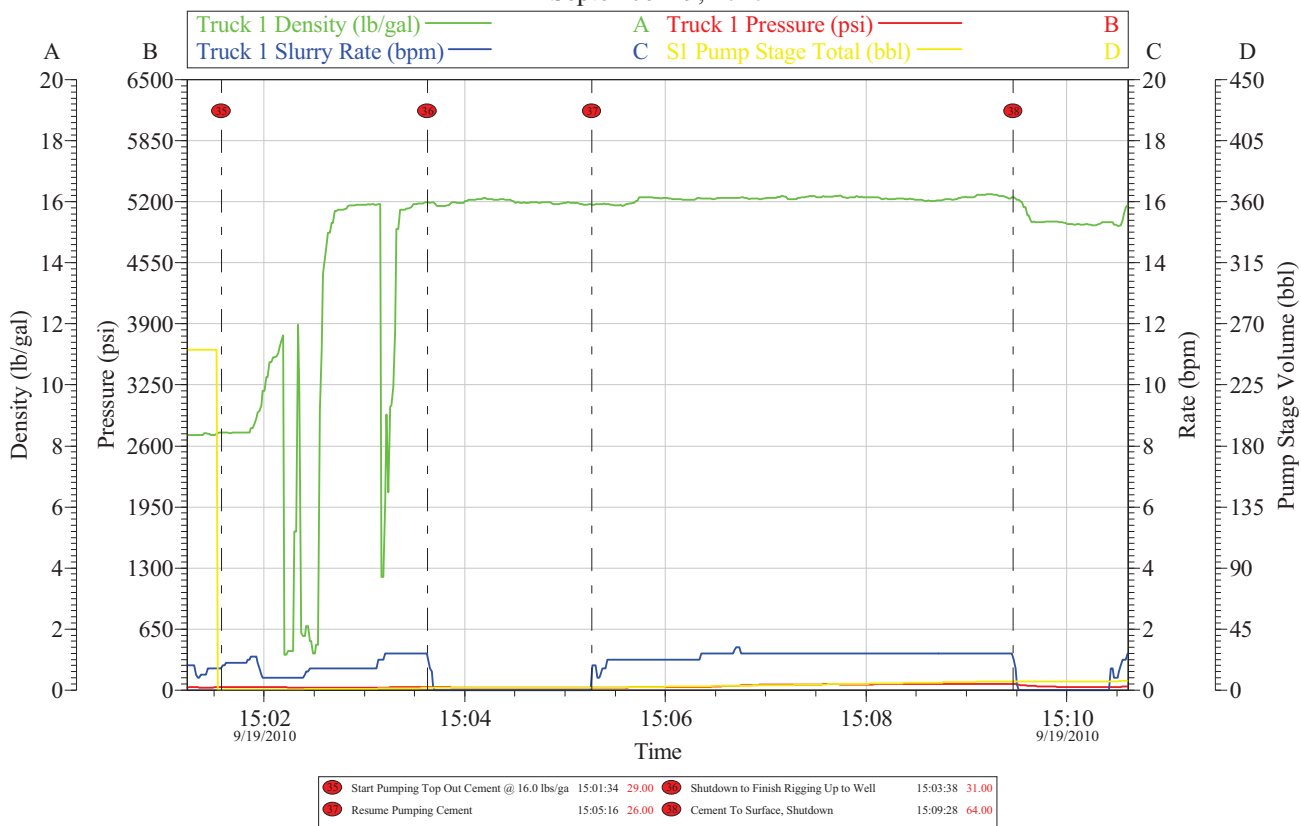
Job Date: 18-Sep-2010
Job Type: 10 3/4" 2 Stage Surface

Sales Order #: 7641160

OptiCem v6.3.3
19-Sep-10 12:20

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ExxonMobil Corporation
PCU 197-36A2, 10 3/4" 2 Stage Surface, Top Out
September 19, 2010



Customer: XOM	Job Date: 18-Sep-2010	Sales Order #: 7641160
Well Description: PCU 197-36A2	Job Type: 10 3/4" 2 Stage Surface	

OptiCem v6.3.3
19-Sep-10 15:48