

Cement Details

Description	Cementing Start Date	Cementing End Date	Wellbore Name
Surface Casing Cement	3/24/2014 01:47	2/24/2014 04:00	Original Hole

Comment

PUMP CEMENT JOB AS FOLLOWS:
 REVIEW CRITICAL JSA
 PUMP 2 BBL WATER
 TEST LINES TO 3000 PSI FOR 5 MIN / GOOD
 PUMP 50 BBLs CLEAN SPACER, 10.5 PPG, 3.86 YIELD @ 5 BPM.
 DROPPED BOTTOM PLUG - WITNESSED BY COP SUPERVISOR.
 PUMP LEAD 480 SX, 219 BBLs, 12 PPG, 2.57 YIELD, SWIFTCEM B2 CEMENT.
 PUMPED LEAD @ 7 BPM.
 PUMP TAIL - 200 SX, 71.5 BBLs, 13.0 PPG, 2.01 YIELD, SWIFTCEM B2 CEMENT.
 PUMPED TAIL @ 6 BPM.
 DROPPED TOP PLUG - WITNESSED BY COP SUPERVISOR.
 WASH OUT
 PUMPED 163 BBL FRESH WATER DISPLACEMENT
 PUMPED AT 6.5 BPM TO 100 BBL TOTAL DISPLACEMENT
 PUMPED AT 5.0 BPM TO 145 BBL TOTAL DISPLACEMENT
 PUMPED AT 3.0 BPM TO 158 BBL TOTAL DISPLACEMENT
 PUMPED AT 2.2 BPM TO 163.3 BBL TOTAL DISPLACEMENT
 FCP WAS 568 PSI
 BUMPED WITH 1126 PSI
 HELD FOR 5 MIN / BLEED BACK 1.25 BBL
 FLOATS HELD

100% RETURNS THROUGHOUT CEMENT JOB.

93 BBLs CEMENT RETURNED TO SURFACE.

Cement Stages

Stage # 1

Description		Objective	Top Depth (ftKB)		Bottom Depth (ftKB)		Full Return?	Vol Cemen...	Top Plug?	Btm Plug?
Surface Casing Cement		CEMENT TO SURFACE	24.0		2,157.9		Yes	93.0	Yes	Yes
Q Pump Init (bbl/m...)	Q Pump Final (bbl/...	Q Pump Avg (bbl/...	P Pump Final (psi)	P Plug Bump (psi)	Recip?	Stroke (ft)		Rotated?	Pipe RPM (rpm)	
7	2	6	568.0	1,126.0	No			No		
Tagged Depth (ftKB)		Tag Method		Depth Plug Drilled Out To (ftKB)			Drill Out Diameter (in)			

Comment

Cement Fluids & Additives

Fluid

Fluid Type	Fluid Description	Estimated Top (ftKB)	Est Btm (ftKB)	Amount (sacks)	Class	Volume Pumped (bbl)
Lead Cement		124.0	1,646.0	480	SWIFTCEM	219.0
Yield (ft³/sack)	Mix H2O Ratio (gal/sa...)	Free Water (%)	Density (lb/gal)	Plastic Viscosity (cP)	Thickening Time (hr)	CmprStr 1 (psi)
2.57	15.14		12.00			

Additives

Additive	Type	Concentration	Conc Unit label
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Fluid

Fluid Type	Fluid Description	Estimated Top (ftKB)	Est Btm (ftKB)	Amount (sacks)	Class	Volume Pumped (bbl)
Tail Cement		1,646.0	2,157.9	200	SWIFTCEM	71.5
Yield (ft³/sack)	Mix H2O Ratio (gal/sa...)	Free Water (%)	Density (lb/gal)	Plastic Viscosity (cP)	Thickening Time (hr)	CmprStr 1 (psi)
2.01	11.03		13.00			

Additives

Additive	Type	Concentration	Conc Unit label
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HALLIBURTON

iCem[®] Service

CONOCO/PHILLIPS COMPANY EBUSINESS

For:

Date: Monday, February 24, 2014

cottonwood creek

Case 1

Sincerely,

Field Ticket Number: 0901137022	Field Ticket Date: 2/24/2014	Planning Order #: NA
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Bill To: CONOCO/PHILLIPS COMPANY EBUSINESS DO NOT MAIL- 600 N DAIRY ASHFORD HOUSTON 77079	Job Name: Surface Casing Order Type: ZOH Well Name: Cottonwood Creek 4-65-27-1H Company Code: 1100 Customer PO No.: NA Shipping Point: Fort Lupton, CO, USA Sales Office: Rocky Mountains BD Well Type: OIL Well Category: Development
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Ship To: COTTONWOOD CREEK 4-65-27-1H,ARAPAHO SEC. 27-T4S-R65W WATKINS 80137
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Material	Description	QTY	UOM	Unit Amount	Gross Amount	Discount	Net Amount
7521	CMT SURFACE CASING BOM	1	JOB	0.00	0.00		0.00
2	MILEAGE FOR CEMENTING CREW Number of Units	80 1	MI	5.76	460.80	67.000 %	152.06
1	ZI-MILEAGE FROM NEAREST HES BASE,/UNIT Number of Units	80 1	MI	9.79	783.20	67.000 %	258.46
16091	ZI - PUMPING CHARGE FEET/METERS (FT/M) DEPTH	1 FT 2112	EA	5,584.00	5,584.00	67.000 %	1,842.72
139	ADC (AUTO DENSITY CTRL) SYS, /JOB,ZI ENTER FEET/METER/JOB/DAY NUMBER OF JOBS NUMBER OF UNITS	1 JOB 1 1	JOB	2,275.00	2,275.00	67.000 %	750.75
130104	PORT. DATA ACQUIS. W/OPTICEM RT W/HES DAYS OR PARTIAL DAY(WHOLE NO.)	1 1	EA	2,549.00	2,549.00	67.000 %	841.17
114	R/A DENSOMETER W/CHART RECORDER,/JOB,ZI NUMBER OF UNITS	1 1	JOB	1,285.00	1,285.00	67.000 %	424.05
90	ZI QUICK LATCH ATTACHMENT INCHES/MILLIMETERS (IN/MM) SIZE IN INCHES/MILLIMETER	1 IN 9.625	JOB	616.00	616.00	67.000 %	203.28
74038	ZI PLUG CONTAINER RENTAL-1ST DAY HR/DAY/WEEK/MTH/YEAR/JOB/RUN DAYS OR FRACTION (MIN1)	1 DAY 1	EA	1,322.00	1,322.00	67.000 %	436.26
683670	CMT, Cement Winter Surcharge	1	EA	1,000.00	1,000.00		1,000.00
7	ENVIRONMENTAL CHARGE,/JOB,ZI	1	JOB	134.00	134.00		134.00
8	IRON SAFETY INSPECTION SURCHARGE /JOB ZI	1	JOB	83.00	83.00		83.00
372867	Cmt PSL - DOT Vehicle Charge, CMT	4	EA	241.00	964.00		964.00
86954	ZI FUEL SURCHG-CARS/PICKUPS<1 1/2TON Number of Units	80 1	MI	0.24	19.20		19.20
86955	ZI FUEL SURCHG-HEAVY TRKS >1 1/2 TON Number of Units	80 1	MI	0.72	57.60		57.60
87605	FUEL SURCHG-CMT & CMT ADDITIVES NUMBER OF TONS	40 39.02	MI	0.24	9.60		9.60
76400	MILEAGE,CMT MTLS DEL/RET MIN NUMBER OF TONS	40 39.02	MI	3.35	5,228.68	67.000 %	1,725.46
3965	HANDLE&DUMP SVC CHRGR, CMT&ADDITIVES,ZI Unit of Measurement NUMBER OF EACH	866 EA 1	CF	5.49	4,754.34	67.000 %	1,568.93
719269	SBM, CMT CleanSpacer III	50	BBL	250.00	12,500.00	67.000 %	4,125.00

Field ticket number: 0901137022

Field ticket date: 2/24/2014

Field Ticket Number: 0901137022		Field Ticket Date: 2/24/2014		Planning Order #: NA	
Bill To: CONOCO/PHILLIPS COMPANY EBUSINESS DO NOT MAIL- 600 N DAIRY ASHFORD HOUSTON 77079		Job Name: Surface Casing Order Type: ZOH Well Name: Cottonwood Creek 4-65-27-1H Company Code: 1100 Customer PO No.: NA Shipping Point: Fort Lupton, CO, USA Sales Office: Rocky Mountains BD Well Type: OIL Well Category: Development			
Ship To: COTTONWOOD CREEK 4-65-27-1H,ARAPAHO SEC. 27-T4S-R65W WATKINS 80137					

Material	Description	QTY	UOM	Unit Amount	Gross Amount	Discount	Net Amount
452990	CMT, SwiftCem (TM) system	480	SK	0.00	30,785.49	20,626.29 \$	10,159.20
452990	CMT, SwiftCem (TM) system	200	SK	0.00	12,854.80	8,612.72 \$	4,242.08
100008028	CHEM, SUGAR,GRANULATED, 50LB BAG	0	LB	0.00	0.00		0.00
100008028	CHEM, SUGAR,GRANULATED, 50LB BAG	50	LB	6.44	322.00	67.000 %	106.26
101201084	CHEM,RHODAMINE RED LIQ DYE (2)	2	LB	160.00	320.00	67.000 %	105.60
Totals USD					83,907.71	54,699.03	29,208.68

Field Ticket Signature

Field Ticket Number: 0901137022		Field Ticket Date: 2/24/2014	Planning Order #: NA
Bill To: CONOCO/PHILLIPS COMPANY EBUSINESS DO NOT MAIL- 600 N DAIRY ASHFORD HOUSTON 77079		Job Name: Surface Casing Order Type: ZOH Well Name: Cottonwood Creek 4-65-27-1H Company Code: 1100 Customer PO No.: NA Shipping Point: Fort Lupton, CO, USA Sales Office: Rocky Mountains BD Well Type: OIL Well Category: Development	
Ship To: COTTONWOOD CREEK 4-65-27-1H,ARAPAHO SEC. 27-T4S-R65W WATKINS 80137			

THIS OUTPUT DOES NOT INCLUDE TAXES. APPLICABLE SALES TAX WILL BE BILLED ON THE FINAL INVOICE. CUSTOMER HEREBY ACKNOWLEDGES RECEIPT OF THE MATERIALS AND SERVICES DESCRIBED ABOVE, ON ANY PRECEDING PAGES, AND ATTACHED DOCUMENTS.

Gross Amount Total:	83,907.71
Item Discount Total:	54,699.03
Net Amount Total:	29,208.68 USD

Customer Representative Signature: _____

Date: _____

Clint Valentine

Vaughn Oteri

Customer Representative

Halliburton Representative

Was our HSE performance satisfactory? (Health, Safety, Environment)

☐ Yes☐ No

Were you satisfied with our equipment?

☐ Yes☐ No

Were you satisfied with our people?

☐ Yes☐ No

Comments:

Customer Stamp (if applicable):

The Road to Excellence Starts with Safety

Sold To #: 352431 Ship To #: 3284356 Quote #: 0021827790 Sales Order #: 0901137022

Customer: CONOCO/PHILLIPS COMPANY EBUSINESS Customer Rep: CLINT

Well Name: Cottonwood Creek Well #: 4-65-27-1H API/UWI #: 05-005-07216

Field: City (SAP): WATKINS County/Parish: ARAPAHOE State: COLORADO

Legal Description:

Contractor: Rig/Platform Name/Num: H&P 276

Job BOM: 7521

Well Type: OIL

Sales Person: HALAMERICA\HX38199 Srvc Supervisor: Vaughn Oteri

Job

Formation Name	
Formation Depth (MD)	Top Bottom
Form Type	BHST
Job depth MD	2168ft Job Depth TVD
Water Depth	Wk Ht Above Floor
Perforation Depth (MD)	From To

Well Data										
Description	New / Used	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Casing		16	15.5				0	100		
Casing		9.625	8.921	36	STC	J-55	0	2112		
Open Hole Section			13.5				100	2112		

Tools and Accessories									
Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make	
Guide Shoe	9.625	1		2112	Top Plug	9.625	1	HES	
Float Shoe	9.625	1			Bottom Plug	9.625	1	HES	
Float Collar	9.625	1			SSR plug set	9.625	1	HES	
Insert Float	9.625	1			Plug Container	9.625	1	HES	
Stage Tool	9.625	1			Centralizers	9.625	1	HES	

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

Fluid Data										
Stage/Plug #: 1										
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	Clean Spacer III	CLEANS PACER III	50	bbl	10.5					
0 gal/bbl		FRESH WATER								

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	SwiftCem B1	SWIFTCEM (TM) SYSTEM	480	Sack/Ton	12	2.57		8	15.09
15.09 Gal		FRESH WATER							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	SwiftCem B1	SWIFTCEM (TM) SYSTEM	200	Sack/Ton	13	2.01		8	10.99
10.99 Gal		FRESH WATER							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
4	Displacement		0	bbl	8.5				
Cement Left In Pipe		Amount	45 ft		Reason		Shoe Joint		
Comment									

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1.0 Job Design

2.0 Temperature Modeling

3.0 Real-Time Job Summary

3.1 Stage Summary - Liquid Volume, Density, & Design Shutdown

3.2 Stage Summary - Pump Pressure & ECD

3.3 Stage Summary - Pump Rate & Nitrogen Rate

3.4 Shutdown Summary

HALLBURTON

CONOCO/PHILLIPS COMPANY EBUSINESS
CONOCO PHILLIPS SURFACE COTTONWOOD CREEK SO#9001137022

Case 1

3.1 Job Event Log

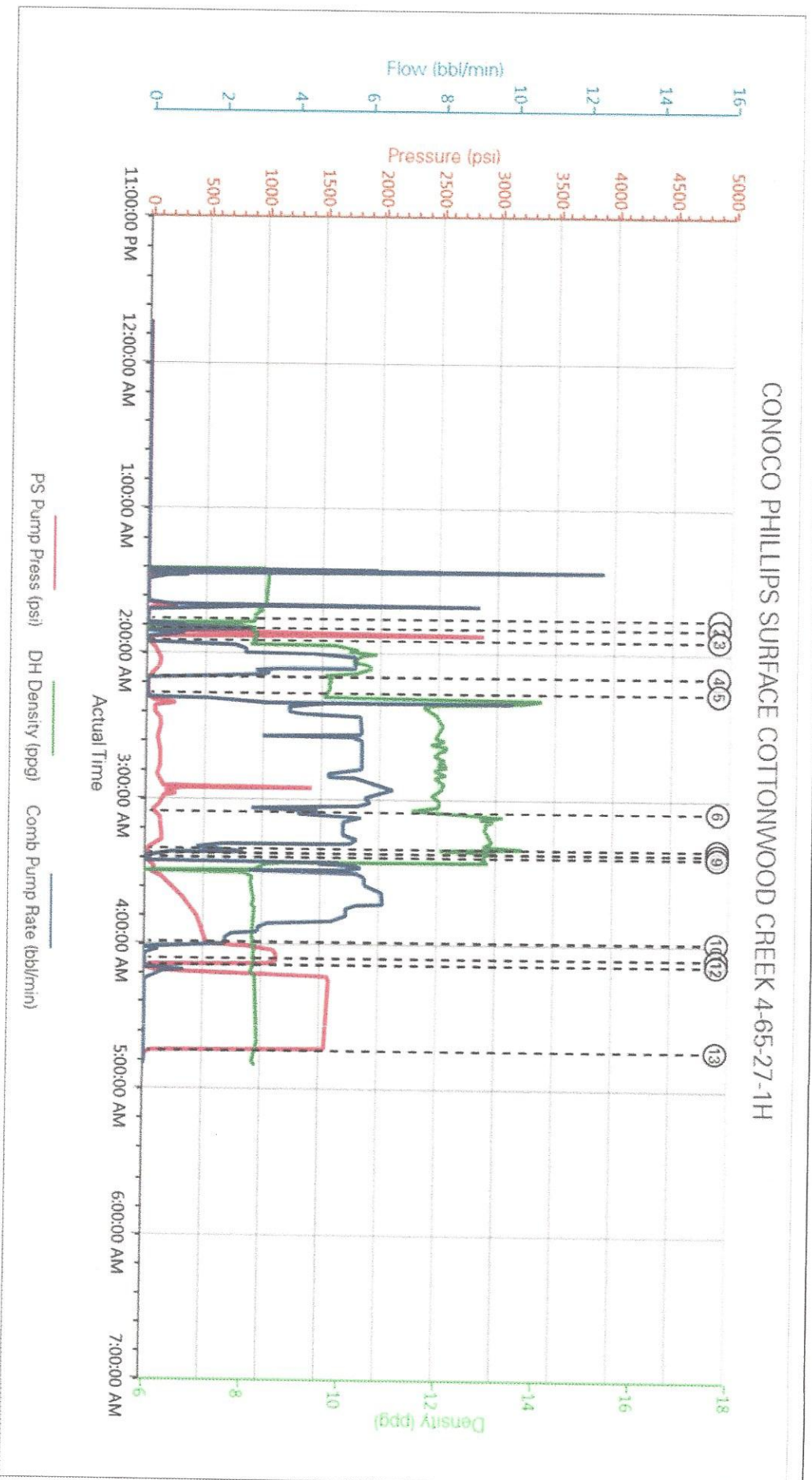
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	PS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Comment
Event	1	Start Job	Start Job	2/24/2014	01:47:15	COM6	2.00	8.15	0.00	PRELOADED CEMENT HEAD WITH BOTH PLUGS WITNESSED BY COMPANY REP
Event	2	Test Lines	Test Lines	2/24/2014	01:51:20	COM6	2911	8.12	0.00	TESTED PUMPS AND LINES FOUND NO LEAKS
Event	3	Pump Spacer 1	Pump Spacer 1	2/24/2014	01:56:14	COM6	108	8.16	6	MIXED 10.5PPG CLEAN SPACER WITH FRESH WATER
Event	4	Drop Top Plug	Drop Top Plug	2/24/2014	02:11:23	COM6	7.00	9.86	0.00	RELEASED PLUG WITNESSED BY COMPANY REP
Event	5	Pump Lead Cement	Pump Lead Cement	2/24/2014	02:18:15	COM6	215	9.66	6	MIXED 12.0PPG SW/FTCEM WITH FRESH WATER
Event	6	Pump Tail Cement	Pump Tail Cement	2/24/2014	03:06:54	COM6	113.00	13.05	5.20	MIXED 13.0PPG SW/FTCEM WITH FRESH WATER
Event	7	Shutdown	Shutdown	2/24/2014	03:22:09	COM6	18.00	12.96	0.00	
Event	8	Drop Top Plug	Drop Top Plug	2/24/2014	03:24:03	COM6	8.00	12.96	0.00	RELEASED PLUG WITNESSED BY COMPANY REP
Event	9	Pump Displacement	Pump Displacement	2/24/2014	03:25:39	COM6	400	13.01	6.5	PUMP FRESH WATER TO DISPLACE CEMENT
Event	10	Bump Plug	Bump Plug	2/24/2014	04:00:47	COM6	894.00	8.28	2.0	BUMP PLUG 500PSI OVER FINAL PUMP PRESSURE
Event	11	Other	Other	2/24/2014	04:07:32	COM6	1126.00	8.29	0.00	RELEASE PRESSURE BACK TO PUMP TRUCK TO CHECK FLOATS
Event	12	Pressure Up Well	Pressure Up Well	2/24/2014	04:10:19	COM6	1580	8.18	.25	PRESSURE UP WELL TO TEST CASING PER CONOCO POLICY
Event	13	End Job	End Job	2/24/2014	04:45:34	COM6	2.00	8.32	0.00	GOT 50BBL OF SPACER BACK TO SURFACE AND 93BBL OF CEMENT BACK TO SURFACE

HALLIBURTON

CONOCO/PHILLIPS COMPANY EBUSINESS
CONOCO PHILLIPS SURFACE COTTONWOOD CREEK SO#9001137022
Case 1

4.0 Custom Graphs

4.1 Custom Graph



5.0 Appendix

5.1 One-Minutes Real-Time Data Listing
