HALLIBURTON

QUICKSILVER RESOURCES INC-EBUSINESS
DO NOT MAIL-801 CHERRY ST
FORT WORTH, Texas

Bret Grandbouche 24-02H

DHS 6

Post Job Summary
Cement Surface Casing

Prepared for: Ryan Hord
Date Prepared: October 7, 2011
Version: 1

Service Supervisor: FUCHS, BENJAMIN

Submitted by: Joshua Anglin

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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
Open Hole Section	Surface Open Hole		12.250		0.00	1,200.00			100.00	0.00
Casing	Surface Casing	9.63	8.921	36.00	0.00	1,200.00				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	FRESH WATER	8.33	0.00	10.0 bbl	10.0 bbl
1	2	Spacer	SUPER FLUSH 101	10.00	0.00	20.0 bbl	20.0 bbl
1	3	Spacer	FRESH WATER	8.33	0.00	10.0 bbl	10.0 bbl
1	4	Cement Slurry	VariCem V1	12.30		200.0 sacks	200.0 sacks
1	5	Cement Slurry	VariCem V1	13.50		195.0 sacks	195.0 sacks
1	6	Mud	Displacement	0.00	0.00	90.0 bbl	90.0 bbl
1	7	Cement Slurry	HalCem TopOut	15.60			90.0 bbl

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Fluids Pumped

Stage/Plug # 1 **Fluid 1:** FRESH WATER
DUMMY MUD / FLUSH / SPACER SBC MATERIAL

Fluid Density:	8.33 lbm/gal
Fluid Volume:	10.00 bbl
Pump Rate:	0.00 bbl/min

Stage/Plug # 1 **Fluid 2:** SUPER FLUSH 101
SUPER FLUSH 101 - SBM (12199)

Fluid Density:	10.00 lbm/gal
Fluid Volume:	20.00 bbl
Pump Rate:	0.00 bbl/min

Stage/Plug # 1 **Fluid 3:** FRESH WATER
DUMMY MUD / FLUSH / SPACER SBC MATERIAL

Fluid Density:	8.33 lbm/gal
Fluid Volume:	10.00 bbl
Pump Rate:	0.00 bbl/min

Stage/Plug # 1 **Fluid 4:** VariCem V1
VARICEM (TM) CEMENT
0.125 lbm Poly-E-Flake
3 lbm Gilsonite

Fluid Weight:	12.30 lbm/gal
Slurry Yield:	2.25 ft3/sack
Total Mixing Fluid:	12.67 Gal
Surface Volume:	200.0 sacks
Sacks:	200.0 sacks
Calculated Fill:	700.00 ft
Calculated Top of Fluid:	0.00 ft
Estimated Top of Fluid:	

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Stage/Plug # 1 **Fluid 5:** VariCem V1

VARICEM (TM) CEMENT

0.125 lbm Poly-E-Flake

3 lbm Gilsonite

Fluid Weight:	13.50 lbm/gal
Slurry Yield:	1.73 ft3/sack
Total Mixing Fluid:	8.77 Gal
Surface Volume:	195.0 sacks
Sacks:	195.0 sacks
Calculated Fill:	500.00 ft
Calculated Top of Fluid:	700.00 ft
Estimated Top of Fluid:	

Stage/Plug # 1 **Fluid 6:** Displacement

Fluid Density:	0.00 lbm/gal
Fluid Volume:	90.00 bbl
Pump Rate:	0.00 bbl/min
Fluid Gels:	
Mud PV/YP:	

Stage/Plug # 1 **Fluid 7:** HalCem TopOut

HALCEM (TM) SYSTEM

2 % Calcium Chloride

Fluid Weight:	15.60 lbm/gal
Slurry Yield:	1.20 ft3/sack
Total Mixing Fluid:	5.20 Gal
Estimated Top of Fluid:	

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Job Summary

Job Information

Job Start Date	9/28/2011 2:12:00 AM
Job MD	1,208.0 ft
Job TVD	1,208.0 ft
Height of Plug Container/Swage Above Rig Floor	3.0 ft
Mud Type	LSND
Actual Mud Density	9 lbm/gal
Time Circulated before job	0.50 hour(s)
Rate at Which Well was Circulated	8.000 bbl/min
Pipe Movement During Hole Circulation	None
Time From End Mud Circ. to Job Start	15.00 minute
Pipe Movement During Cementing	Reciprocated
Calculated Displacement	89.68 bbl
Amount of Cement Returns	35.00 bbl
Job Displaced by (rig/halco)	Cement Unit HP Pumps

Cementing Equipment

Pipe Centralization	Through Entire Cement Column
Did Float Equipment Hold?	Yes
Brand of Plug set used?	HES
Did Plugs Bump?	Yes
Calculated Pressure to Bump Plugs	280.0 psig

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Service Supervisor Reports

Job Log

Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pump		Pressure (psig)		Comments
09/27/2011 11:00		Call Out							Crew called out for job
09/27/2011 12:45		Safety Meeting - Departing Location							Discuss all travel related safety issues with crew
09/27/2011 13:00		Crew Leave Yard							Convoy to location for safety
09/27/2011 15:30		Arrive at Location from Service Center							Rig crew drilling upon arrivial to location
09/27/2011 15:45		Waiting - Arrived Early to Location - Start Time							Company Man requested we wait off location until they were ready for us
09/27/2011 19:00		Safety Meeting - Assessment of Location							Identify and discuss all hazards on location with crew
09/27/2011 23:00		Other							Spot equipment using spotters
09/27/2011 23:15		Safety Meeting - Pre Rig-Up							Discuss all rig up related safety issues with crew
09/27/2011 23:30		Rig-Up Equipment							Be careful, no one gets hurt
09/28/2011 01:30		Safety Meeting - Pre Job							Discuss all job related safety issues and pump schedule with crew and rig crew
09/28/2011 02:12	1	Start Job							Everyone get equipment ready

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Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pump		Pressure (psig)		Comments
09/28/2011 02:12	2	Pump Water	2					30.0	Fill lines with 3 bbls fresh water for pressure test
09/28/2011 02:15	3	Pressure Test	0.5					5000.0	Test lines to 5000 psi
09/28/2011 02:19	4	Pump Water	4					36.0	Break circulation with 10 bbls fresh water
09/28/2011 02:22	5	Pump Spacer	4					40.0	Pump 20 bbls superflush @ 10 ppg
09/28/2011 02:25	6	Pump Water	4					75.0	Pump 10 bbls fresh water spacer
09/28/2011 02:30	7	Pump Lead Cement	4					96.0	Pump 80 bbls Vericem lead cement mixed @ 12.3 ppg 2.25 yield 12.67 gal/sk (200 sks)
09/28/2011 02:50	8	Pump Tail Cement	4					120.0	Pump 60 bbls Vericem tail cement mixed @ 13.5 ppb 1.73 yield 8.77 gal/sk (195 sks)
09/28/2011 03:02	9	Shutdown							Cement away
09/28/2011 03:04	10	Drop Plug							Verify that plug is away
09/28/2011 03:06	11	Pump Displacement	6	80				175.0	Pump 90 bbls fresh water displacement
09/28/2011 03:19	12	Cement Returns to Surface	6	55					35 bbls cement to surface
09/28/2011 03:21	13	Slow Rate	3	80					Slow rate with last 10 bbls to land the plug
09/28/2011 03:23	14	Bump Plug	3						Land plug @ 440 + 500 psi over
09/28/2011 03:25	15	Check Floats							Floats hold - 1 bbls back to truck
09/28/2011 03:26	16	End Job							Job Complete

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Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pump		Pressure (psig)		Comments
09/28/2011 03:30		Safety Meeting - Pre Rig-Down							Discuss all rig down safety related issues with crew
09/28/2011 03:45		Rig-Down Equipment							Be careful, no one gets hurt
09/28/2011 05:45		Safety Meeting - Departing Location							Discuss all travel related safety issues with crew
09/28/2011 06:00		Crew Leave Location							Convoy to yard for safety, thank you for your business

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Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 346707	**Ship To #:** 2881011	**Quote #:**	**Sales Order #:** 8501563
Customer: QUICKSILVER RESOURCES INC-EBUSINESS		**Customer Rep:** Hord, Ryan	
Well Name: Bret Grandbouche	**Well #:** 24-02H		**API/UWI #:**
Field:	**City (SAP):** CRAIG	**County/Parish:** Moffat	**State:** Colorado
Contractor: DHS	**Rig/Platform Name/Num:** 6		
Job Purpose: Cement Surface Casing			
Well Type: Exploratory / Wildcat	**Job Type:** Cement Surface Casing		
Sales Person: SCOTT, KYLE	**Srvc Supervisor:** FUCHS, BENJAMIN	**MBU ID Emp #:** 470584	

Job Personnel

HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #
BROWN, CHRISTOPHER Paul		491062	FUCHS, BENJAMIN Reinhard		470584	PORTER, MICHAEL James		491145
SLAUGH, CODY B		104465	VOORHIS, WALTER T		472268	WEYERMAN, JEREMY Todd		477287

Equipment

HES Unit #	*Distance-1 way*	HES Unit #	*Distance-1 way*	HES Unit #	*Distance-1 way*	HES Unit #	*Distance-1 way*
10616259	120 mile	10829452	120 mile	11023106	120 mile	11041164	120 mile
11071474	120 mile	11263210	120 mile	11304256	120 mile	11360879	120 mile
11512092	120 mile	HBL-2000-2	120 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			
Formation Depth (MD)	**Top**		**Bottom**
Form Type		**BHST**	
Job depth MD	1208. ft	**Job Depth TVD**	1208. ft
Water Depth		**Wk Ht Above Floor**	3. ft
Perforation Depth (MD)	*From*		**To**

Job Times

	Date	Time	Time Zone
Called Out	27 - Sep - 2011	11:00	MST
On Location	27 - Sep - 2011	15:30	MST
Job Started	28 - Sep - 2011	02:12	MST
Job Completed	28 - Sep - 2011	03:26	MST
Departed Loc	28 - Sep - 2011	06:00	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
Surface Open Hole				12.25				.	1200.		
Surface Casing	Unknown		9.625	8.921	36.		J-55	.	1200.		

Sales/Rental/3rd Party (HES)

Description	Qty	Qty uom	Depth	Supplier
PLUG,CMTG,TOP,9 5/8,HWE,8.16 MIN/9.06 MA	1	EA		

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**			

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Cementing Job Summary

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 ft3/sk	Mix Fluid Gal/sk	Rate bbl/min	Total Mix Fluid Gal/sk
1	**FRESH WATER**		**10.00**	**bbl**	**8.33**	**.0**	**.0**	**.0**	
2	**SUPER FLUSH 101**	**SUPER FLUSH 101 - SBM (12199)**	**20.00**	**bbl**	**10.**	**.0**	**.0**	**.0**	
3	**FRESH WATER**		**10.00**	**bbl**	**8.33**	**.0**	**.0**	**.0**	
4	**VariCem V1**	**VARICEM (TM) CEMENT (452009)**	**200.0**	**sacks**	**12.3**	**2.25**	**12.67**		**12.67**
	0.125 lbm	POLY-E-FLAKE (101216940)							
	3 lbm	GILSONITE, 50 LB BAG (100001618)							
	12.666 Gal	FRESH WATER							
5	**VariCem V1**	**VARICEM (TM) CEMENT (452009)**	**195.0**	**sacks**	**13.5**	**1.73**	**8.77**		**8.77**
	0.125 lbm	POLY-E-FLAKE (101216940)							
	3 lbm	GILSONITE, 50 LB BAG (100001618)							
	8.766 Gal	FRESH WATER							
6	**Displacement**		**90.00**	**bbl**	**.**			**.0**	
7	**HalCem TopOut**	**HALCEM (TM) SYSTEM (452986)**		**sacks**	**15.6**	**1.2**	**5.2**		**5.2**
	2 %	CALCIUM CHLORIDE - HI TEST PELLET (100005053)							
	5.2 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**	***40 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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Lab Data

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Cementing Rockies, Vernal

LAB RESULTS - Lead

Job Information

Request/Slurry	179182/1	**Rig Name**	DHS DRILLING #6	**Date**	26/SEP/2011
Submitted By	Craig Dube	**Job Type**	Surface Casing	**Bulk Plant**	Vernal
Customer	Quicksilver Resources Inc.	**Location**		**Well**	Bret Grandbouche 24-02H

Well Information

Casing/Liner Size	10 3/4"	**Depth MD**	1200 ft	**BHST**	96 F
Hole Size	14 3/4"	**Depth TVD**	1200 ft	**BHCT**	82 F

Drilling Fluid Information

Mud Company	Type	Density	PV/YP

Cement Information - Lead Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.
3.000	lb/sk	Gilsonite	Bulk	Sep 27, 2011	

Cement Properties

Slurry Density	12.30	PPG
Slurry Yield	2.26	ft3/sk
Water Requirement	12.81	GPS
Total Mix Fluid	12.81	GPS

Water Source	Field (Fresh) Water	
Water Chloride	N/A	ppm

Operation Test Results Request ID 179182/1

Thickening Time, Request Test ID:1783256, 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)
82	800	14	18	03:57	04:08	04:34	04:44

Additional Comments

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Cementing Rockies, Vernal

LAB RESULTS - Tail

Job Information

Request/Slurry	179181/1	**Rig Name**	DHS DRILLING #6	**Date**	26/SEP/2011
Submitted By	Craig Dube	**Job Type**	Surface Casing	**Bulk Plant**	Vernal
Customer	Quicksilver Resources Inc.	**Location**		**Well**	Bret Grandbouche 24-02H

Well Information

Casing/Liner Size	10 3/4"	**Depth MD**	1200 ft	**BHST**	96 F
Hole Size	14 3/4"	**Depth TVD**	1200 ft	**BHCT**	82 F

Drilling Fluid Information

Mud Company		**Type**		**Density**	8.8 PPG

PV/YP

Cement Information - Tail Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.
8.89	gal/sack	Field (Fresh) Water	Lab	Sep 14, 2011	9/14/11

Cement Properties

Slurry Density	13.50	PPG
Slurry Yield	1.73	ft3/sk
Water Requirement	8.89	GPS
Total Mix Fluid	8.89	GPS
Water Source	Field (Fresh) Water	
Water Chloride	N/A	ppm

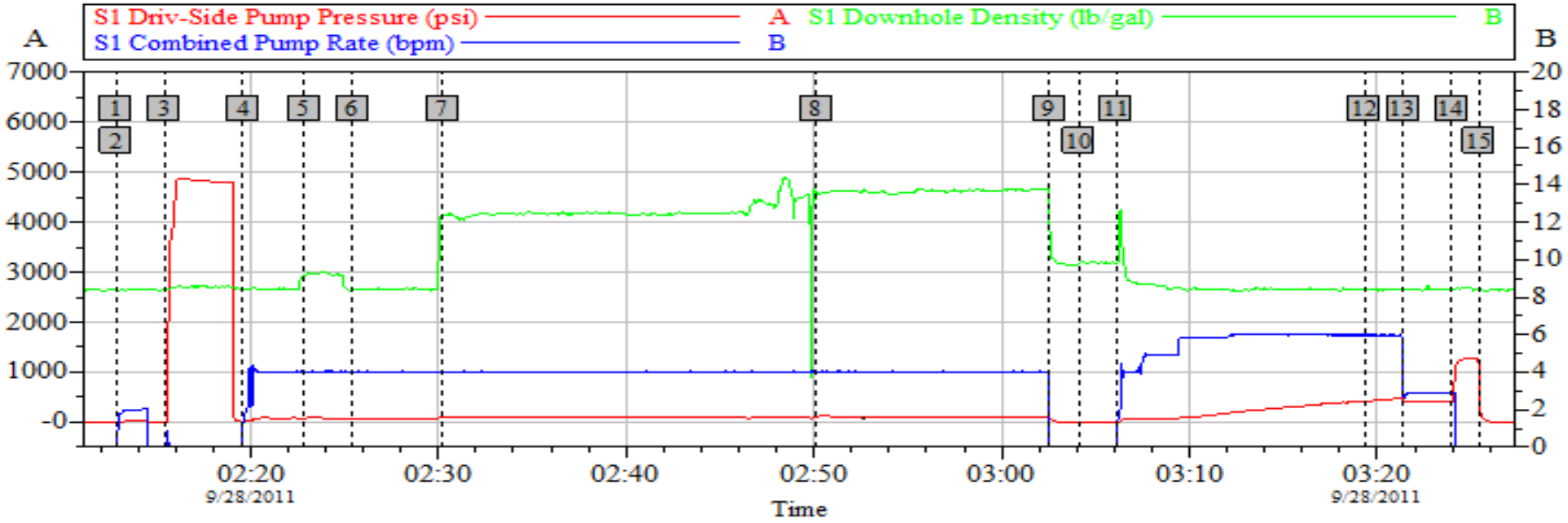
Operation Test Results Request ID 179181/1

Thickening Time, Request Test ID:1783254, 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)
82	800	14	19	01:07	01:18	01:31	01:43

Additional Comments

Quicksilver DHS 6 Bret Grandbouche 24-02H
9.625 Surface
9/28/2011



Global Event Log

1	Starting Job	02:12:50	2	Fill lines	02:12:52	3	Test Lines	02:15:26
4	Pump Spacer 1	02:19:36	5	Pump Spacer 2	02:22:51	6	Pump Spacer 1	02:25:24
7	Pump Lead Cement	02:30:13	8	Pump Tail Cement	02:50:07	9	Shutdown	03:02:30
10	Drop Plug	03:04:08	11	Pump Displacement	03:06:07	12	Cement Returns to Surface	03:19:21
13	Slow Rate	03:21:22	14	Bump Plug	03:23:56	15	Check Floats	03:25:26

Customer:	Job Date: 28-Sep-2011	Sales Order #: 8501563
Well Description:	UWI:	

OptiCem v6.4.10
28-Sep-11 03:42