

NOBLE ENERGY INC E-BUSINESS  
DO NOT MAIL-804 GRAND AVENUE  
PLATTEVILLE, Colorado

Jeanie AB10-01R

**Ensign/121**

## **Post Job Summary**

### **Cement Multiple Stages**

Prepared for: Brett Fisher  
Date Prepared:  
Version: 1

Service Supervisor: PICKELL, CHRISTOPHER

# HALLIBURTON

## Pumping Schedule

Stage /Plug #	Fluid #	Fluid Type	Fluid Name	Surface Density lbm/gal	Avg Rate bbl/min	Surface Volume	Downhole Volume
1	1	Spacer	Clean Spacer	0.08	4.00	50.0 bbl	50.0 bbl
1	2	Cement Slurry	ExpandaCem 14.2# (PumiceCem)	14.20	6.00	300.0 sacks	300.0 sacks
1	3	Mud	Rig Mud	8.6	0.00		
1	4	Spacer	Clean Spacer	10.00	0.00	10.0 bbl	10.0 bbl
1	5	Mud	Rig Mud	8.6	0.00		

## Fluids Pumped

**Stage/Plug # 1      Fluid 1:**      Clean Spacer  
DUMMY MUD / FLUSH / SPACER SBC MATERIAL

Fluid Density: 0.08 lbm/gal  
Fluid Volume: 50.00 bbl

**Stage/Plug # 1      Fluid 2:**      ExpandaCem 14.2#  
EXPANDACEM (TM) SYSTEM

Fluid Weight: 14.20 lbm/gal  
Slurry Yield: 1.42 ft<sup>3</sup>/sack  
Total Mixing Fluid: 6.18 Gal  
Surface Volume: 300.0 sacks  
Sacks: 300.0 sacks

**Stage/Plug # 1      Fluid 3:**      Rig Mud

Fluid Density: 8.6 lbm/gal

**Stage/Plug # 1      Fluid 4:**      Clean Spacer  
SPACER SBC MATERIAL

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

**Stage/Plug # 1      Fluid 5:**      Rig Mud

Fluid Density: 8.6 lbm/gal

## Service Supervisor Reports

### Job Log

Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pump		Pressure (psig)	Comments
12/16/2012 04:29		Start Job						
12/16/2012 04:39		Test Lines	1	1			3500.0	PRESSURE TEST LINES TO 3500 PSI. CHECK FOR VISIBLE LEAKS AND PRESSURE LOSS
12/16/2012 04:47		Pump Spacer 1	5.5	50			300.0	PUMP CLEAN SPACER 10 PPG 5.03 CUFT/SK 32.93 GAL/SK MIXED WITH RIG WATER
12/16/2012 04:59		Pump Cement	6	76			450.0	PUMP PUMICEM CEMENT 300 SKS 14.2 PPG 1.42 CUFT/SK 6.18 GAL/SK MIXED WITH RIG WATER
12/16/2012 05:16		Shutdown						
12/16/2012 05:17		Clean Lines						WASH PUMPS AND LINES
12/16/2012 05:22		Drop Top Plug						TOOL REP DROPPED PLUG WHILE WASHING PUMPS AND LINES
12/16/2012 05:24		Pump Displacement	6	342			1500.0	PUMP 37 BBL OF MUD THEN 10 BBL OF SPACER TO COVER THE DV TOOL THEN 294.1 BBL OF MUD
12/16/2012 06:11		Displ Reached Cmmt						DISPLACEMENT REACHED CEMENT WITH 290 BBL AWAY
12/16/2012 06:36		Shutdown					1450.0	SHUTDOWN AFTER PUMPING 5 BBL OVER CALCULATED PER THE COMPANY MAN AND HAVING NOT BUMPED THE PLUG
12/16/2012 06:37		Check Floats						FLOATS HELD. 1.5 BBL BACK TO OUR TANKS
12/16/2012 06:39		Drop Opening Device For Multiple Stage Cementer						TOOL REP DROPPED DOWNHOLE TOOLS OPEN DEVICE FOR MSC.
12/16/2012 07:21		Open Multiple Stage Cementer	2	5			1700.0	FIRST ATTEMPT AT OPENING MSC. PUMPED 5 BBL, PRESSURED UP TO 1700 PSI. NO INDICATION OF TOOL OPENING ON PRESSURE GAUGE. TRUCK JUMPED LIKE TOOL HAD OPENED. UNABLE TO ESTABLISH CIRCULATION
12/16/2012 07:25		Shutdown						SHUTDOWN AFTER PUMPING THE 5 BBL
12/16/2012 07:27		Release Casing Pressure						PRESSURE WAS RELEASED IN ORDER TO MAKE A SECOND ATTEMPT AT OPENING THE TOOL. 4.5 BBL BACK TO TUBS WHEN PRESSURE WAS RELEASED.
12/16/2012 07:29		Open Multiple Stage Cementer	1.7	5			1700.0	2ND ATTEMPT WE PUMPED ANOTHER 5 BBL TAKING PSI UP TO 1700 ONCE AGAIN. AND AGAIN NO INDICATION ON GAUGE OF TOOL OPENING WITH NO RETURNS
12/16/2012 07:32		Shutdown						SHUTDOWN TO MAKE ANOTHER ATTEMPT
12/16/2012 07:33		Release Casing Pressure						PRESSURE WAS RELEASED. 4.5 BBL BACK TO TUBS
12/16/2012 07:34		Open Multiple Stage Cementer	2	5			1700.0	3RD ATTEMPT WE PUMPED 5 BBL AT 1700 PSI AND WITH NO RETURNS
12/16/2012 07:36		Shutdown						SHUTDOWN TO COME UP WITH A NEW PLAN
12/16/2012 07:37		Release Casing Pressure						PRESSURE WAS RELEASED. 4.5 BBL BACK TO TUBS ONCE AGAIN.

# HALLIBURTON

Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pump		Pressure (psig)		Comments
12/16/2012 07:48		Circulate Well	5.5	26				2400.0	THE LAST TIME WITH THE PERMISSION OF THE COMPANY MAN WE SET KICK OUTS AT 3000 PSI AND ATTEMPTED TO GET RATE INTO IT TO TRY AND MOVE FLUID HAVING BELIEVED THAT THE TOOL WAS OPEN. 26 BBL WAS PUMPED WITH NO RETURNS ESTABLISHED.
12/16/2012 07:52		Shutdown						1638.0	SHUTDOWN AND COMPANY MAN DISCUSSED WITH HIS BOSS WHAT THE PLAN WOULD BE FROM THAT POINT
12/16/2012 10:03		Release Casing Pressure						1355.0	PRESSURE WAS RELEASED WITH 2 BBL COMING BACK TO OUR TANKS
12/16/2012 11:30		End Job							JOB WAS STOPPED AND RIGGED DOWN AFTER IT WAS DETERMINED CEMENTING WOULD NOT BE POSSIBLE AT THIS TIME.
12/16/2012 12:00		Other							340 SKS OF TUNED LIGHT, 125 SK OF VARICEM, 95 SKS OF PREMIUM G WERE CHARGED TO CUSTOMER

## The Road to Excellence Starts with Safety

<b>Sold To #:</b> 345242	<b>Ship To #:</b> 2967530	<b>Quote #:</b>	<b>Sales Order #:</b> 900078395
<b>Customer:</b> NOBLE ENERGY INC E-BUSINESS		<b>Customer Rep:</b> ., Huey	
<b>Well Name:</b> Jeanie		<b>Well #:</b> AB10-01R	<b>API/UWI #:</b>
<b>Field:</b> Wattenberg	<b>City (SAP):</b> EATON	<b>County/Parish:</b> Weld	<b>State:</b> Colorado
<b>Contractor:</b> Ensign		<b>Rig/Platform Name/Num:</b> Ensign 121	
<b>Job Purpose:</b> Cement Multiple Stages			
<b>Well Type:</b> Development Well		<b>Job Type:</b> Cement Multiple Stages	
<b>Sales Person:</b> AARON, WESLEY		<b>Srvc Supervisor:</b> PICKELL, CHRISTOPHER	<b>MBU ID Emp #:</b> 396838

## Job Personnel

HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #
BARNES, BRIAN L	0.0	485204	CARPENTER, JACOB P	0.0	499500	HOLLOWAY, DUSTIN Craig	0.0	504032
LANGE, TIMOTHY Paul	0.0	520811	MULLER, MICHEL B	0.0	529830	PICKELL, CHRISTOPHER Lee	0.0	396838
SINCLAIR, RICHARD	0.0	368195	VIGIL, DANIEL Paul	0.0	471469	WHEELER, JUSTIN W	0.0	196470

## Equipment

HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way
10246780C	54 mile	10972458	54 mile	10977079C	54 mile	10988836C	54 mile
11019275C	54 mile	11019824C	54 mile	11338223	54 mile	11527041C	54 mile
11532305	54 mile	11562544C	54 mile	11605597	54 mile	11605599	54 mile
11667703C	54 mile	11764052	54 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					Job Times			
Formation Depth (MD)	Top	Bottom			Called Out	Date	Time	Time Zone
Form Type		BHST			On Location	15 - Dec - 2012	17:30	MST
Job depth MD	9027. ft	Job Depth TVD	9027. ft		Job Started	15 - Dec - 2012	21:50	MST
Water Depth		Wk Ht Above Floor	5. ft		Job Completed	16 - Dec - 2012	04:29	MST
Perforation Depth (MD)	From	To			Job Completed	16 - Dec - 2012	11:30	MST
Perforation Depth (MD)	From	To			Departed Loc	16 - Dec - 2012	13:00	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
Multiple Stage Cementer	Unknown							7900.	7900.		
Open Hole				8.75				884.	9027.		
Production Casing	New		7.	6.276	26.			.	9020.	.	
Surface Casing	Used		9.625	8.921	36.		J-55	.	884.	.	

## 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			

Summit

Monday, January 07, 2013 11:18:00

Version:

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	Clean Spacer		50.00	bbl	.08	176.05	8698.07	4.0	
2	ExpandaCem 14.2# (PumiceCem)	EXPANDACEM (TM) SYSTEM (452979)	300.0	sacks	14.2	1.42	6.18	6.0	6.18
	6.18 Gal	FRESH WATER							
3	Rig Mud			bbl	9.			.0	
4	Clean Spacer		10.00	bbl	10.	.0	.0	.0	
5	Rig Mud			bbl	9.			.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	Clean Spacer		0.00	bbl	8.33	.0	.0	4.0	
2	Tuned Light 10#	TUNED LIGHT (TM) SYSTEM (452984)		sacks	10.	2.33	8.84	6.0	8.84
	8.84 Gal	FRESH WATER							
3	VariCem 13.0#	VARICEM (TM) CEMENT (452009)		sacks	13.	2.37	13.0	6.0	13.0
	13 Gal	FRESH WATER							
4	15.8# Tail Cmt.	CMT - PREMIUM - CLASS G, 94 LB SK (100003685)		sacks	15.8	1.15	4.98	3.0	4.98
	94 lbm	CMT - PREMIUM - CLASS G REG OR TYPE V, BULK (100003685)							
	4.98 Gal	FRESH WATER							
	0.2 %	HR-5, 50 LB SK (100005050)							
5	Rig Mud			bbl	.			.0	

#### 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	

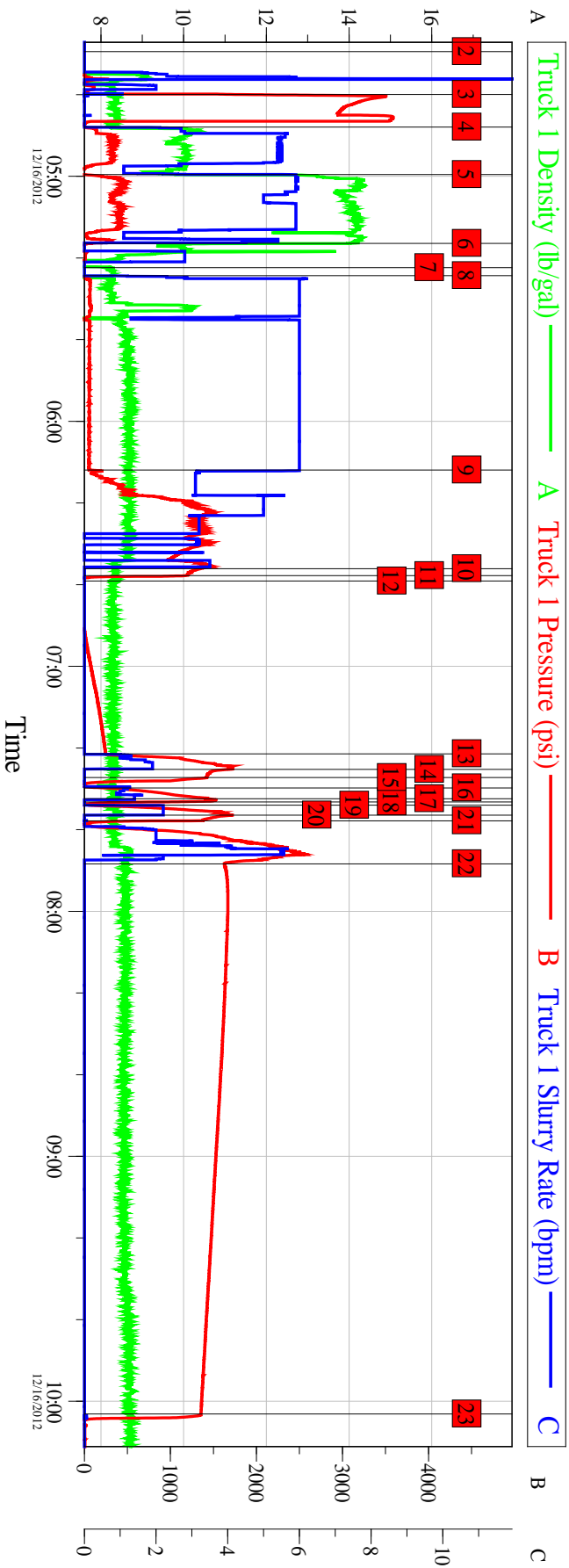
#### Rates

Circulating		Mixing		Displacement		Avg. Job	
Cement Left In Pipe	Amount	46 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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JEANIE AB10-01R  
NOBLE ENERGY



Global Event Log

Intersection		TIP	Intersection		TIP
2	Start Job	04:29:27 -5.000	3	Test Lines	04:39:58 1841
4	Pump Clean Spacer 10#	04:47:57 5.000	5	Pump Punice 14.2#	04:59:35 13.29
6	Shutdown	05:16:26 63.00	7	Drop Plug	05:22:23 -14.00
8	Pump Displacement	05:24:19 -14.00	9	Displ Reached Cmnt	06:11:55 70.93
10	Shutdown	06:36:05 1349	11	Check Floats	06:37:48 1167
12	Drop Opening Device For Multiple Stage Cementer	06:39:07 -21.00	13	Open Multiple Stage Cementer	07:21:26 246.0
14	Shutdown	07:25:15 1680	15	Release PSI	07:27:14 1420
16	Open Multiple Stage Cementer	07:29:47 232.8	17	Shutdown	07:32:26 1444
18	Release PSI	07:33:12 996.8	19	Open Multiple Stage Cementer	07:34:01 55.32
20	Shutdown	07:36:26 1719	21	Release PSI	07:37:51 1008
22	Circulate Well	07:48:22 1628	23	Release PSI	10:03:06 1355

HALLIBURTON

Customer: NOBLE ENERGY  
Well Description: JEANIE AB10-01R

Job Date: 16-Dec-2012  
SERVICE SUPERVISOR CHRISTOPHER PICKELL

Sales Order #: 900078395  
SERVICE OPERATOR JACOB CARPENTER

OptiCem v6.4.10  
16-Dec-12 11:58