

BLACK HILLS EXPLORATION & PROD-EBIZ

HDU 9-11CH

SST 66

Post Job Summary

Cement Intermediate

Date Prepared: 06/21/2015

Job Date: 06/19/2015

Submitted by: Keven Nye – Grand Junction Cement Engineer

The Road to Excellence Starts with Safety

Sold To #: 306454	Ship To #: 3563765	Quote #: 0022031653	Sales Order #: 0902398207
Customer: BLACK HILLS EXPLORATION & PROD-EBIZ		Customer Rep: PAUL HOFF	
Well Name: HOMER DEEP	Well #: 9-11CH	API/UWI #: 05-045-22489-00	
Field: HANCOCK GULCH	City (SAP): PARACHUTE	County/Parish: GARFIELD	State: COLORADO
Legal Description: NW NW-9-8S-98W-297FNL-418FWL			
Contractor: SST DRLG		Rig/Platform Name/Num: SST 66	
Job BOM: 7523			
Well Type: HORIZONTAL GAS			
Sales Person: HALAMERICA\HAM2616		Srcv Supervisor: DAVID CAMPBELL	

Job

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type	BHST		
Job depth MD	18988 FT		Job Depth TVD 7412 FT
Water Depth			Wk Ht Above Floor 5 FT
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		5.5	4.778	20		P-110	0	5239		
Open Hole Section				6.75			6525	18988	0	7412
Casing		7.625	6.875	29.7			0	6525		
Casing		4.5	3.92	13.5		P-110	5239	17309	0	7412

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	4.5	1		17309	Top Plug	4.5+5.5	1	
Float Shoe	4.5				Bottom Plug			
Float Collar	4.5	1		17195	SSR plug set			
Insert Float	4.5				Plug Container	5.5	1	HES
Stage Tool	4.5				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 /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	12.3 lb/gal Tuned Spacer III	Tuned Spacer III	60	bbl	12.3	2.92		4		
191.98 lbm/bbl		BARITE, BULK (100003681)								

34.90 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	12.6 Ecomocem	ECONOCEM (TM) SYSTEM	345	sack	12.6	1.75		5	8.63
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	ExpandaCem	EXPANDACEM (TM) SYSTEM	2000	sack	13.5	1.48		5	6.88
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 Fluid	Displacement Fluid	294	bbl	8.4			5,4,3,2	
Cement Left In Pipe	Amount	114 ft			Reason			Shoe Joint	
Mix Water:	7 PH	Mix Water Chloride:	0 PPM		Mix Water Temperature:		89 F		
Cement Temperature:		Plug Displaced by:	8.4 PPG		Disp. Temperature:				
Plug Bumped?	NO				Floats Held?		YES		
Cement Returns:		Returns Density:			Returns Temperature:				
Comment 1 GAL MMCR, 3 LBS BE-6 ADDED TO DISPLACEMENT									

1.0 Real-Time Job Summary

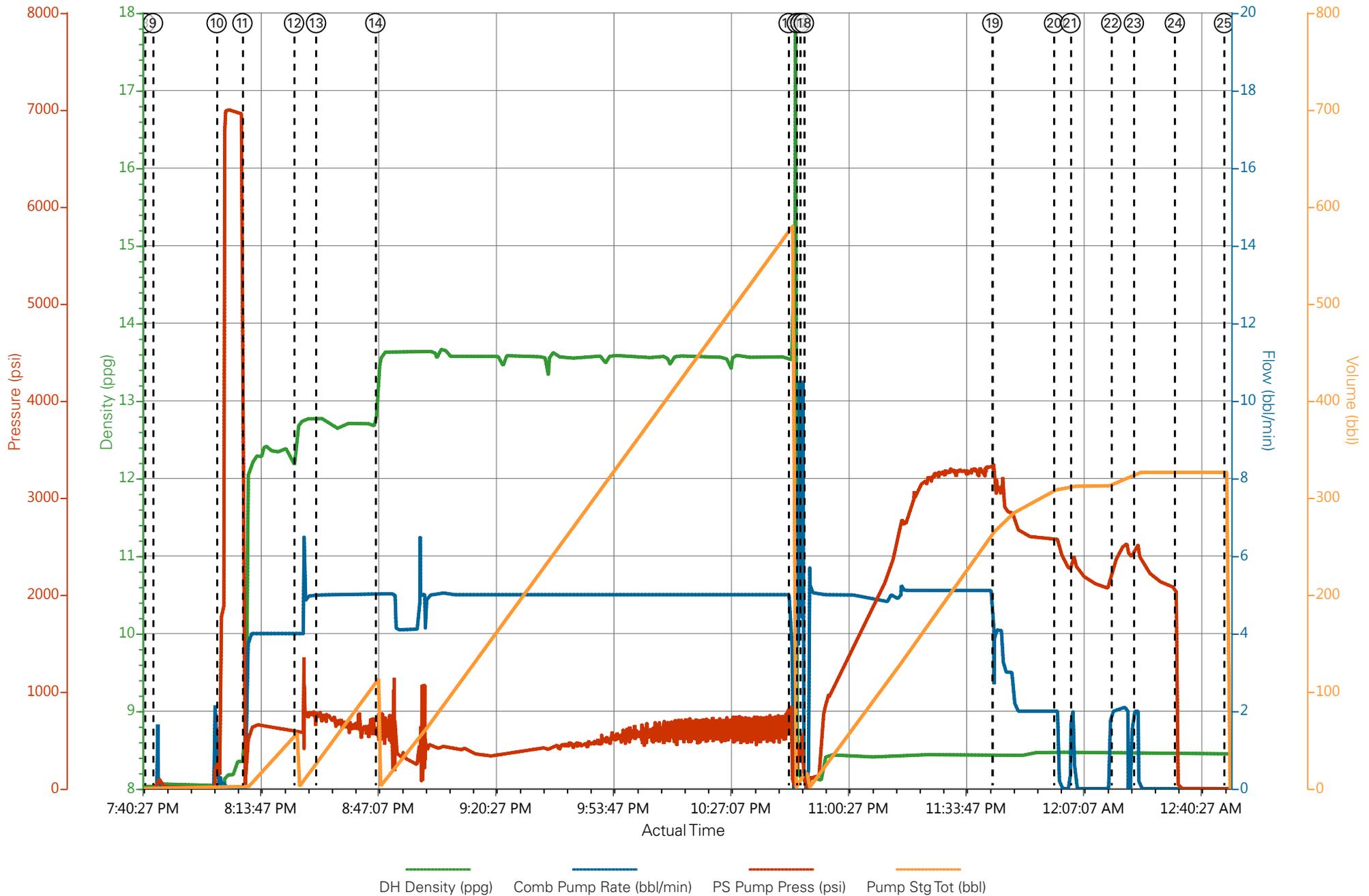
1.1 Job Event Log

Type	Seq. No.	Activity	Date	Time	Source	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	PS Pump Press <i>(psi)</i>	Pump Stg Tot <i>(bbl)</i>	Comments
Event	1	Call Out	6/18/2015	11:30:00	USER					ELITE # 8
Event	2	Pre-Convoy Safety Meeting	6/18/2015	14:30:00	USER					ALL HES EMPLOYEES
Event	3	Arrive At Loc	6/18/2015	16:00:00	USER					ARRIVED 1 HOUR EARLY DID NOT START CHARGING HOURS UNTIL REQUESTED ON LOCATION TIME
Event	4	Assessment Of Location Safety Meeting	6/18/2015	16:15:00	USER					ALL HES EMPLOYEES
Event	5	Pre-Rig Up Safety Meeting	6/18/2015	16:30:00	USER					ALL HES EMPLOYEES
Event	6	Rig-Up Equipment	6/18/2015	16:45:00	USER					1 HT-400 PUMP TRUCK (ELITE #8) 2 660 BULK TRUCKS 1 F-550 PICKUP 2 FIELD STORAGE BINS 1 IRON TRAILER
Event	7	Pre-Job Safety Meeting	6/18/2015	19:30:00	USER					ALL HES EMPLOYEES AND RIG CREW RIG CIRCULATED 4 BBL/MIN PROR TO JOB GAS @ 700 PRIOR TO STARTING JOB
Event	8	Start Job	6/18/2015	19:41:48	COM5					TD: 18988 TP: 17309 TVD: 7412 CSG: 4 1/2 13.5# P-110 12070 FT / 5 1/2 20# P-110 5242 FT SJ: (4 1/2) 114 FT MUD WEIGHT: 11.5 PPG OH: 6 3/4 INTER. CSG: 7 5/8 29.7# SET @ 6525 SURFACE CSG: 10 3/4 SET @ 1116

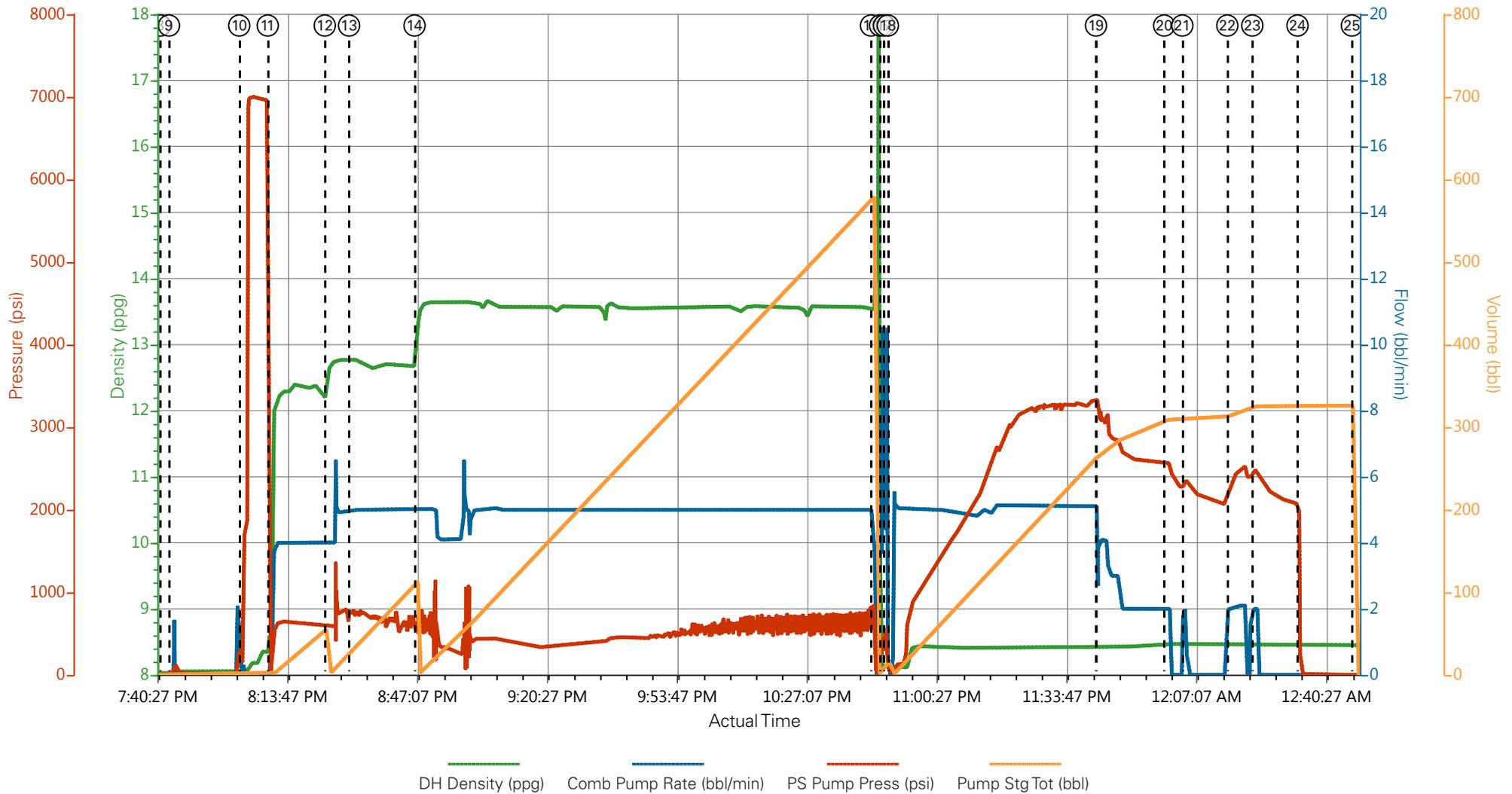
Event	9	Prime Pumps	6/18/2015	19:44:03	COM5	8.33	2.0	270	2.0	PRIME LINES FRESH WATER
Event	10	Test Lines	6/18/2015	20:02:05	COM5	8.33	0.0	7017	2.0	PRESSURE TEST OK
Event	11	Pump Spacer 1	6/18/2015	20:09:24	COM5	12.3	4.0	650	60.0	60 BBLS 12.3 PPG 2.92 YIELD 18.2 GAL/SK TUNED SPACER III WEIGHT VERIFIED VIA PRESSURIZED MUD SCALES
Event	12	Pump Lead Cement	6/18/2015	20:24:03	COM5	12.60	5.0	770	107.5	345 SKS 12.6 PPG 1.75 YIELD 8.63 GAL/SK LEAD CEMENT WEIGHT VERIFIED VIA PRESSURIZED MUD SCALES
Event	13	Check Weight	6/18/2015	20:30:17	COM5	12.60				WEIGHED AT 12.6 PPG AS PER PRESSURIZED MUD SCALES
Event	14	Pump Tail Cement	6/18/2015	20:47:05	COM5	13.50	5.0	620	527.1	2000 SKS 13.5 PPG 1.48 YIELD 6.88 GAL/SK TAIL CEMENT WEIGHT VERIFIED VIA PRESSURIZED MUD SCALES
Event	15	Shutdown	6/18/2015	22:44:16	USER					
Event	16	Clean Lines	6/18/2015	22:46:37	COM5					CLEAN LINES FRESH WATER
Event	17	Drop Top Plug	6/18/2015	22:47:37	USER					DROP SUPPLIED PLUG PLUG AWAY NO PROBLEMS
Event	18	Pump Displacement	6/18/2015	22:48:36	COM5	8.4	5.0	3350	293.9	8.4 PPG SUPPLIED DISPLACEMENT FLUID
Event	19	Slow Rate	6/18/2015	23:42:02	USER	8.4	4,3,2	3141	254.9	SLOWED RATE TO BUMP PLUG 4 BBL/MIN AT 254 AWAY SLOWED TO 3 BBL/MIN AT 264 BBLS AWAY SLOWED TO 2 BBL/MIN AT 274 BBLS AWAY
Event	20	Comment	6/18/2015	23:59:32	USER	8.4	2.0	2414	298	DISPLACED 4 BBL OVER AS PER COMPANY REP

Event	21	Comment	6/19/2015	00:04:11	USER	8.4	2.0	2414	300	DISPLACED ANOTHER 2 BBLS OVER AS PER COMPANY REP
Event	22	Comment	6/19/2015	00:15:44	USER	8.4	2.0	2414	310	DISPLACED ANOTHER 10 BBLS OVER AS PER COMPANY REP
Event	23	Comment	6/19/2015	00:22:10	USER	8.4	2.0	2414	314	DISPLACED ANOTHER 4 BBLS OVER AS PER COMPANY REP TOTAL OF 314 BBLS PUMPED PRESSURE AT 2414 PSI HELD FOR 5 MINUTES PLUG DID NOT BUMP
Event	24	Check Floats	6/19/2015	00:33:46	USER					FLOATS HELD 2 1/2 BBLS BACK TO TRUCKS TANK
Event	25	End Job	6/19/2015	00:47:43	COM5					GOOD RETURNS THROUGHOUT JOB PIPE WAS STATIC THROUGHOUT JOB CIRCULATED 34 BBLS CEMENT TO SURFACE
Event	26	Pre-Rig Down Safety Meeting	6/19/2015	01:45:00	USER					ALL HES EMPLOYEES
Event	27	Rig-Down Equipment	6/19/2015	02:00:00	USER					
Event	28	Pre-Convoy Safety Meeting	6/19/2015	02:45:00	USER					ALL HES EMPLOYEES
Event	29	Crew Leave Location	6/19/2015	03:00:00	USER					THANK YOU FOR USING HALLIBURTON CEMENT DAVID CAMPBELL AND CREW

BLACK HILLS - HDU 9-11CH - 5 1/2 PRODUCTION



BLACK HILLS - HDU 9-11CH - 5 1/2 PRODUCTION



DH Density (ppg) Comb Pump Rate (bbl/min) PS Pump Press (psi) Pump Stg Tot (bbl)

- | | | | | |
|---|--------------------|---------------------|--------------------------------|------------------------|
| ① Call Out | ⑧ Start Job | ⑮ Shutdown | 22 Comment | 29 Crew Leave Location |
| ② Pre-Convoy Safety Meeting | ⑨ Prime Lines | ⑯ Clean Lines | 23 Comment | |
| ③ Arrive At Loc | ⑩ Test Lines | ⑰ Drop Top Plug | 24 Check Floats | |
| ④ Assessment Of Location Safety Meeting | ⑪ Tuned Spacer III | ⑱ Pump Displacement | 25 End Job | |
| ⑤ Pre-Rig Up Safety Meeting | ⑫ Pump Lead Cement | ⑲ Slow Rate | 26 Pre-Rig Down Safety Meeting | |
| ⑥ Rig-Up Equipment | ⑬ Check weight | 20 Comment | 27 Rig-Down Equipment | |
| ⑦ Pre-Job Safety Meeting | ⑭ Pump Tail Cement | 21 Comment | 28 Pre-Convoy Safety Meeting | |

▼ **HALLIBURTON** | iCem® Service

Created: 2015-06-18 12:51:18, Version: 4.1.107

Edit

Customer: BLACK HILLS EXPLORATION & PROD-EBIZ

Job Date: 6/18/2015 6:25:26 PM

Well: HDU 9-11CH

Representative: PAUL HOFF

Sales Order #: 0902398207

ELITE # 8: DAVID CAMPBELL/TRAVIS BROWN

Sales Order #: 0902398207	Line Item: 10	Survey Conducted Date: 6/19/2015
Customer: BLACK HILLS EXPLORATION & PROD-EBIZ		Job Type (BOM): CMT PRODUCTION CASING BOM
Customer Representative: PAUL GOFF		API / UWI: (leave blank if unknown) 05-045-22489-00
Well Name: HOMER DEEP		Well Number: 0080643625
Well Type: HORIZONTAL GAS	Well Country: USA	
H2S Present: No	Well State: COLORADO	Well County: GARFIELD

Dear Customer,

We hope that you were satisfied with the service quality of this job performed by Halliburton. It is the aim of our management and service personnel to deliver equipment and service of a standard unmatched in the service sector of the energy industry.

Please take the time to let us know if our performance met with your satisfaction. Please be as critical as possible to ensure we constantly improve our service. Your comments are of great value to us and are intended for the exclusive use of Halliburton.

CUSTOMER SATISFACTION SURVEY

CATEGORY	CUSTOMER SATISFACTION RESPONSE	
Survey Conducted Date	The date the survey was conducted	6/19/2015
Survey Interviewer	The survey interviewer is the person who initiated the survey.	HX37079
Customer Participation	Did the customer participate in this survey? (Y/N)	Yes
Customer Representative	Enter the Customer representative name	PAUL GOFF
HSE	Was our HSE performance satisfactory? Circle Y or N	Yes
Equipment	Were you satisfied with our Equipment? Circle Y or N	Yes
Personnel	Were you satisfied with our people? Circle Y or N	Yes
Customer Comment	Customer's Comment	

CUSTOMER SIGNATURE

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KEY PERFORMANCE INDICATORS

General	
Survey Conducted Date	6/19/2015
The date the survey was conducted	

Cementing KPI Survey	
Type of Job	0
Select the type of job. (Cementing or Non-Cementing)	
Select the Maximum Deviation range for this Job	Horizontal
What is the highest deviation for the job you just completed? This may not be the maximum well deviation.	
Total Operating Time (hours)	8
Total Operating Hours Including Rig-up, Pumping, Rig-down. Enter in decimal format.	
HSE Incident, Accident, Injury	No
HSE Incident, Accident, Injury. This should be recordable incidents only.	
Was the job purpose achieved?	Yes
Was the job delivered correctly as per customer agreed design?	
Pumping Hours	4
Total number of hours pumping fluid on this job. Enter in decimal format.	
Type of Rig Classification Job Was Performed	Drilling Rig (Portable)
Type Of Rig (classification) Job Was Performed On	
Number Of JSAs Performed	6
Number Of Jsas Performed	
Was this a Primary Cement Job (Yes / No)	Yes
Primary Cement Job= Casing job, Liner job, or Tie-back job.	
Number of Unplanned Shutdowns	0
Unplanned shutdown is when injection stops for any period of time.	
Customer Non-Productive Rig Time (hrs)	0

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Well Type: HORIZONTAL GAS	Well Country: USA	
H2S Present: No	Well State: COLORADO	Well County: GARFIELD

Lost time due to Halliburton in the start, execution, or completion of an ordered service or product, or delays in a follow-on service. Enter in decimal format. 0 if none.	
Was the non productive time or the unplanned shutdown caused by a problem with a piece of equipment? Was the non productive time or the unplanned shutdown caused by a problem with a piece of equipment?	No
Did We Run Wiper Plugs? Did We Run Top And Bottom Casing Wiper Plugs?	Top
If a top plug was run, was the plug bumped? (Yes/No/N/A) If a top plug was run, was the plug bumped? (Yes/No/N/A)	No
If applicable, was Halliburton float equipment used? (Yes/No/N/A) If applicable, was Halliburton float equipment used? (Yes/No/N/A)	Not Available
If applicable, did the floats hold? (Yes/No/N/A) If applicable, did the floats hold? (Yes/No/N/A)	Yes
Mixing Density of Job Stayed in Designed Density Range (0-100%) Density Range defined as +/- .20 ppg. Calculation: Total BBLs cement mixed at designed density divided by total BBLs of cement multiplied by 100	90
Pump Rate (percent) of Job Stayed At Designed Pump Rate Pump Rate range defined as +/- 1bbl/min. Calculation: Total BBLs of fluid pumped at the designed rate divided by Total BBLs of fluid pumped, multiplied by 100	90
If applicable, were there returns throughout the job? (Yes/No/N/A) If applicable, were there returns throughout the job? (Yes/No/N/A)	Yes
Nbr of Remedial Plug Jobs Rqd - HES Number Of Remedial Plug Jobs Needed After Primary Plug Pumped By HES	0
Nbr of Remedial Sqz Jobs Rqd - HES Number Of Remedial Squeeze Jobs Required After Primary Job Performed By HES	0