

BLACK HILLS EXPLORATION & PROD-EBIZ

Homer Deep Unit 9-41BH

SST 66

Post Job Summary

Cement Surface Casing

Date Prepared: 07/07/2014

Job Date: 06/28/2014

Submitted by: Kory Hugentobler – Grand Junction Cement Engineer

The Road to Excellence Starts with Safety

Sold To #: 306454	Ship To #: 3194640	Quote #:	Sales Order #: 0901468960
Customer: BLACK HILLS EXPLORATION & PROD-EBIZ	Customer Rep: KIT HATFIELD		
Well Name: HOMER DEEP UNIT	Well #: 9-41BH	API/UWI #: 05-045-21934-00	
Field: SHALE RIDGE SOUTH	City (SAP): PARACHUTE	County/Parish: GARFIELD	State: COLORADO

Legal Description: NE NE-9-8S-98W-474FNL-240FEL

Contractor: SST DRLG Rig/Platform Name/Num: SST 66

Job BOM: 7521

Well Type: HORIZONTAL GAS

Sales Person: HALAMERICA\HX17509 Srvc Supervisor: Jesse Slaughter

Job

Formation Name	
Formation Depth (MD)	Top Bottom
Form Type	BHST
Job depth MD	1137ft Job Depth TVD
Water Depth	Wk Ht Above Floor 5ft
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		20	19.124	94			0	120		
Casing		10.75	10.05	40.5	STC	J-55	0	1137		0
Open Hole Section			14.75				120	1132		0

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	10.75	1	HES	1137	Top Plug	10.75	1	HES
Float Shoe	10.75	1	HES		Bottom Plug	10.75		HES
Float Collar	10.75	1	HES		SSR plug set	10.75		HES
Insert Float	10.75	1			Plug Container	10.75	1	HES
Stage Tool	10.75	1			Centralizers	10.75		HES

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/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	Fresh Water Spacer	Fresh Water Spacer	20	bbl	8.34			4	

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
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2	12.3 VariCem	VARICEM (TM) CEMENT	170	sack	12.3	2.38		8	13.77
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
3	12.8 VariCem	VARICEM (TM) CEMENT	250	sack	12.8	2.11		8	11.77
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
4	Displacement Fluid	Displacement Fluid	107.2	bbl	8.4			8	
Cement Left In Pipe		Amount	44.42 ft		Reason		Shoe Joint		
Comment									

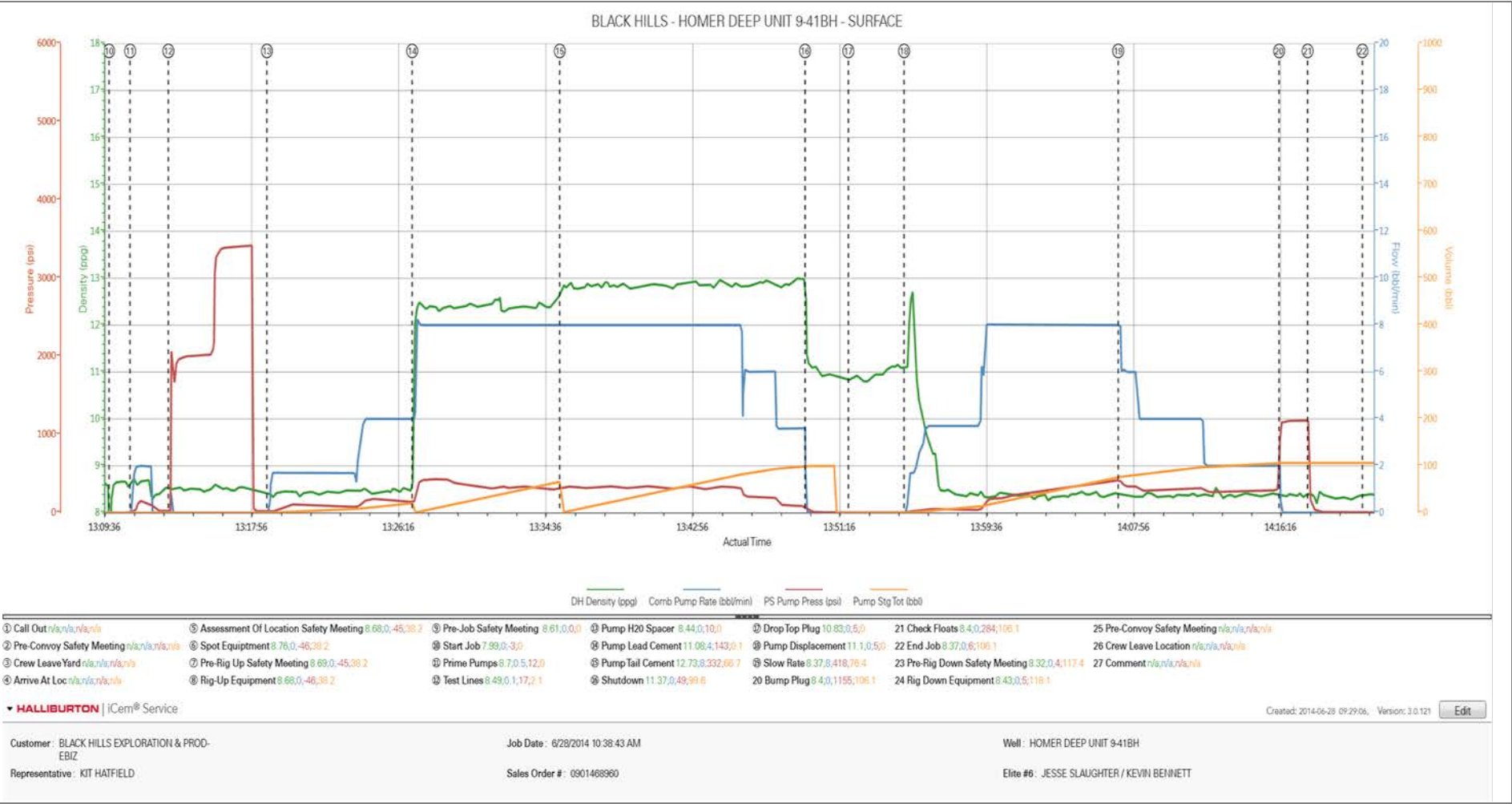
3.1 Job Event Log

Type	Seq No.	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comment
Event	1	Call Out	6/28/2014	04:00:00	USER					
Event	2	Pre-Convoy Safety Meeting	6/28/2014	05:50:00	USER					WITH ALL HES PERSONNEL
Event	3	Crew Leave Yard	6/28/2014	06:00:00	USER					
Event	4	Arrive At Loc	6/28/2014	07:00:00	USER					RIG WAS PULLING DRILL PIPE UPON HES ARRIVAL
Event	5	Assessment Of Location Safety Meeting	6/28/2014	11:30:00	USER					WITH ALL HES PERSONNEL
Event	6	Spot Equipment	6/28/2014	11:40:00	USER					
Event	7	Pre-Rig Up Safety Meeting	6/28/2014	11:50:00	USER					WITH ALL HES PERSONNEL
Event	8	Rig-Up Equipment	6/28/2014	12:00:00	USER					
Event	9	Pre-Job Safety Meeting	6/28/2014	13:00:00	USER					WITH ALL PERSONNEL
Event	10	Start Job	6/28/2014	13:09:57	COM7					TD 1132 FT, TP 1137 FT, SHOE 44.42 FT, CSG 10 3/4 IN 40.5 LB/FT J-55 GRADE, HOLE 14 3/4 IN, MUD WT 9.6
Event	11	Prime Pumps	6/28/2014	13:11:08	USER	8.33	2.0	128.0	2.0	FILL LINES WITH FRESH WATER
Event	12	Test Lines	6/28/2014	13:13:19	COM7					TESTED LINES TO 3400 PSI PRESSURE HOLDING
Event	13	Pump H2O Spacer	6/28/2014	13:18:54	COM7	8.33	4.0	143.0	20.0	FRESH WATER
Event	14	Pump Lead Cement	6/28/2014	13:27:08	COM7	12.3	8.0	310.0	72.1	170 SKS AT 12.3 PPG, 2.38 FT3/SK, 13.77 GAL/SK. WITH 15 LB TUFF FIBER
Event	15	Pump Tail Cement	6/28/2014	13:35:30	COM7	12.8	8.00	215.0	93.9	250 SKS AT 12.8 PPG, 2.11 FT3/SK, 11.77 GAL/SK
Event	16	Shutdown	6/28/2014	13:49:24	USER					
Event	17	Drop Top Plug	6/28/2014	13:51:51	COM7					PLUG LAUNCHED
Event	18	Pump Displacement	6/28/2014	13:55:01	COM7	8.33	8.0	418.0	107.2	FRESH WATER
Event	19	Slow Rate	6/28/2014	14:07:09	USER	8.37	2.0	280.0	97.2	SLOWED RATE 30 BBL PRIOR TO CALCULATED DISPLACEMENT

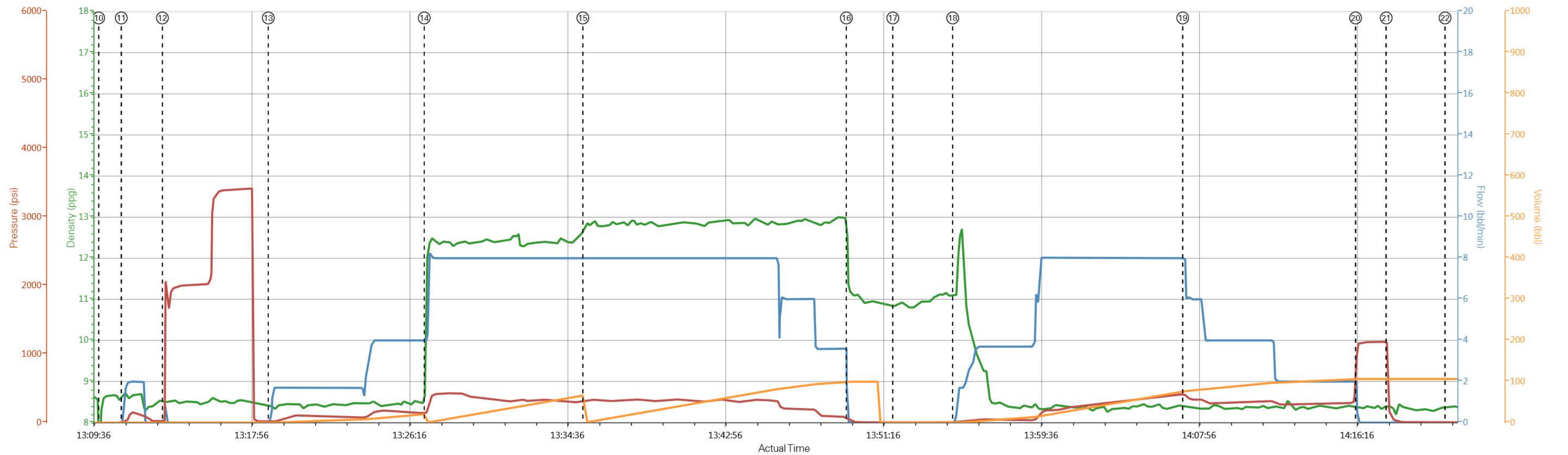
Event	20	Bump Plug	6/28/2014	14:16:16	USER	1180.0	
Event	21	Check Floats	6/28/2014	14:17:53	USER		FLOATS HOLDING. HES RETURNED 1/2 BBL H2O TO PUMP
Event	22	End Job	6/28/2014	14:21:00	COM7		PIPE WAS STATIC DURING JOB, GOOD CIRCULATION THROUGHOUT JOB. HES RETURNED 30 BBL CEMENT TO SURFACE. USED 15 LB TUFF FIBER, AND 120 LB SUGAR FOR JOB.
Event	23	Pre-Rig Down Safety Meeting	6/28/2014	14:30:00	USER		WITH ALL HES PERSONNEL
Event	24	Rig Down Equipment	6/28/2014	14:35:00	USER		
Event	25	Pre-Convoy Safety Meeting	6/28/2014	15:50:00	USER		WITH ALL HES PERSONNEL
Event	26	Crew Leave Location	6/28/2014	16:00:01	USER		CREW LEFT 10 3/4 IN PLUG CONTAINER AND SWAGE ON LOCATION.
Event	27	Comment	6/28/2014	16:01:00	USER		THANK YOU FOR USING HALLIBURTON CEMENT DEPARTMENT. JESSE SLAUGHTER AND CREW

4.0 Attachments

4.1 CHART.png



BLACK HILLS - HOMER DEEP UNIT 9-41BH - SURFACE



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

① Call Out n/a;n/a;n/a;n/a	⑤ Assessment Of Location Safety Meeting 8.68;0;-45;38.2	⑨ Pre-Job Safety Meeting 8.61;0;0;0	⑬ Pump H2O Spacer 8.44;0;10;0	⑰ Drop Top Plug 10.83;0;5;0	21 Check Floats 8.4;0;284;106.1	25 Pre-Convoy Safety Meeting n/a;n/a;n/a;n/a
② Pre-Convoy Safety Meeting n/a;n/a;n/a;n/a	⑥ Spot Equipment 8.76;0;-46;38.2	⑩ Start Job 7.99;0;-3;0	⑭ Pump Lead Cement 11.08;4;143;0.1	⑱ Pump Displacement 11.1;0;5;0	22 End Job 8.37;0;6;106.1	26 Crew Leave Location n/a;n/a;n/a;n/a
③ Crew Leave Yard n/a;n/a;n/a;n/a	⑦ Pre-Rig Up Safety Meeting 8.69;0;-45;38.2	⑪ Prime Pumps 8.7;0.5;12;0	⑮ Pump Tail Cement 12.73;8;332;66.7	⑲ Slow Rate 8.37;8;418;76.4	23 Pre-Rig Down Safety Meeting 8.32;0;4;117.4	27 Comment n/a;n/a;n/a;n/a
④ Arrive At Loc n/a;n/a;n/a;n/a	⑧ Rig-Up Equipment 8.68;0;-46;38.2	⑫ Test Lines 8.49;0.1;17;2.1	⑯ Shutdown 11.37;0;49;99.6	20 Bump Plug 8.4;0;1155;106.1	24 Rig Down Equipment 8.43;0;5;118.1	

HALLIBURTON

Water Analysis Report

Company: BLACK HILLS

Date: 6/28/2014

Submitted by: JESSE SLAUGHTER

Date Rec.:

Attention: LAB

S.O.# 901468960

Lease HOMER DEEP UNIT

Job Type: SURFACE

Well # 9-41BH

Specific Gravity	<i>MAX</i>	1
pH	<i>8</i>	6
Potassium (K)	<i>5000</i>	250 Mg / L
Calcium (Ca)	<i>500</i>	120 Mg / L
Iron (FE2)	<i>300</i>	0 Mg / L
Chlorides (Cl)	<i>3000</i>	0 Mg / L
Sulfates (SO ₄)	<i>1500</i>	UNDER 200 Mg / L
Chlorine (Cl ₂)		0 Mg / L
Temp	<i>40-80</i>	65 Deg
Total Dissolved Solids		200 Mg / L

Respectfully: JESSE SLAUGHTER

Title: CEMENTING SUPERVISOR

Location: Grand Junction, CO

NOTICE:

This report is limited to the described sample tested. Any person using or relying on this report agrees that Halliburton shall not be liable for any loss or damage whether due to act or omission resulting from such report or its

EVENT #	EVENT	VOLUME	SACKS	WEIGHT	YIELD	GAL/ SK
1	Start Job					
6	Test Lines	3000 PSI				
9	H2O Spacer	20.0		8.33		
13	Lead Cement	72.1	170	12.3	2.38	13.75
15	Tail Cement	93.9	250	12.8	2.11	11.75
	SHUTDOWN/DROP PLUG					
22	Displace with H2O	107.2		8.33		
23	Slow rate	97.2				
26	Land Plug	244 PSI	GO	500	PSI	OVER
	Release Psi / Job Over	744 PSI				
			Do Not Overdisplace			
DISPLACEMENT	TOTAL PIPE	SHOE JOINT LENGTH		FLOAT COLLAR	BBL/FT	H2O REQ.
107.18	1137	44.42		1092.58	0.0981	270 BBL
PSI to Lift Pipe	432 PSI	*****Use Mud Scales on Each Tier*****				
Total Displacement	107.18					
CALCULATED DIFFERENTIAL PSI		244 PSI		TOTAL FLUID PUMPED		293 BBL
Collapse	1580	Burst	3130		SO#	901468960

Sales Order #: 0901468960	Line Item: 10	Survey Conducted Date: 6/28/2014
Customer: BLACK HILLS EXPLORATION & PROD-EBIZ		Job Type (BOM): CMT SURFACE CASING BOM
Customer Representative:		API / UWI: (leave blank if unknown) 05-045-21934-00
Well Name: HOMER DEEP UNIT		Well Number: 0080230248
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	6/28/2014
Survey Interviewer	The survey interviewer is the person who initiated the survey.	HB21762
Customer Participation	Did the customer participate in this survey? (Y/N)	No
Customer Representative	Enter the Customer representative name	
HSE	Was our HSE performance satisfactory? Circle Y or N	
Equipment	Were you satisfied with our Equipment? Circle Y or N	
Personnel	Were you satisfied with our people? Circle Y or N	
Customer Comment	Customer's Comment	

CUSTOMER SIGNATURE

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KEY PERFORMANCE INDICATORS

General	
Survey Conducted Date	6/28/2014
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	Vertical
What is the highest deviation for the job you just completed? This may not be the maximum well deviation.	
Total Operating Time (hours)	3
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?	
Operating Hours (Pumping Hours)	1
Total number of hours pumping fluid on this job. Enter in decimal format.	
Customer Non-Productive Rig Time (hrs)	0
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.	
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	
Number of Unplanned Shutdowns	0
Unplanned shutdown is when injection stops for any period of time.	
Was this a Primary Cement Job (Yes / No)	Yes

Sales Order #: 0901468960	Line Item: 10	Survey Conducted Date: 6/28/2014
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Customer Representative:		API / UWI: (leave blank if unknown) 05-045-21934-00
Well Name: HOMER DEEP UNIT		Well Number: 0080230248
Well Type: HORIZONTAL GAS	Well Country: USA	
H2S Present: No	Well State: COLORADO	Well County: GARFIELD

Primary Cement Job= Casing job, Liner job, or Tie-back job.	
Did We Run Wiper Plugs? Did We Run Top And Bottom Casing Wiper Plugs?	Top
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	95
Was Automated Density Control Used? Was Automated Density Control (ADC) Used ?	Yes
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	95
Nbr of Remedial Sqz Jobs Rqd - Competition Number Of Remedial Squeeze Jobs Required After Primary Job Performed By Competition	0
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