

*The Road to Excellence Starts with Safety*

Sold To #: 306454	Ship To #: 3649000	Quote #:	Sales Order #: 0902369138
Customer: BLACK HILLS EXPLORATION & PROD-EBIZ		Customer Rep: DAN FRIEND	
Well Name: HOMER DEEP UNIT	Well #: 7-23BH	API/UWI #: 05-045-22810-00	
Field: SOUTH SHALE RIDGE	City (SAP): PARACHUTE	County/Parish: GARFIELD	State: COLORADO

Legal Description: NE SW-7-8S-98W-1851FSL-2420FWL	
Contractor: ENSIGN DRLG	Rig/Platform Name/Num: ENSIGN 161
Job BOM: 392189	

Well Type: HORIZONTAL GAS	
Sales Person: HALAMERICA/HAM2616	Srvc Supervisor: Eric Carter

**Job**

Formation Name	
Formation Depth (MD)	Top 1005 FT. Bottom 6580 FT.
Form Type	BHST
Job depth MD	6573 FT. Job Depth TVD
Water Depth	Wk Ht Above Floor 4 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		10.75	10.05	40.5	STC	J-55	0	1005		0
Casing		7.625	6.875	29.7	8 RD	HCP110	0	6573		0
Open Hole Section			9.875				1005	6580	0	0

**Tools and Accessories**

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe					Top Plug			
Float Shoe					Bottom Plug			
Float Collar					SSR plug set			
Insert Float					Plug Container	7.625	1	HES
Stage Tool	7.625	1		3608	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 <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	Mud Flush III (Powder)	Mud Flush III	30	bbl	8.4			4	
42 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	ExtendaCem	EXTENDACEM (TM) SYSTEM	140	sack	12.5	1.69	8.72	6	
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	SWIFTCEM (TM) SYSTEM	415	sack	13.5	1.45	6.78	6	
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	299.5	bbl	9.1			6	
Cement Left In Pipe		Amount	ft	Reason			Shoe Joint		
Stage/Plug #: 2									
Fluid #	Stage Type 2	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	Mud Flush III (Powder)	Mud Flush III	30	bbl	8.4			4	
42 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	HalCem	HALCEM (TM) SYSTEM	445	sack	12.5	1.83	9.5	7	
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	HalCem	HALCEM (TM) SYSTEM	100	sack	13.5	1.55	7.47	5	
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	165.6	bbl	9.1			5.5	
Cement Left In Pipe		Amount	47.4 ft	Reason			Shoe Joint		
Comment									



## 2.0 Real-Time Job Summary

## 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	PS Pump Press (psi)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	Call Out	5/1/2015	13:30:00	USER					
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	5/1/2015	17:20:00	USER					ATTENDED BY ALL HES CREW
Event	3	Crew Leave Yard	Crew Leave Yard	5/1/2015	17:30:00	USER					
Event	4	Arrive At Loc	Arrive At Loc	5/1/2015	19:00:00	USER					RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	5/1/2015	22:40	USER					ATTENDED BY ALL HES CREW
Event	6	Other	Other	5/1/2015	23:00	USER					SPOT EQUIPMENT
Event	7	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	5/1/2015	23:10	USER					ATTENDED BY ALL HES CREW
Event	8	Rig-Up Equipment	Rig-Up Equipment	5/1/2015	23:30	USER					
Event	9	Pre-Job Safety Meeting	Pre-Job Safety Meeting	5/2/2015	01:00	USER					ATTENDED BY ALL HES CREW, RIG CREW AND COMPANY REP
Event	10	Other	Start Job	5/2/2015	01:30:50	USER					TP 6573', TD 6580', MW 9.1 PPG, CASING 7.625", 29.7#, HCP-110, SJ 47.4', HOLE 9.875", SURFACE CASING 10.75", 40.5# SET AT 1005', RIG CIRCULATED FOR 5 HR'S PRIOR TO JOB
Event	11	Other	Fill Lines	5/2/2015	01:31:21	USER	8.34	85	2	2	FRESH WATER
Event	12	Test Lines	Test Lines	5/2/2015	01:33:37	USER					PRESSURED UP TO 4150 PSI, PRESSURE HELD
Event	13	Pump Spacer	Pump Spacer	5/2/2015	01:39:27	USER	8.4	180	4	30	FRESH WATER WITH MUD

iCem Service

(v. 4.1.107)

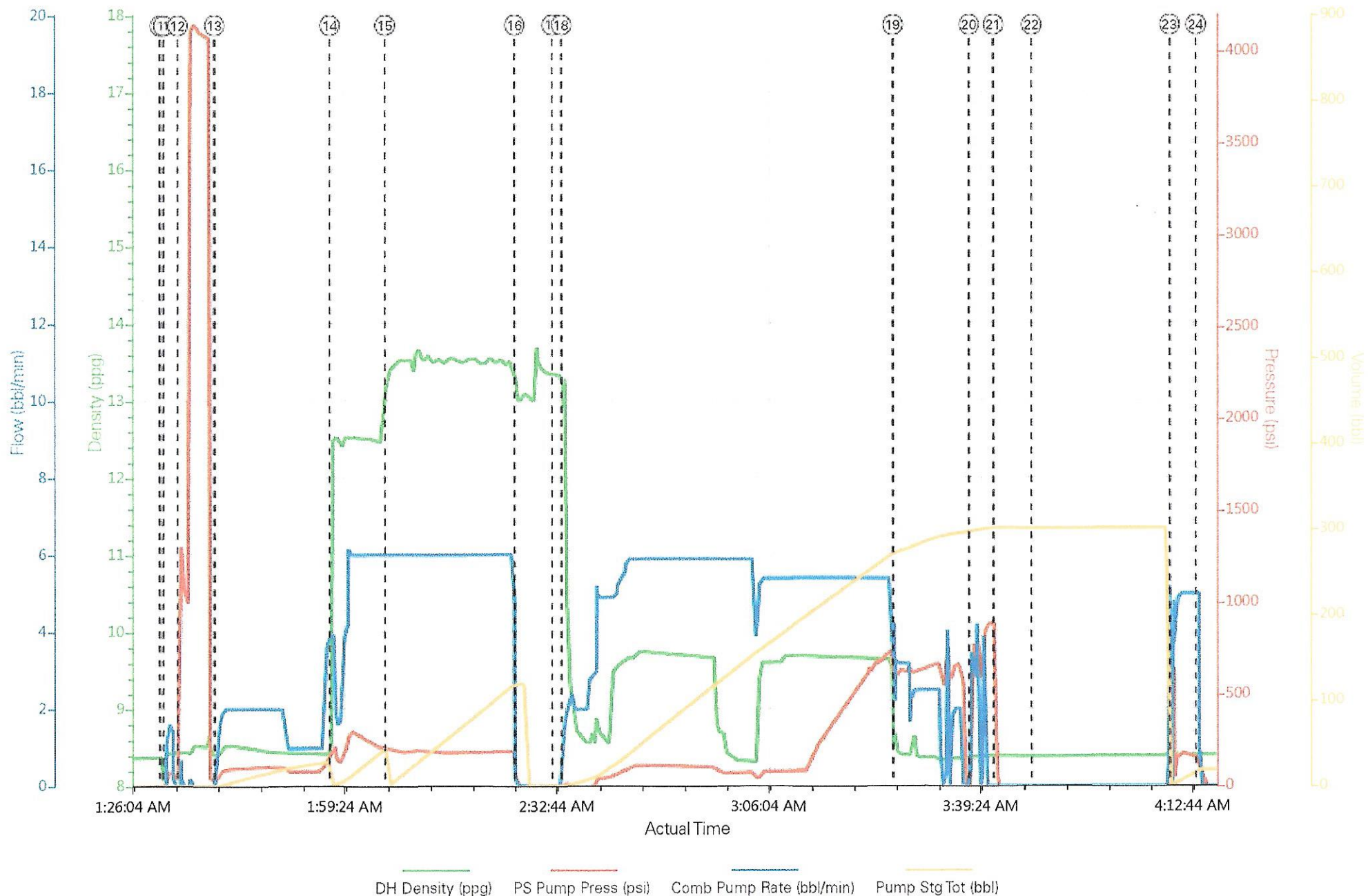
Created: Saturday, May 02, 2015

											FLUSH III	
Event	14	Pump 1st Stage Lead Slurry	Pump 1st Stage Lead Slurry	5/2/2015	01:57:31	USER	12.5	300	6	42.1	140 SKS EXTENDACEM MIXED AT 12.7 PPG, 1.69 YIELD, 8.72 GL/SK, 30 LB'S TUFFIBER ADDED ON THE FLY	
Event	15	Pump 1st Stage Tail Slurry	Pump 1st Stage Tail Slurry	5/2/2015	02:06:14	USER	13.5	210	6	107.2	415 SKS SWIFTCCEM MIXED AT 13.5 PPG, 1.45 YIELD, 6.78 GL/SK	
Event	16	Shutdown	Shutdown	5/2/2015	02:26:39	USER						
Event	17	Drop Plug	Drop Plug	5/2/2015	02:32:32	USER						DART LAUNCHED
Event	18	Pump Displacement	Pump Displacement	5/2/2015	02:33:58	USER	9.1	740	6	279.5	DISPLACED 120 BBLS MUD, 40 BBLS FRSH WATER, 139.5 BBLS MUD	
Event	19	Slow Rate	Slow Rate	5/2/2015	03:26:03	USER	9.1	760	3	890		
Event	20	Bump Plug	Bump Plug	5/2/2015	03:38:02	USER						PLUG LANDED
Event	21	Check Floats	Check Floats	5/2/2015	03:41:51	USER						FLOATS HELD, GOOD CIRCULATION THROUGHOUT JOB, PIPE NOT MOVED DURING JOB
Event	22	Drop Opening Device For Multiple Stage Cementer	Drop Opening Device For Multiple Stage Cementer	5/2/2015	03:47:53	USER						LAUNCHED MSC OPENING DEVICE
Event	23	Open Multiple Stage Cementer	Open Multiple Stage Cementer	5/2/2015	04:09:36	USER						PRESSURED UP TO OPEN MSC, MSC OPENED, CIRCULATED WELL WITH 20 BBLS
		Circulate Well	Circulate Well	5/2/2015	04:10:00	USER	8.34	180	5	20	HES CIRCULATED WELL	
Event	24	Shutdown	Shutdown	5/2/2015	04:13:42	USER						HES TURNED OVER TO RIG TO CIRCULATE WELL, 37 BBLS CEMENT BACK TO SURFACE.
				BEGIN	.SECOND	STAGE						

Event	25	Pump Spacer	Pump Spacer	5/2/2015	09:20:12	USER	8.4	80	4	30	MUD FLUSH III
Event	26	Pump 2nd Stage Lead Slurry	Pump 2nd Stage Lead Slurry	5/2/2015	09:35:21	USER	12.5	240	7	145	445 SKS HALCEM MIXED AT 12.5 PPG, 1.83 YIELD, 9.5 GL/SK
Event	27	Pump 2nd Stage Tail Slurry	Pump 2nd Stage Tail Slurry	5/2/2015	09:58:06	USER	13.5	120	5	27.6	100 SKS HALCEM MIXED AT 13.5 PPG, 1.55 YIELD, 7.47 GL/SK
Event	28	Shutdown	Shutdown	5/2/2015	10:04:21	USER					
Event	29	Drop Plug	Drop Plug	5/2/2015	10:06:03	USER					PLUG LAUNCHED
Event	30	Pump Displacement	Pump Displacement	5/2/2015	10:07:56	USER	9.1	140	5.5	155.6	MUD
Event	31	Slow Rate	Slow Rate	5/2/2015	10:36:56	USER	9.1	140	4	10	
Event	32	Bump Plug	Bump Plug	5/2/2015	10:40:10	USER		2620			PLUG LANDED, MSC CLOSED
Event	33	Check Floats	Check Floats	5/2/2015	10:43:10	USER					FLOATS HELD
Event	34	End Job	End Job	5/2/2015	10:43:53	USER					CIRCULATION SLOWED AT 100 BBLS DISPLACEMENT PUMPED, PIPE NOT MOVED DURING JOB, 0 BBLS CEMENT TO SURFACE
Event	36	Post-Job Safety Meeting (Pre Rig-Down)	Post-Job Safety Meeting (Pre Rig-Down)	5/2/2015	10:45	USER					ATTENDED BY ALL HES CREW
Event	37	Rig-Down Equipment	Rig-Down Equipment	5/2/2015	10:50	USER					
Event	38	Depart Location Safety Meeting	Depart Location Safety Meeting	5/2/2015	12:20	USER					ATTENDED BY ALL HES CREW
Event	39	Crew Leave Location	Crew Leave Location	5/2/2015	12:30	USER					THANK YOU FOR USING HALLIBURTON CEMENT, ERIC CARTER AND CREW.



# BLACK HILLS - HOMMER DEEP UNIT 7-23BH - MULTI STAGE



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