

HALLIBURTON

iCem[®] Service

CONOCOPHILLIPS

For:

Date: Saturday, July 08, 2017

B&D LAND 4-64 4-5 4BH Production

Job Date: Saturday, July 08, 2017

Sincerely,

Bryan Kraft and Crew

Legal Notice

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1.0 Cementing Job Summary

1.1 Executive Summary

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	Pump Stg Tot (bbl)	PS Pump Press (psi)	Comb Pump Rate (bbl/min)	Comments
Event	1	Safety Meeting - Pre Job	Safety Meeting - Pre Job	7/7/2017	01:15:00	USER					MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	2	Call Out	Call Out	7/7/2017	10:00:00	USER					CREW CALLED OUT AT 08:00 7/7/2017, REQUESTED ON LOCATION 18:00 7/7/2017. CREW PICKED UP CEMENT, CHEMICALS (12GAL MUSOL A, 12 GAL DUAL SPACER B, 10 GAL D-AIR, 20 GAL MMCR), 100 LBS OF SUGAR, AND PLUG CONTAINER FROM FORT LUPPTON, CO. BULK 660: 10897917/11764054, BULK 660: 11764737/11566182, PUMP ELITE: 11644701/11645460.
Event	3	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	7/7/2017	14:30:00	USER					DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
Event	4	Crew Leave Yard	Crew Leave Yard	7/7/2017	15:00:00	USER					STARTED JOURNEY MANAGEMENT.
Event	5	Arrive at Location from Service Center	Arrive at Location from Service Center	7/7/2017	18:00:00	USER					END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB: SURFACE CASING: 36# 9.625" @ 1970', CASING: 23# 5.5" HCP-110 @ 15323',

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(V. 4.4.18)

92.55' SHOE JOINT, 8.5"
OPEN HOLE, TVD @ 7651',
9.6 PPG WELL FLUID, FRESH
WATER DISPLACEMENT.
CASING LANDED @ 00:01
7/8/2017.

Event 6	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	7/7/2017	18:30:00	USER													HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER.
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Event 7	Rig-Up Equipment	Rig-Up Equipment	7/7/2017	19:00:00	USER													CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON, AND WATER HOSES TO PERFORM JOB
Event 8	Start Job	Start Job	7/8/2017	02:07:06	COMS	0.07	0.00	-1.00	0.00									PRESSURE TESTED IRON TO 5000 PSI, KICKOUTS SET @ 500 PSI, KICKED OUT @ 1020PSI, 5TH GEAR STALL OUT @ 1800 PSI.

Event 9	Test Lines	Test Lines	7/8/2017	02:10:47	COMS	8.69	3.00	80.00	0.00									PUMP 60 BBLs OF TUNED SPACER @ 10.5 LB/GAL, ADDED 12 GAL MUSOL A, 12 GAL DUAL SPACER B, 10 GAL D-AIR, DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Stage 2	Next Stage	10.5 ppg TSIII - 2388825 .2	7/8/2017	02:24:50	USER	8.61	3.00	9.00	0.00									

Event 10	Drop Bottom Plug	Drop Bottom Plug	7/8/2017	02:43:06	COMS													DROPPED PLUG 40 BBLs INTO SPACER, PLUG LEFT CONTAINER, VERIFIED BY COMPANY MAN.
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Stage 3	Next Stage	13.2ppg Conoco ElastiCem	7/8/2017	02:48:42	USER	12.11	52.00	132.00	2.80									PUMP 830 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.57 YIELD, 7.55 GAL/SK, 232 BBLs, CALCULATED TOL
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Customer: CONOCOPHILLIPS
 Job: Conocophillips B&D LAND 4-64 4-5-4BH Production
 Case: Case 2

@ 580', DENSITY VERIFIED
 BY PRESSURIZED MUD
 SCALES.

Stage	4	Next Stage	13.5ppg Conoco EconoCem	7/8/2017	03:20:33	USER	13.13	231.80	516.00	8.00
PUMP 1195 SKS OF ECONOCEM@ 13.5 LB/GAL, 1.79 YIELD, 8.74 GAL/SK, 380 BLS, CALCULATED TOT @ 6029', DENSITY VERIFIED BY PRESSURIZED MUD SCALES.										

Event	11	Shutdown	Shutdown	7/8/2017	04:12:05	COMS				
Event	12	Clean Lines	Clean Lines	7/8/2017	04:12:38	COMS				
SHUTDOWN TO WASH PUMPS/LINES AND DROP TOP PLUG.										

Stage	5	Next Stage	Water	7/8/2017	04:17:32	USER	7.73	407.90	44.00	3.30
Event	13	Drop Top Plug	Drop Top Plug	7/8/2017	04:18:37	COMS				
BEGIN CALCULATED DISPLACEMENT OF 322 BLS WITH FRESH WATER FIRST 20 BLS WITH NIMCR, ALL DISPLACEMENT WITH BIOCIDED, OXYGEN SCAVENGER, AND CORROSION INHIBITOR										

Event	14	Pump Displacement	Pump Displacement	7/8/2017	04:18:44	COMS				
SPACER RETURNS TO SURFACE @ 307 BLS INTO DISPLACEMENT. TOTAL OF 15 BLS OF SPACER TO SURFACE										

Event	15	Spacer Returns to Surface	Spacer Returns to Surface	7/8/2017	05:00:38	USER	7.85	311.30	2693.00	5.30
PLUG BUMPED @ CALCULATED DISPLACEMENT. PRESSURED 500 PSI OVER FINAL CIRCULATING PRESSURE OF 2490 PSI. HOLD PRESSURE ON CASING FOR 5 MIN										

Event	16	Bump Plug	Bump Plug	7/8/2017	05:04:06	USER	7.88	326.90	3599.00	0.00
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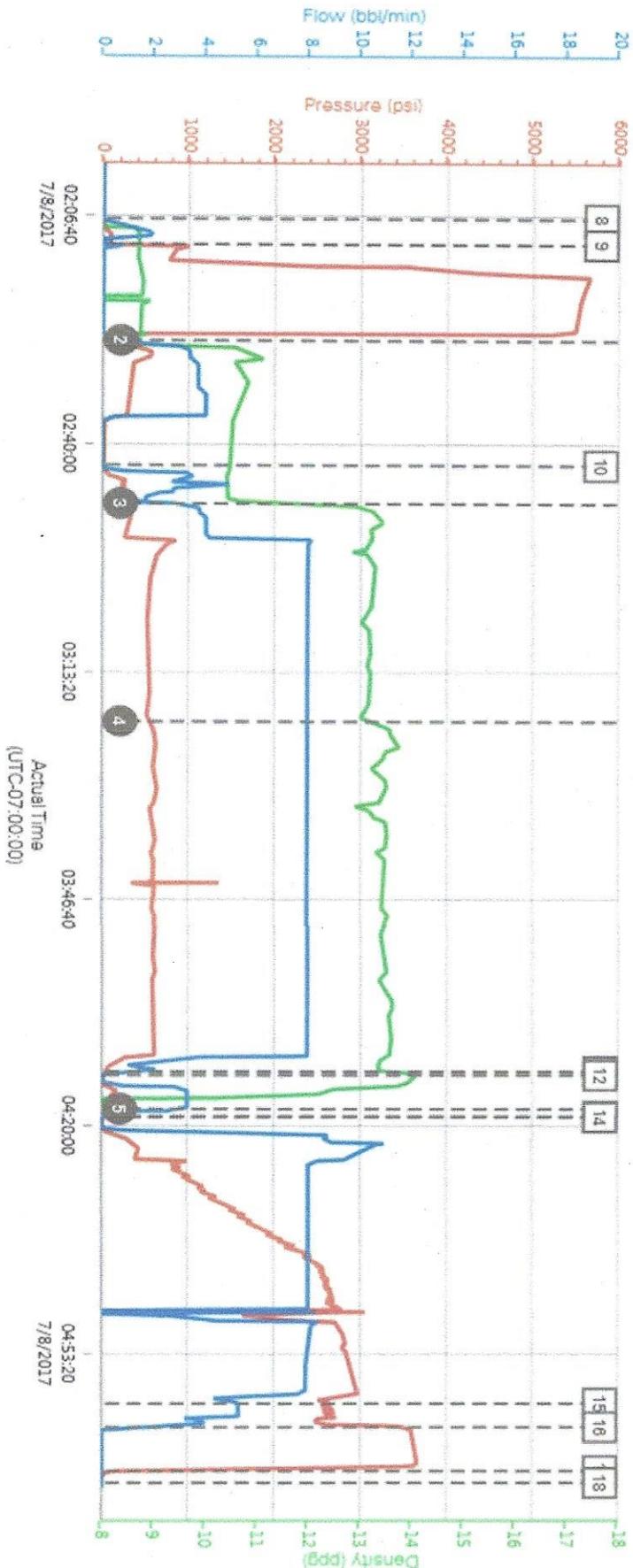
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Customer: CONOCOPHILLIPS
 Job: ConocoPhillips B&D LAND 4-64 4-5 4BH Production
 Case: Case 2

Event	Description	Date	Time	User	7.84	326.90	139.00	0.00	Notes
Event 17	Check Floats	7/8/2017	05:10:33	USER					RELEASED PRESSURE, FLOATS HELD, 4 BBL BACK.
Event 18	End Job	7/8/2017	05:12:17	COM5					STOP RECORDING JOB DATA.
Event 19	Pre-Rig Down Safety Meeting	7/8/2017	05:45:18	USER					DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES
Event 20	Rig-Down Completed	7/8/2017	07:00:00	USER					Rig-Down Completed
Event 21	Pre-Convoy Safety Meeting	7/8/2017	07:30:00	USER					DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event 22	Depart Location	7/8/2017	08:00:00	USER					THANK YOU FOR USING HALLIBURTON - BRYAN KRAFT AND CREW.

Custom Results



PS Pump Press (psi) -7 DH Density (ppg) 7.78 Comb Pump Rate (bbl/min) 0

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Customer: CONOCOPHILLIPS
 Job: ConocoPhillips B&D LAND 4-64 4-5 4BH Production
 Case: Case 2

3.2 Events

Description	Actual Time (UTC-07:00:00)	PS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)
8 Start Job	02:07:06	-1.00	0.07	0.00
9 Test Lines	02:10:47	80.00	8.69	0.00
2 10.5 ppg TSM - 2388825 .2	02:24:50	9.00	8.61	0.00
10 Drop Bottom Plug	02:43:06	7.00	10.47	0.00
3 13.2ppg Conoco ElastCem	02:48:42	132.00	12.11	2.80
4 13.5ppg Conoco EconoCem	03:20:33	516.00	13.13	8.00
11 Shutdown	04:12:05	71.46	13.53	0.00
12 Clean Lines	04:12:38	5.00	14.16	0.00
5 Water	04:17:32	44.00	7.73	3.30
13 Drop Top Plug	04:18:37	-6.00	-0.62	0.00
14 Pump Displacement	04:18:44	-6.00	-0.63	0.00
15 Spacer Returns to Surface	05:00:38	2693.00	7.85	5.30
16 Bump Plug	05:04:06	3599.00	7.88	0.00
17 Check Floats	05:10:33	139.00	7.84	0.00
18 End Job	05:12:17	-8.00	7.79	0.00

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Created: 2017-07-08 01:25:33 (UTC-06:00), Version: 14.18

EDIT

The Road to Excellence Starts with Safety

Sold To #: 352431	Ship To #: 352431	Quote #: 0022317171	Sales Order #: 0904140035
Customer: CONOCO/PHILLIPS COMPANY-EBUS		Customer Rep: Mike Johnson	
Well Name: B&D LAND 4-64 4-5	Well #: 4BH	API/UWI #: 05-005-07245-00	
Field:	City (SAP): WATKINS	County/Parish: ARAPAHOE	State: COLORADO
Legal Description:			
Contractor: H & P DRLG		Rig/Platform Name/Num: H & P 448	
Job BOM: 7523 7523			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HB41307		Srcv Supervisor: Bryan Kraft	
Job			

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type	BHST		
Job depth MD	15323ft	Job Depth TVD	7565ft
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		9.625	8.921	36	LTC	J-55	0	1970	0	1970
Casing		5.5	4.67	23	TXP-BTC	P-110	0	15323	0	7565
Open Hole Section			8.5				1970	6034	1970	6034
Open Hole Section			8.5				6034	15323	6034	7565

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe					Top Plug	5.5	1	Antelope
Float Shoe	5.5	1	Antelope	15323	Bottom Plug	5.5	1	Antelope
Float Collar	5.5	1	Antelope	15230	SSR plug set			
Insert Float					Plug Container	5.5	1	HES
Stage Tool					Centralizers			

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	Spacer	TUNED SPACER III	60	bbl	10.5	6.4	42.2	6	2221
	0.10 gal/bbl	D-AIR 3000L, 5 GAL PAIL (101007444)							
	0.20 gal/bbl	MUSOL A, 330 GAL TOTE - (790828)							
	37.58 gal/bbl	FRESH WATER							
	87.48 lbm/bbl	BARITE, BULK (100003681)							
	0.20 gal/bbl	DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)							

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
2	Lead Cement	ELASTICEM	830	sack	13.2	1.57	7.54	8	6258
	24.50 lbm	POZMIX A FLYASH (100003690)							
	0.20 %	HALAD(R)-344, 50 LB (100003670)							
	61.10 lbm	TYPE I / II CEMENT, BULK (101439798)							
	0.10 %	SA-1015, 50 LB SACK (102077046)							
	7.54 Gal	FRESH WATER							
	0.20 %	SCR-100 (100003749)							
	5 lbm	WELLIFE 708 - 2000 LB BAG (807637)							
	1 lbm	SILICALITE, COMPACTED - 2200 LB (870283)							

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
3	Tail Cement	ECONOCEM	1195	sack	13.5	1.79	8.74	8	10468
	0.25 %	HR-5, 50 LB SK (100005050)							
	8.72 Gal	FRESH WATER							
	0.80 %	HALAD(R)-344, 50 LB (100003670)							
	25 %	SS-200 - BULK (102240841)							
	24.50 lbm	POZMIX A FLYASH (100003690)							
	0.10 %	SA-1015, 50 LB SACK (102077046)							
	61.10 lbm	TYPE I / II CEMENT, BULK (101439798)							
	0.20 %	HALAD(R)-413, 50 LB (100003738)							

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
4	Displacement	MMCR FRESH WATER	40	bbl	8.33			8	1680
	0.50 gal/bbl	MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)							

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
5	Displacement	FRESH WATER	282	bbl	8.33			8	11844

Cement Left In Pipe	Amount	93 ft	Reason	Shoe Joint	
Mix Water:	pH 7.0	Mix Water Chloride:	<100 ppm	Mix Water Temperature:	55 °F
Cement Temperature:	N/A	Plug Displaced by:	8.3 lb/gal Fresh Water	Disp. Temperature:	55 °F
Plug Bumped?	Yes	Bump Pressure:	2490 psi	Floats Held?	Yes
Cement Returns:	N/A	Returns Density:	N/A	Returns Temperature:	N/A

Comment: Plug Bumped @ calculated displacement @ 2490 PSI. Floats Held and received 4 BBLS back to the truck. 15 BBLS of spacer returned to surface.