HALLIBURTON

iCem® Service

ADVANCED EXTRACTION TECHNOLOGIES

For:

Date: Sunday, February 22, 2015

EXTRACTION KODAK 10 7-3-28-270-4-N LINER

EXTRACTION KODAK 10 7-3-28-270-4-N LINER

Job Date: Thursday, February 05, 2015

Sincerely,

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Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Extraction Kodak 10** cement **production liner** job. A pre-job safety meeting was held before the job where details of the job were discussed, potential safety hazards were reviewed, and environmental compliance procedures were outlined.

Halliburton maintains a continuous quality improvement process and appreciates any comments or suggestions that you may have. Halliburton again thanks you for the opportunity to perform service work on this well. We hope to be your solutions provider for future projects.

Respectfully,

Halliburton Brighton

Job Times

	Date	Time	Time Zone
Requested Time On Location	2/5/2015		MTN
Called Out	2/5/2015	12:00	
On Location	2/5/2015	23:00	
Job Started	2/6/2015	00:00	
Job Completed	2/6/2015	05:00	
Departed Location	2/6/2015	06:00	

Cementing Job Summary

HALLIBURTON

The Road to Excellence Starts with Safety			
Sold To #: **369404**	Ship To #: **3113131**	Primary Sales Order #: **0902100739**	
Customer: **EXTRACTION OIL & GAS**		Job Purpose: **7525 CMT PRODUCTION LINER BOM**	
Well Name: **KODAK -10-**		Well #: **7-3-28-270-4-N**	API/UWI #: **05-123-37257-00**
Field: **WATTENBERG**	City: **WINDSOR**	Country/Parish: **WELD**	State/Prov: **COLORADO**
Legal Description:			
Rig Name & Number / Phone Number: **FRONTIER 10 / 720-245-4546**			Location: **LAND**
myCem id# : **152123**	Job Criticality Status: **YELLOW**	iFacts Request id #: **2212274, 2212269**	

Contacts

Type	Name	Email	Phone
Account Rep	**Kurry Mangold**	**Kurry.Mangold@halliburton.com**	**+13036554782**
Service Coordinator	**Mark Dean**	**Chris.Dean@Halliburton.com**	**+13035068462**

PPE, Safety Huddles, JSA's, HOC & Near Miss Reporting, BBP Observations			
Distance/Mileage(1 way) Srvcs:	**50 mile**	Distance/Mileage(1 way) Mtls:	**50 mile**
		Rqstd Job Start Date/Time:	**02/14/2015**

HSE Information

H2S Present:	**Unknown**	CO2 Present:	**Unknown**

Drive Safely. Lights On for Safety. Wear Seat Belts. Observe all HES / Customer Safety Policies.

Directions:

Hwy 85 North to CR 392, West on CR 392 to CR 257, Turn South on CR 257, Turn Left into the Kodak Truck Entrance, Turn Left at the Stop Sign and Follow rig signs to location

Instruction

Cementer: Bring 20 gal of MMCR & 100# of Sugar.

General Equipment

3rd Party / Inventory Items

SAP Number	Description	Quantity	UoM	Pricing Enabled
100003781	**CHEM, MICRO MATRIX RETARDER, 5 GAL**	**20**	**GAL**	**Yes**

Job Info / Well Data

Job Depth (MD) **ft**	Job Depth (TVD) **ft**	Well Fluid Type	Well Fluid Weight **lbm/gal**	Displacement Fluid	Displ Fluid Weight **lbm/gal**
12500				**Displacement**	**8.33**

BHST **degF**	BHCT **degF**	Log Temp **degF**	Time Since Circ Stopped **HH:MM:SS**

Job Tubulars/Tools

Description	Size in	Weight lbm/ft	ID in	Thread	Grade	Top MD ft	Btm MD ft	Top TVD ft	Btm TVD ft	Shoe Jnt ft	% Excess
7" Casing	**7**	**29**	**6.184**		**L-80**	**0**	**7623**				
6" Open Hole			**6**			**7623**	**12500**		**0**		**15**
4" Drill Pipe	**4**	**14**	**3.34**			**0**	**6740**				
4.5" Liner	**4.5**	**11.6**	**4**		**L-80**	**6740**	**12500**		**0**		

Mud conditioning plan

The condition of the drilling fluid is one of the most important variables in achieving a cement barrier. Prior to cementing, circulate the mud at the planned highest displacement rate for the cement job for at least 2 bottoms-up until the well is clean, mud is free of gas and pump pressures have stabilized.

Materials

Stage/Plug #: **1**

Fluid #	Fluid Name	Package/SBM/Material Name	Rqstd Del Qty	UOM	Density lbm/gal	Yield ft3/sack	Water Req Gal/sack	Rate bbl/min	Total Mix Fluid Gal/sack	Surface Batch Mixing Time
1	**11.5 lb/gal Tuned Spacer III**		**40**	**bbl**	**11.5**	**3.76**	**24.2**	**6**		
149.34 lbm/bbl		**Barite**								
Fluid Loss										
iFacts Test id #										

Fluid #	Fluid Name	Package/SBM/Material Name	Rqstd Del Qty	UOM	Density lbm/gal	Yield ft3/sack	Water Req Gal/sack	Rate bbl/min	Total Mix Fluid Gal/sack	Surface Batch Mixing Time hr
2	**Lead Cement**	**ECONOCEM (TM) SYSTEM**	**866**	**sack**	**13.8**	**1.4**	**6.48**	**6**	**6.48**	
6.48 Gal		**FRESH WATER Mix-On-Fly to Slurry**								
iFacts Test id #		**2212269**								

Fluid #	Fluid Name	Package/SBM/Material Name	Rqstd Del Qty	UOM	Density lbm/gal	Yield ft3/sack	Water Req Gal/sack	Rate bbl/min	Total Mix Fluid Gal/sack	Surface Batch Mixing Time
3	**Displacement**		**151.7**	**bbl**	**8.33**					
Fluid Loss										
iFacts Test id #										

Caution: Displacement quantities and densities are estimates ONLY! Do not use them for the actual job.

Packaged Materials				
SAP #	Material	Qty	UOM	Comments
100003681	**Barite**	**5973.6**	**lbm**	
	FRESH WATER	**7059.7**	**Gal**	

Casing Equipment

Pre-Job Customer Review Risk Assessment for Call Sheet:
The following risks must be reviewed and discussed with the Customer Representative before the job. If all of the steps of the listed Mitigation Plans or Contingency Plans cannot be followed, conducting a Management of Change (reference ST-GL-HAL-HMS-712) invoking your Stop Work Authority (reference ST-GL-HAL-HSE-0612) may be appropriate. Contact the Halliburton office to discuss how to resolve any issues, including whether Contingency Plans can be applied or whether you should exercise your Stop Work Authority so that any changes can be managed with the Customer.
Reminder: You are empowered to exercise Stop Work Authority any time (reference ST-GL-HAL-HSE-0612), even before contacting the Halliburton office.
Note: This pre-job customer review risk assessment does not replace the need to complete and review the job specific JSA's.

Pumping Schedule

Stage/ Plug #	Fluid #	Fluid Type	Fluid Name	Surface Density lbm/gal	Avg Rate bbl/min	Surface Volume
1	1	Spacer	TS III	11.5	6	40 bbl.
1	2	Cement Slurry	Lead Cement	13.8	8	866 sacks
1	4	Mud	Displacement	8.33	5	227 bbl.

Job Overview

Job OverView			
		Units	**Description**
1	Surface temperature at time of job	^{o}F	40
2	Mud type (OBM, WBM, SBM, Water, Brine)	-	water
3	Actual mud density	lb/gal	9.4
4	Time circulated before job	HH:MM	1 HOUR
5	Mud volume circulated	bbls	300
6	Rate at which well was circulated	bpm	5
7	Pipe movement during circulation	Y/N	N
8	Rig pressure while circulating	psi	800
9	Time from end mud circulation to start of job	HH:MM	30 MIN
10	Pipe movement during cementing	Y/N	N
11	Calculated displacement	bbls	227
12	Job displaced by	Rig/HES	HES
13	Annular before Job	Y/N	N
14	Annular flow after job	Y/N	N
15	Length of rat hole	ft	10
16	Units of gas detected while circulating	Units	0
17	Was lost circulation experienced at any time?	Y/N	N

Water Field Test

Cement Mix Water Requirements

Item	Recorded Test Value	Max Acceptable Limin	Potential Problems in Exceeding Limit
pH	7	5 to 8.5	Chemicals in water can cause severe retardation
Chlorides	0	3000 mg/L	Can accelerate the set time on cement 1% ~ 4800 mg/L
Sulfates	<200	1500 mg/L	Will greatly decrease its strength to the point where it may not set up at all
Total Hardness or Alkalinity	0	500 mg/L	Will retard cement and decrease its strength (only occurs @ pH ≥ 8.3)
Calcium	0	500 mg/L	High concentrations will accelerate the set of cement
Bicarbonates		1000 mg/L	Will greatly decrease its strength to the point where it may not set up at all
Iron	0	300 mg/L	High concentrations will accelerate the set of cement
Potassium		5000 ppm	High concentrations will accelerate the set of cement
Water Temp	40	50F to 80F	High temps will accelerate; Low temps may risk freezing in cold weather

Notes:

1. High concentrations of Carbonates and Bicarbonates may also cause slurry gelation in some situations

2. If the water's pH is greater than or equal to 8, avoid using it since Magnesium may be present (there are not field test strips for Magnesium)

1.0 Real-Time Job Summary

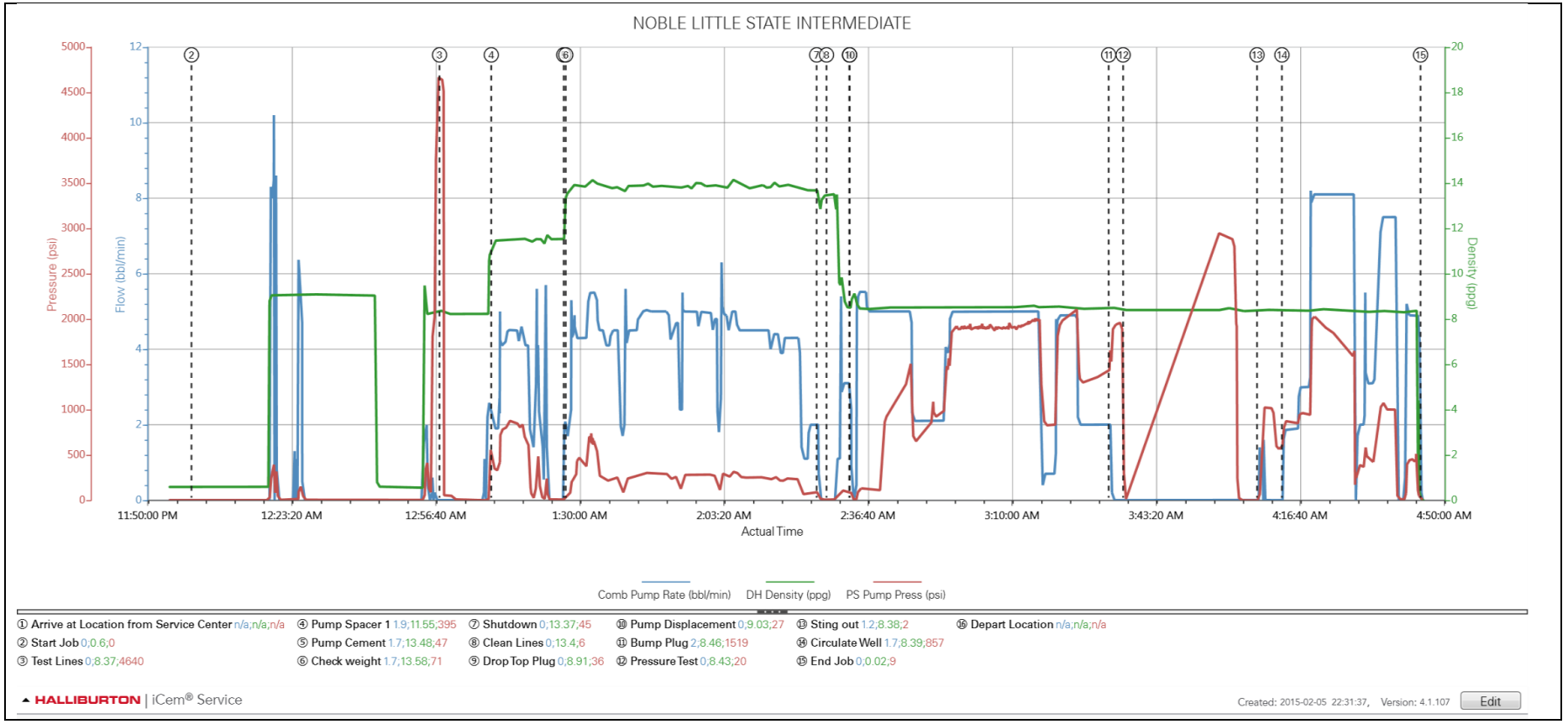
1.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comb Pump Rate (bbl/min)	DH Density (ppg)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Arrive at Location from Service Center	Arrive at Location from Service Center	2/5/2015	22:00:00	USER					ARRIVE AT LOCATION. RIG RUNNING IN LINER. HELD SITE ASSESSMENT AND PRE RIG UP SAFETY MEETING WITH CREW PRIOR TO RIGGING UP LINES.
Event	2	Start Job	Start Job	2/6/2015	00:00:35	COM4	0.00	0.60	0.00	0.0	HELD PRE JOB SAFETY MEETING WITH ALL PRESENT PERSONELL PRIOR TO JOB.
Event	3	Test Lines	Test Lines	2/6/2015	00:57:59	COM4	0.00	8.37	4640.00	1.8	PRESSURE TEST LINES TO 4600 PSI
Event	4	Pump Spacer 1	Pump Spacer 1	2/6/2015	01:09:57	COM4	1.90	11.55	395.00	4.1	PUMP 40 BBLS TUNED SPACER MIXED AT 11.5 PPG USING SUPPLIED WATER. DENSITY VERIFIED BY SCALE.
Event	5	Pump Cement	Pump Cement	2/6/2015	01:26:43	COM4	1.70	13.48	47.00	1.1	PUMP 215 BBLS (866 SKS) ECONOCEM WITH 2.5 BBLS MMCR ADDED TO LAST 5 BBLS. DENISTY VERIFIED BY SCALES.
Event	6	Check Weight	Check weight	2/6/2015	01:27:11	COM4	1.70	13.58	71.00	1.9	VERIFIED WEIGHT WITH SCALES
Event	7	Shutdown	Shutdown	2/6/2015	02:25:15	COM4	0.00	13.37	45.00	248.7	
Event	8	Clean Lines	Clean Lines	2/6/2015	02:27:32	COM4	0.00	13.40	6.00	248.7	WASH PUMPS AND LINES TO PIT.
Event	9	Drop Top Plug	Drop Top Plug	2/6/2015	02:32:50	COM4	0.00	8.91	36.00	257.6	3RD PARTY TOP PLUG DROPPED DURING SHUTDOWN.

Event	10	Pump Displacement	Pump Displacement	2/6/2015	02:32:53	COM4	0.00	9.03	27.00	257.6	DISPLACE USING 227 BBLS FRESH WATER.GOOD RETURNS THROUGHOUT.
Event	11	Bump Plug	Bump Plug	2/6/2015	03:32:49	USER	2.00	8.46	1519.00	232.6	PLUG LANDED AT 1519 PSI. PRESSURE BROUGHT TO 2000 PSI AND HELD 3 MIN.
Event	12	Pressure Test	Pressure Test	2/6/2015	03:36:10	USER	0.00	8.43	20.00	233.0	PRESSURE TEST BACKSIDE TO 3000 PSI FOR 5 MIN. RIG HAD CHECK VALVE SO PRESSURE RECORDED ON RIG GAUGE.
Event	13	Sting out	Sting out	2/6/2015	04:07:09	USER	1.20	8.38	2.00	237.2	PRESSURE UP TO 1000 PSI WHILE RIG STINGS OUT OF HANGER.
Event	14	Circulate Well	Circulate Well	2/6/2015	04:12:54	USER	1.70	8.39	857.00	238.6	CIRCULATE ON LINER TOP UNITL CLEAN. PUMPED 135 BBLS FRESH WATER TO CLEAN. APPROX 40 BBLS SPACER AND 12 BBLS CEMENT TO SURFACE.
Event	15	End Job	End Job	2/6/2015	04:44:59	COM4	0.00	0.02	9.00	158.7	HELD PRE RIG DOWN SAFETY MEETING PRIOR TO RIGGING DOWN LINES
Event	16	Depart Location	Depart Location	2/6/2015	06:00:00	USER					JOURNEY MGMT PRIOR TO LEAVING LOCATION

2.0 Attachments

2.1 EXTRACTION KODAK 10 7-3-28-270-4-N LINER-Custom Results.png



3.0 Custom Graphs