HALLIBURTON

iCem® Service

EXTRACTION OIL & GAS

For:

Date: Thursday, March 05, 2015

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

Surface

Job Date: Thursday, January 01, 2015

Sincerely,

Sebastian Estenssoro

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Kodak 10,** cement **Surface** casing 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
Requested Time On Location:		
Called Out Time:		
Arrived On Location At:	1/1/2015	0630
Job Started At:		1303
Job Completed At:		1453
Departed Location At:		1500

1.2 Cementing Job Summary

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Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 369404	**Ship To #:** 3113131	**Quote #:**	**Sales Order #:** 0901981408
Customer: EXTRACTION OIL & GAS		**Customer Rep:** Hugh McFly	
Well Name: KODAK -10-	**Well #:** 7-3-28-270-4-N		**API/UWI #:** 05-123-37257-00
Field: WATTENBERG	**City (SAP):** WINDSOR	**County/Parish:** WELD	**State:** COLORADO
Legal Description: SW NW-27-6N-67W-1341FNL-1042FWL			
Contractor: FRONTIER DRLG		**Rig/Platform Name/Num:** FRONTIER 10	
Job BOM: 7521			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HB21661		**Srvc Supervisor:** Bradley Hinkle	

Job

Formation Name				
Formation Depth (MD)	**Top**		**Bottom**	
Form Type			**BHST**	
Job depth MD	798ft		**Job Depth TVD**	
Water Depth			**Wk Ht Above Floor**	
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	798		0
Open Hole Section			13.5				0	810		0

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	9.625			798	Top Plug	9.625		HES
Float Shoe	9.625				Bottom Plug	9.625		HES
Float Collar	9.625			756	SSR plug set	9.625		HES
Insert Float	9.625				Plug Container	9.625		HES
Stage Tool	9.625				Centralizers	9.625		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	Spacer	Fresh Water	10	bbl	8.33			2	
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	Lead Cement	SWIFTCEM (TM) SYSTEM	335	sack	14.2	1.54		5	7.66

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Cementing Job Summary

7.66 Gal		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**
3	Displacement	Fresh Water	58	bbl	8.33			5	

Cement Left In Pipe	**Amount**	42 ft	**Reason**		Shoe Joint
Mix Water:	pH ##	**Mix Water Chloride:**	## ppm	**Mix Water Temperature:**	## °F °C
Cement Temperature:	## °F °C	**Plug Displaced by:**	## lb/gal kg/m3 XXXX	**Disp. Temperature:**	## °F °C
Plug Bumped?	Yes/No	**Bump Pressure:**	#### psi MPa	**Floats Held?**	Yes/No
Cement Returns:	## bbl m3	**Returns Density:**	## lb/gal kg/m3	**Returns Temperature:**	## °F °C
Comment 11 bbls Cement to Surface.					

1.3 Job Overview

		Units	Description
1	Surface temperature at time of job	^{o}F	
2	Mud type (OBM, WBM, SBM, Water, Brine)	-	
3	Actual mud density	lb/gal	
4	Actual mud Plastic Viscosity (PV)	cP	
5	Actual mud Yield Point (YP)	$lb_f/100ft^2$	
6	Actual mud 30 min Gel Strength	$lb_f/100ft^2$	
7	Time circulated before job	HH:MM	
8	Mud volume circulated	bbls	
9	Rate at which well was circulated	bpm	
10	Pipe movement during hole circulation	Y/N	
11	Rig pressure while circulating	psi	
12	Time from end mud circulation to start of job	HH:MM	
13	Pipe movement during cementing	Y/N	
14	Calculated displacement	bbls	
15	Job displaced by	Rig/HES	
16	Annular flow before job	Y/N	
17	Annular flow after job	Y/N	
18	Length of rat hole	ft	
19	Units of gas detected while circulating	units	
20	Was lost circulation experienced at any time?	Y/N	

1.4 Water Field Test

Item	Recorded Value	Units	Max Acceptable Limit	Potential Problems in Exceeding Limit
pH		-	6.0-8.0	Chemicals in the water can cause severe retardation
Chlorides		ppm	3000 ppm	Can shorten thickening time of cement
Sulfates		ppm	1500 ppm	Will greatly decrease the strength of cement
Total Hardness		ppm	500 mg/L	High concentrations will accelerate the set of the cement
Calcium		ppm	500 ppm	High concentrations will accelerate the set of the cement
Total Alkalinity		ppm	1000 ppm	Cement is greatly retarded to the point where it may not set up at all (typically occurs @ pH ≥ 8.3).
Bicarbonates		ppm	1000 ppm	Cement is greatly retarded to the point where it may not set up at all
Potassium		ppm	5000 ppm	High concentrations will shorten the pump time of cement (indicates the presence of chlorides, therefore if Potassium levels are measured as high, so should the chlorides)
Iron		ppm	300 ppm	High concentrations will accelerate the set of the cement
Temperature		^{o}F	50-80 ^{o}F	High temps will accelerate; Low temps may risk freezing in cold weather

Submitted Respectfully by:

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Comments
Event	1	Arrive at Location from Service Center	Arrive at Location from Service Center	1/1/2015	06:30:00	USER				PERFORM A SITE ASSESSMENT. RIG HAD JUST STARTED TRIPPING PIPE OUT OF THE HOLE.
Event	2	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	1/1/2015	11:30:00	USER				PRE-RIG UP SAFETY MEETING WITH HES PERSONNEL.
Event	3	Start Job	Start Job	1/1/2015	13:03:42	COM5	2.07	0.00	26.00	
Event	4	Safety Meeting	Safety Meeting	1/1/2015	13:30:00	USER	2.06	0.00	0.00	PRE-JOB SAFETY MEETING WITH ALL PERSONNEL ON LOCATION.
Event	5	Test Lines	Test Lines	1/1/2015	13:48:20	COM5	8.40	0.00	1635.00	PRESSURE TEST LINES.
Event	6	Pump Spacer 1	Pump Spacer 1	1/1/2015	13:53:03	COM5	8.36	1.00	15.00	PUMP 10 BBLS FRESH WATER.
Event	7	Pump Lead Cement	Pump Lead Cement	1/1/2015	14:01:06	COM5	9.08	1.40	26.00	PUMP 92 BBLS (335 SACKS) SWIFTCEM MIXED AT 14.2 PPG. DENSITY VERIFIED BY SCALES.
Event	8	Shutdown	Shutdown	1/1/2015	14:27:10	COM5	14.23	0.00	16.00	
Event	9	Drop Top Plug	Drop Top Plug	1/1/2015	14:31:10	COM5	14.36	0.00	8.00	TOP PLUG PRELOADED.
Event	10	Pump Displacement	Pump Displacement	1/1/2015	14:31:14	COM5	14.37	0.90	10.00	PUMP 58 BBLS FRESH WATER. GOOD RETURNS THROUGHOUT. 11 BBLS CEMENT TO SURFACE.
Event	11	Bump Plug	Bump Plug	1/1/2015	14:49:21	COM5	8.28	0.00	883.00	BUMP PLUG AT 301 PSI AND BROUGHT PRESSURE TO 922 PSI. HELD FOR 5 MINUTES.
Event	12	Check Floats	Check Floats	1/1/2015	14:52:17	USER	8.32	0.00	82.00	HALF BBL BACK. FLOATS HELD
Event	13	End Job	End Job	1/1/2015	14:53:11	COM5	8.28	0.00	0.00	
Event	14	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	1/1/2015	15:00:00	USER				PRE-RIG DOWN SAFETY MEETING WITH HES AND RIG PERSONNEL.

3.0 Attachments

3.1 EXTRACTION OIL & GAS KODAK 10 7-3-28-270-4-N.png