HALLIBURTON

iCem® Service

EXTRACTION OIL & GAS

For:

Date: Thursday, September 18, 2014

Extraction Diamond Valley East #8 Surface

Case 1

Sincerely,

Sebastian Estenssoro

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1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Diamond Valley East #8** 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	Time Zone
Called Out			MST
On Location			MST
Job Started	8/20/14	0543	MST
Job Completed	8/20/14	0634	MST
Departed Location			MST

1.2 Cementing Job Summary

HALLIBURTON *Cementing Job Summary*

The Road to Excellence Starts with Safety

Sold To #: 369404	**Ship To #:** 3356465	**Quote #:**	**Sales Order #:** 0901599564
Customer: EXTRACTION OIL & GAS		**Customer Rep:**	
Well Name: DIAMOND VALLEY EAST	**Well #:** 8		**API/UWI #:** 05-123-38564-00
Field: WATTENBERG	**City (SAP):** WINDSOR	**County/Parish:** WELD	**State:** COLORADO
Legal Description: SW SW-23-6N-67W-912FSL-155FWL			
Contractor:		**Rig/Platform Name/Num:** FRONTIER 10	
Job BOM: 7521			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HB60191		**Srvc Supervisor:** Edur Duran	

Job

Formation Name				
Formation Depth (MD)	**Top**		**Bottom**	
Form Type			**BHST**	
Job depth MD	809ft		**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	809		0
Open Hole Section			13.5				0	826		0

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	9.625	1		788	Top Plug	9.625	1	HES
Float Shoe	9.625	1			Bottom Plug	9.625	1	HES
Float Collar	9.625	1			SSR plug set	9.625	1	HES
Insert Float	9.625	1			Plug Container	9.625	1	HES
Stage Tool	9.625	1			Centralizers	9.625	1	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	10	bbl	8.33			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
2	Lead Cement	SWIFTCEM (TM) SYSTEM	320	sack	14.2	1.54		6	7.64

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Cementing Job Summary

7.64 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	Displacement	60	bbl	8.33			6	

Cement Left In Pipe	**Amount**	41 ft	**Reason**	Shoe Joint
Comment				

1.3 Planned Pumping Schedule

1. **Fill Lines with Water**
    a. Density = 8.33ppg
    b. Volume = 2bbl
2. **Pressure Test Lines to 3000psi**
3. **Pump Water Spacer**
    a. Density = 8.33 lb/gal
    b. Volume = 10 bbl
    c. Rate = 4 bpm
4. **Pump SwiftCem (Lead)**
    a. Density = 14.2
    b. Yield = 1.54
    c. Water Requirement = 7.64
    d. Volume = 320 sks (87 bbls)
    e. Rate = 5 bpm
5. **Drop Top Plug**
6. **Start Displacement**
7. **Pump Displacement Water**
    a. Density = 8.33 lb/gal
    b. Volume = 60 bbls
    c. Rate = 5 bpm
8. Land Plug – Anticipated Final Circulation Pressure 350 psi

Calculated Total Displacement = 60 bbls

1.4 Job Overview

		Units	Description
1	Surface temperature at time of job	°F	
2	Mud type (OBM, WBM, SBM, Water, Brine)	-	
3	Actual mud density	lb/gal	
4	Time circulated before job	HH:MM	
5	Mud volume circulated	Bbls	
6	Rate at which well was circulated	Bpm	
7	Pipe movement during hole circulation	Y/N	
8	Rig pressure while circulating	Psi	
9	Time from end mud circulation to start of job	HH:MM	
10	Pipe movement during cementing	Y/N	
11	Calculated displacement	Bbls	
12	Job displaced by	Rig/HES	
13	Annular before job)?	Y/N	
14	Annular flow after job	Y/N	
15	Length of rat hole	Ft	
16	Units of gas detected while circulating	Units	
17	Was lost circulation experienced at any time ?	Y/N	

1.5 Water Field Test

Item	Recorded Test 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

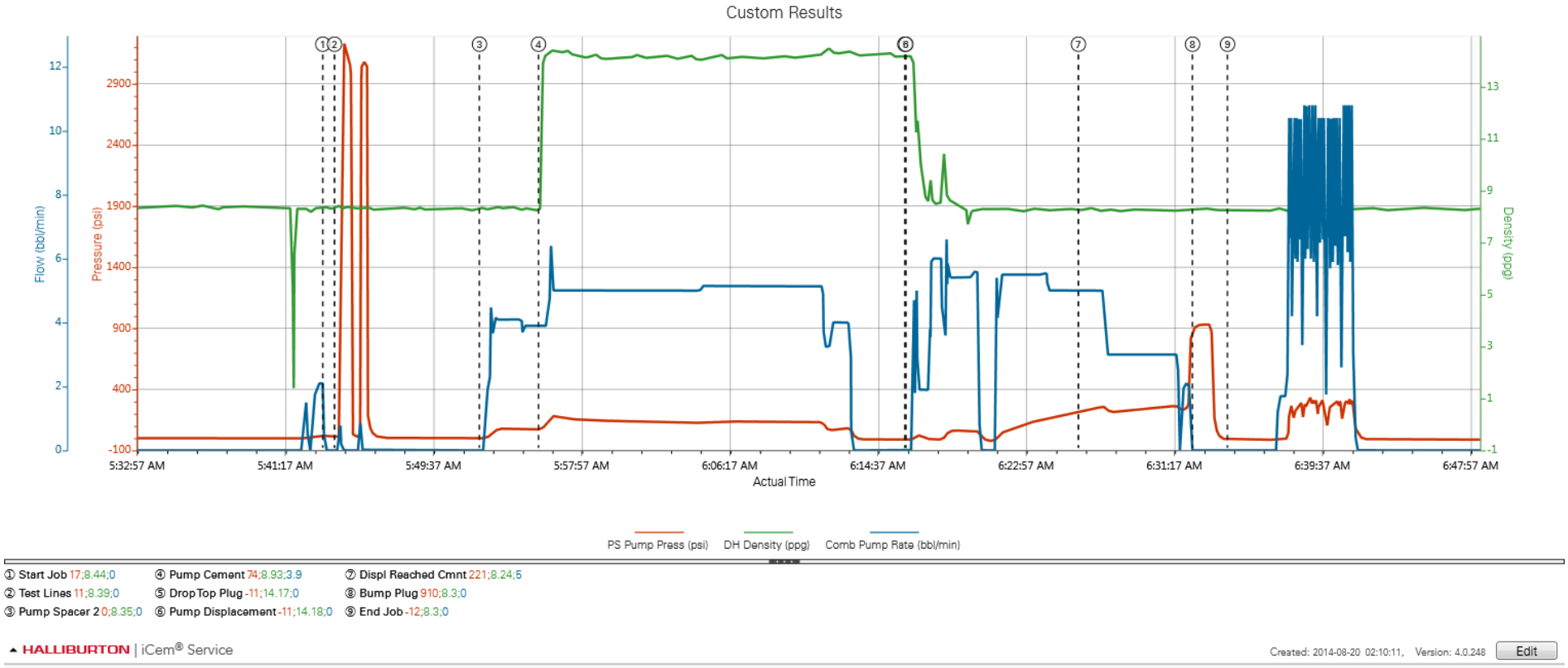
Submitted Respectfully by: _____

1.6 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comb Pump Rate *(bbl/min)*	DH Density *(ppg)*	DS Pump Press *(psi)*
Event	1	Start Job	Start Job	8/20/2014	05:43:30	COM5	0.00	8.44	17.00
Event	2	Test Lines	Test Lines	8/20/2014	05:44:10	COM5	0.00	8.39	10.00
Event	3	Pump Spacer 2	Pump Spacer 2	8/20/2014	05:52:19	COM5	0.00	8.35	0.00
Event	4	Pump Cement	Pump Cement	8/20/2014	05:55:38	COM5	3.90	8.93	75.00
Event	5	Drop Top Plug	Drop Top Plug	8/20/2014	06:16:14	COM5	0.00	14.17	-5.00
Event	6	Pump Displacement	Pump Displacement	8/20/2014	06:16:18	COM5	0.00	14.18	-5.00
Event	7	Displ Reached Cmnt	Displ Reached Cmnt	8/20/2014	06:26:00	COM5	5.00	8.24	226.00
Event	8	Bump Plug	Bump Plug	8/20/2014	06:32:25	COM5	0.00	8.30	906.00
Event	9	End Job	End Job	8/20/2014	06:34:23	COM5	0.00	8.30	-6.00

2.0 Custom Graphs

2.1 Custom Graph



3.0 Appendix