HALLIBURTON

iCem® Service

SYNERGY RESOURCES CORPORATION

For: DANIEL BATCHELOR
Date: Tuesday, August 19, 2014

ENSIGN 131 SRC KIEHN 32-4CHZ
Surface

Sincerely,
KEN BROOM

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1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **SRC KIEHN 32-4CHZ** 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	8/18/14	2300	
On Location	8/19/14	0440	
Job Started	8/19/14	0708	
Job Completed	8/19/14	0817	
Departed Location	8/19/14	0930	

1.2 Cementing Job Summary

Sold To #: 359915	**Ship To #:** 3542580	**Quote #:**	**Sales Order #:** 0901596638
Customer: SYNERGY RESOURCES CORPORATION		**Customer Rep:** Daniel Batchelor	
Well Name: SRC KIEHN	**Well #:** 32-4CHZ		**API/UWI #:** 05-123-39713-00
Field: WATTENBERG	**City (SAP):** JOHNSTOWN	**County/Parish:** WELD	**State:** COLORADO
Legal Description: SW SE-4-4N-68W-201FSL-1738FEL			
Contractor:		**Rig/Platform Name/Num:** ENSIGN 131	
Job BOM: 7521			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HB47901		**Srvc Supervisor:** Kendall Broom	

Job

Formation Name				
Formation Depth (MD)	**Top**		**Bottom**	
Form Type			**BHST**	
Job depth MD	600ft		**Job Depth TVD**	
Water Depth			**Wk Ht Above Floor**	
Perforation Depth (MD)			**To**	

Well Data

	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			0	600		
Open Hole Section			13.5				0	600		

Tools and Accessories

Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make
Guide Shoe	9.625	1		600		**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
	9.625	1				**Centralizers**	9.625	1	HES

Miscellaneous Materials

Gelling Agt		**Conc**		**Surfactant**		**Conc**		**Acid Type**		**Qty**			
Treatment Fld		**Conc**				Conc		**Sand Type**					

Fluid Data

Stage/Plug #: 1

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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	Mud Flush III (Powder)	Mud Flush III	12	bbl	8.4				
42 gal/bbl									

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	SwiftCem B2	SWIFTCEM (TM) SYSTEM	200	sack	13.4	1.79		4	9.48
9.48 Gal									

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		42	bbl	9				

ft In Pipe	Amount	40 ft		

Comment

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1.4 Planned Pumping Schedule

1. **Fill Lines with Water**
    a. Density =8.33
    b. Volume = 2
2. **Pressure Test Lines to 2500psi**
3. **Pump X Spacer**
    a. Density = 8.33 lb/gal
    b. Volume = 10 bbl
    c. Rate =3 bpm
4. **Pump X Spacer**
    a. Density = 8.33 lb/gal
    b. Volume = 12 bbl
    c. Rate = 3 bpm
5. **Pump X Spacer**
    a. Density = 8.33 lb/gal
    b. Volume = 10 bbl
    c. Rate =3 bpm
6. **Pump X (Lead)**
    a. Density = 13.4
    b. Yield = 1.79
    c. Water Requirement =9.48
    d. Volume = 200 sks (X bbls)
    e. Rate = 5 bpm
7. **Drop Top Plug**
8. **Start Displacement**
9. **Pump Displacement Water**
    a. Density =8.33 lb/gal
    b. Volume = 42 bbls
    c. Rate =
10. Land Plug – Anticipated Final Circulation Pressure X psi

Calculated Total Displacement = 42 bbls

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1.5 Water Field Test

Item	Recorded Test Value	Units	Max. Acceptable Limit	Potential Problems in Exceeding Limit
pH	7	----	6.0 - 8.0	Chemicals in the water can cause severe retardation
Chlorides	0	ppm	3000 ppm	Can shorten thickening time of cement
Sulfates	200	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	3	ppm	300 ppm	High concentrations will accelerate the set of the cement
Temperature	68	^{o}F	50-80 ^{o}F	High temps will accelerate; Low temps may risk freezing in cold weather

Submitted Respectfully by: _____

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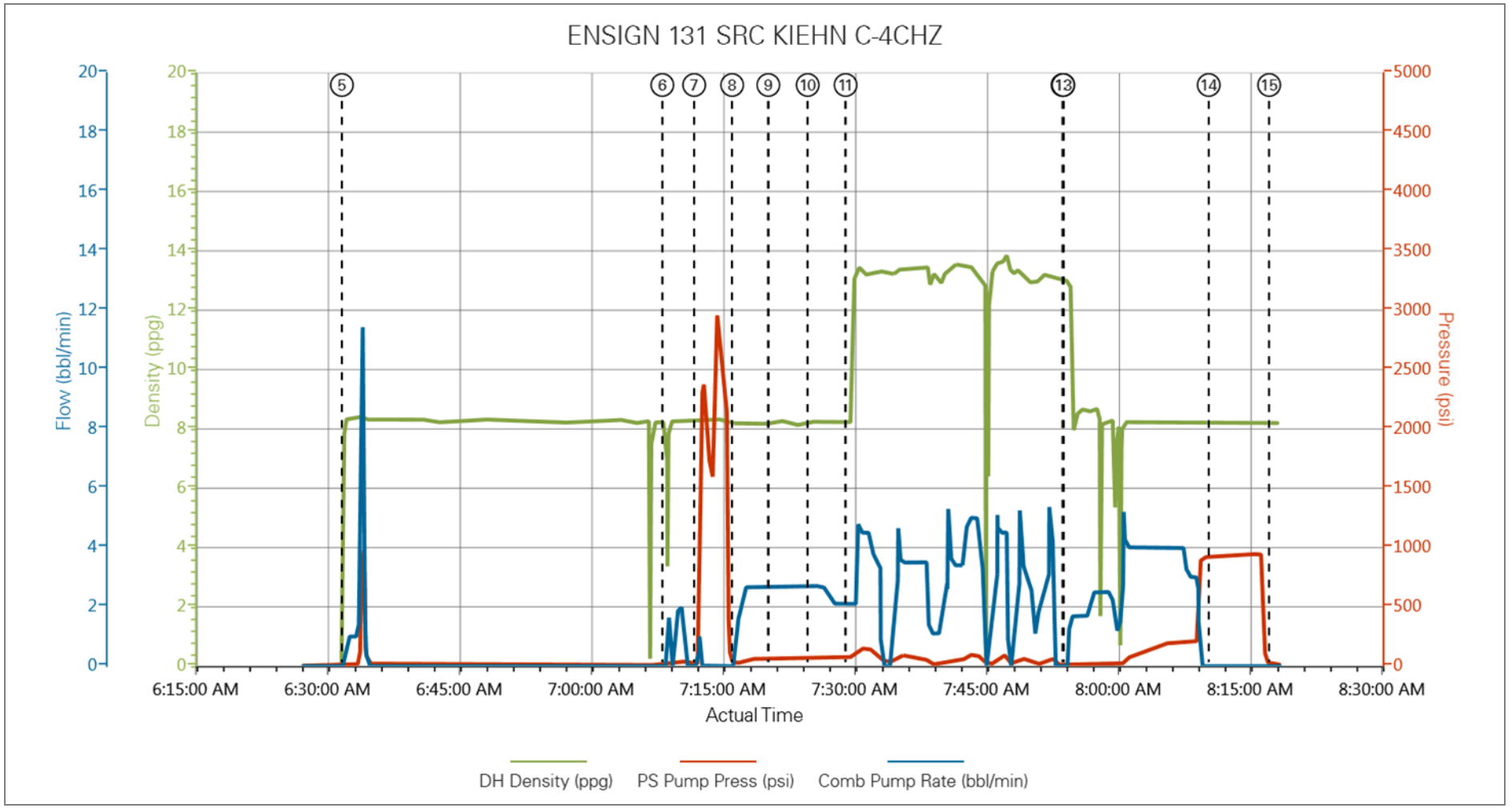
1.6 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density *(ppg)*	PS Pump Press *(psi)*	Comb Pump Rate *(bbl/min)*	Comment
Event	1	Call Out	Call Out	8/18/2014	23:00:00	USER				Called out crew to be on location at 0600
Event	2	Depart from Service Center or Other Site	Depart from Service Center or Other Site	8/19/2014	04:00:00	USER				Held safety huddle before leaving for lolcation
Event	3	Arrive At Loc	Arrive At Loc	8/19/2014	04:40:00	USER				Met with company man. Rig still had to run casing
Event	4	Rig-up Lines	Rig-up Lines	8/19/2014	06:00:00	USER				Had hazard hunt before spotting trucks and rigging up
Event	5	Safety Meeting	Safety Meeting	8/19/2014	06:31:58	USER	8.30	16.00	0.30	Had a safety meeting with the rig crew to discuss the operation and safety
Event	6	Start Job	Start Job	8/19/2014	07:08:26	COM4	8.28	10.00	0.00	Filled lines with 2 bbls water
Event	7	Test Lines	Test Lines	8/19/2014	07:12:04	COM4	8.22	23.00	0.00	Pressure tested lines to 2500
Event	8	Pump Spacer 1	Pump Spacer 1	8/19/2014	07:16:23	COM4	8.21	19.00	0.00	Pumped 10 bbls water
Event	9	Pump Spacer 2	Pump Spacer 2	8/19/2014	07:20:30	COM4	8.19	64.00	2.70	Pumped 12 bbls mud flush
Event	10	Pump Spacer 1	Pump Spacer 1	8/19/2014	07:24:59	COM4	8.24	72.00	2.70	Pumped 10 bbls water
Event	11	Pump Cement	Pump Cement	8/19/2014	07:29:18	COM4	8.16	75.00	2.10	Pumped 63.75 bbls #13.4 1.79 yield 9.48 gal/sks
Event	12	Drop Top Plug	Drop Top Plug	8/19/2014	07:53:59	COM4	12.95	9.00	0.00	Dropped plug preloaded witnessed by company man
Event	13	Pump Displacement	Pump Displacement	8/19/2014	07:54:05	COM4	12.97	9.00	0.00	Displaced 42 bbls water
Event	14	Bump Plug	Bump Plug	8/19/2014	08:10:37	COM4	8.21	924.00	0.00	Bumped at 700 psi climbed to 943 checked floats .5 bbl back to the truck
Event	15	End Job	End Job	8/19/2014	08:17:30	COM4	8.13	14.00	0.00	
Event	16	Rig Down Lines	Rig Down Lines	8/19/2014	08:38:15	USER				Had a safetty huddle before rigging down lines
Event	17	Depart Location	Depart Location	8/19/2014	09:30:00	USER				Held safety meeting before

	leaving location

2.0 Custom Graphs

2.1 Custom Graph



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