HALLIBURTON

iCem® Service

CATAMOUNT ENERGY PARTNERS LLC-EBUS

For: Reed Fischer

Date: Thursday, November 23, 2017

HAHN #3

HAHN #3

CATAMOUNT

Job Date: Thursday, November 23, 2017

Sincerely,

Farmington Cement Engineering

Legal Notice

Warning Disclaimer

Although the information contained in this report is based on sound engineering practices, the copyright owner(s) does (do) not accept any responsibility whatsoever, in negligence or otherwise, for any loss or damage arising from the possession or use of the report whether in terms of correctness or otherwise. The application, therefore, by the user of this report or any part thereof, is solely at the user's own risk.

Limitations of Liability

Except as expressly set forth herein, there are no representations or warranties by Halliburton, express or implied, including implied warranties of merchantability and/or fitness for a particular purpose. In no event will Halliburton or its suppliers be liable for consequential, incidental, special, punitive or exemplary damages (including, without limitation, loss of data, profits, use of hardware, or software). Customer accepts full responsibility for any investment made based on results from the Software. Any interpretations, analyses or modeling of any data, including, but not limited to Customer data, and any recommendation or decisions based upon such interpretations, analyses or modeling are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and assumptions are not infallible, and with respect to which professional may differ. Accordingly, Halliburton cannot and does not warrant the accuracy, correctness or completeness of any such interpretation, recommendation, modeling or other products of the Software Product. As such, any interpretation, recommendation or modeling resulting from the Software for the purpose of any drilling, well treatment, production or financial decision will be at the sole risk of Customer. Under no circumstances will Halliburton or its suppliers be liable for any damages.

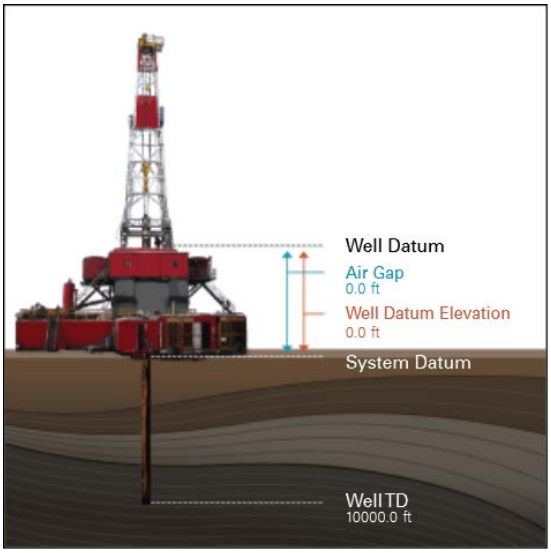
Table of Contents

1.0 Job Design

1.1 Overview

Job Type	Primary Cement Job
Injection Path	Casing/Conventional
Foam Job	No

Well Snapshot



Simulations Performed

1.2 Pump Schedule

Description	Stage No.	Density (ppg)	Rate (bbl/min)	Yield (ft^3/sack)	Water Req. (gal/sack)	Volume (bbl)	Bulk Cement (sacks)	Duration (min)
Int Mud	1	9.20	4.00			0.00		0.00
Tuned Spacer	2	11.50	5.00			20.00		4.00
PRB Lead 2334020/1	3	12.30	5.00	2.4347	13.641	43.36	100.00	8.67
PRB Lead 2334020/1 w/CBL	4	12.30	5.00	2.4347	13.641	62.88	145.00	12.58
PRB Tail 2334025/1	5-1	13.50	5.00	1.8690	9.406	46.60	140.00	9.32
Shutdown	5-2			1.8690	9.406		0.00	10.00
Top Plug/Start Displacement								
Fresh Water	6-1	8.33	5.00			60.00		12.00
Fresh Water	6-2	8.33	4.00			20.00		5.00
Fresh Water	6-3	8.33	2.00			5.13		2.57
					Total:	**257.97**		**64.13**

**Pump schedule may include additional rows for displacement if "Automatic Rate Adjustment" was enabled and ECDs approached the fracture gradient.*

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	Pass-Side Pump Pressure (psi)	Downhole Density (ppg)	Pass-Side Pump Rate (bbl/min)	PS Pmp Stg Tot (bbl)	Comments
Event	1	Call Out	11/23/2017	13:00:00	USER					CEMENT CREW CALLED OUT
Event	2	Depart Yard Safety Meeting	11/23/2017	15:20:00	USER					SAFETY MEETING HELD WITH CEMENT CREW
Event	3	Depart Home for Location	11/23/2017	15:30:00	USER					1-PICKUP 11583927, 1- RED TIGER 12638114, 2 - BULK TRUCKS 10822043 - 10025040, 11338239 - 10001398
Event	4	Arrive At Loc	11/23/2017	16:30:00	USER					CEMENT CREW ARRIVES ON LOCATION
Event	5	Comment	11/23/2017	16:35:00	USER					RIG REW AND CASING CREW ARE RUNNING IN HOLE WITH CASING AT TIME OF ARRIVAL
Event	6	TUBULARS	11/23/2017	16:40:00	USER					TD = 3702 FT, TP = 5 1/2" 15.5# SET @ 3692 FT, SJ = 46 FT, OH = 7 7/8", SURFACE = 8 5/8" 24# SET @ 541 FT
Event	7	WATER TEST	11/23/2017	16:45:00	USER					TEMPERATURE = 55 DEGREES, CHLORIDES = 0, PH = 7
Event	8	Pre-Rig Up Safety Meeting	11/23/2017	18:20:00	USER					SAFETY MEETING HELD WITH CEMENT CREW
Event	9	Rig-Up Equipment	11/23/2017	18:30:00	USER					CEMENT CREW RIGS UP EQUIPMENT
Event	10	Pre-Job Safety Meeting	11/23/2017	19:14:22	USER	8.00	8.32	0.00	0.0	SAFETY MEETING HELD WITH EVERYONE ON LOCATION
Event	11	Start Job	11/23/2017	19:20:53	COM5					
Event	12	Pressure Test	11/23/2017	19:38:29	USER	4986.00	8.42	0.00	2.4	PRESSURE TEST GOOD TO 4675 PSI
Event	13	Check weight	11/23/201	19:45:44	COM5					CHECK CEMENT WEIGHT = 11.5#

			7							
Event	14	Pump Spacer 1	11/23/2017	19:47:14	USER	136.00	8.37	4.90	1.3	PUMPED 10 BBLS H20
Event	15	Pump TUNED SPACER III	11/23/2017	19:49:35	USER	183.00	11.41	5.00	1.1	PUMPED 20 BBLS TUNED SPACER @ 11.5#
Event	16	Pump 1ST Lead Cement	11/23/2017	19:53:37	USER	93.00	12.39	5.00	2.4	100 SKS 2.43 CUFT/SK 13.61 GAL/SK = 43.3 BBLS @ 12.3# 32.4 BBLS H2O REQ
Event	17	Check weight	11/23/2017	19:55:11	COM5					CHECK CEMENT WEIGHT = 12.3#
Event	18	Pump 2ND Lead Cement	11/23/2017	20:02:32	USER	89.00	12.24	5.00	1.3	145 SKS 2.43 CUFT/SK 13.64 GAL/SK = 62.8 BBLS @ 12.3# 47.1 BBLS H2O REQ
Event	19	Check weight	11/23/2017	20:05:13	COM5					CHECK CEMENT WEIGHT = 12.3#
Event	20	Pump Tail Cement	11/23/2017	20:16:14	USER	95.00	13.41	4.90	1.4	140 SKS 1.87 CUFT/SK 9.4 GAL/SK = 46.6 BBLS @ 13.5# 31.3 BBLS H2O REQ
Event	21	Check weight	11/23/2017	20:20:02	COM5					CHECK CEMENT WEIGHT = 13.5#
Event	22	Shutdown	11/23/2017	20:30:38	USER	31.00	20.44	0.00	0.0	SHUTDOWN DROP PLUG
Event	23	Clean Lines	11/23/2017	20:32:11	USER	61.00	8.02	1.60	1.2	WASH PUMPS AND LINES
Event	24	Pump Displacement	11/23/2017	20:34:50	USER	89.00	7.75	5.10	2.2	CALCULATED 87 BBLS TO DISPLACE CEMENT, ACTUALLY PUMPED 86 BBLS TANK TO TANK MARK TO MARK
Event	25	Cement Returns to Surface	11/23/2017	20:46:04	USER	862.00	7.78	5.10	59.8	CALCULATED 35 BBLS OF CEMENT BACK TO SURFACE, ACTUALLY CIRCULATED 25 BBLS OF CEMENT BACK TO SURFACE
Event	26	Bump Plug	11/23/2017	20:53:04	USER	1629.00	7.80	0.00	87.4	CALCULATED 841 PSI TO LAND PLUG, PLUG BUMPED @ 1080 PSI PRESSURED UP TO 1645 PSI
Event	27	Check Floats	11/23/2017	20:56:31	USER	38.00	7.75	0.00	87.4	CHECK FLOATS, FLOATS HELD 1/4 BBLS BACK

Event	28	Shutdown	11/23/2017	20:57:49	USER	22.00	7.75	0.00	0.0	SHUTDOWN END JOB, THANK YOU FOR CHOOSING HALLIBURTON LEMONT JOJOLA AND CREW
Event	29	Pre-Rig Down Safety Meeting	11/23/2017	21:00:36	USER	44.00	8.22	2.50	2.3	SAFETY MEETING HELD WITH CEMENT CREW
Event	30	Rig-Down Equipment	11/23/2017	21:04:36	USER	22.00	8.12	2.50	12.2	CEMENT CREW RIGS DOWN EQUIPMENT
Event	31	Depart Location Safety Meeting	11/23/2017	21:55:28	USER					SAFETY MEETING HELD WITH CEMENT CREW
Event	32	Depart Home for Location	11/23/2017	21:59:51	USER					CEMENT CREW DEPARTS LOCATION

3.0 Attachments

3.1 CATAMOUNT HAHN #3 PRODUCTION-Custom Results.png