

# HALLIBURTON

iCem<sup>®</sup> Service

**TAPSTONE ENERGY LLC**

**For:**

Date: Tuesday, December 09, 2014

**2H**

Case 1

Sincerely,

**Aaron Malmgren (Service Supervisor)**

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1.0 Job Design

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## 2.0 Temperature Modeling

## 3.0 Real-Time Job Summary

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### 3.1 Stage Summary - Liquid Volume, Density, & Design Shutdown

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### 3.2 Stage Summary - Pump Pressure & ECD

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### 3.3 Stage Summary - Pump Rate & Nitrogen Rate

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### 3.4 Shutdown Summary

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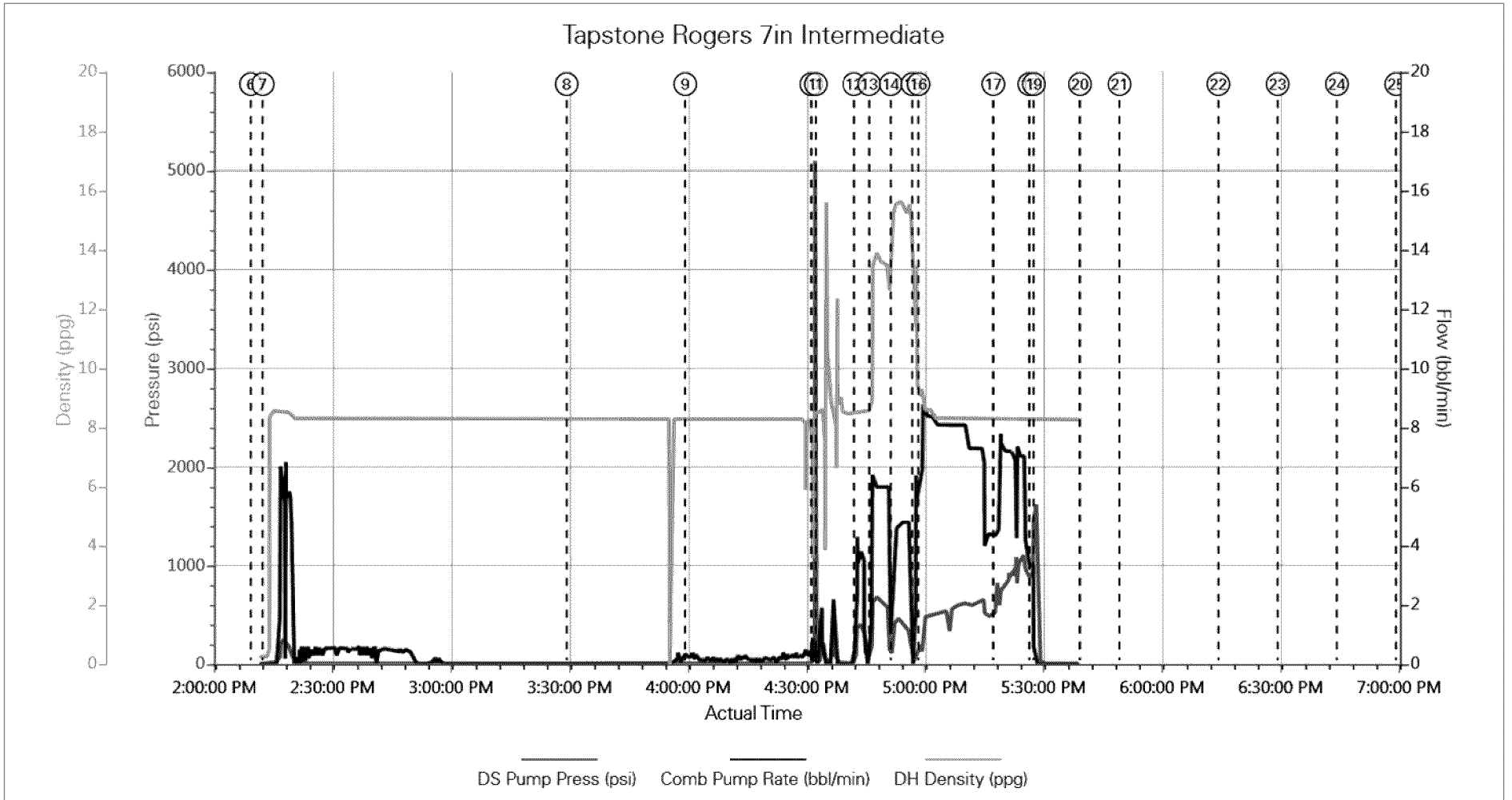
### 3.5 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Driv-Side Pump Pressure (psi)	Combined Pump Rate (bbl/min)	Downhole Density (ppg)	Comments
Event	1	Call Out	Call Out	12/9/2014	09:30:00	USER				called out to be on location @ 1430
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	12/9/2014	10:15:00	USER				discussed routes and stops while in route to location would be meeting bulk equipment on location
Event	3	Arrive At Loc	Arrive At Loc	12/9/2014	13:30:00	USER				rig had 700' of casing left to go before getting on bottom met with customer and tested water
Event	4	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	12/9/2014	13:45:00	USER				discussed potential hazards associated with job tasks decided who would do what job
Event	5	Rig-Up Equipment	Rig-Up Equipment	12/9/2014	13:50:00	USER				rigging up iron and water hoses
Event	6	Rig-Up Completed	Rig-Up Completed	12/9/2014	14:10:00	USER				all iron and hoses hooked up casing crew finishing with casing
Event	7	Start Job	Start Job	12/9/2014	14:13:06	COM8	6.00	0.00	0.26	Primed up pumping equipment
Event	8	Casing on Bottom	Casing on Bottom	12/9/2014	15:30:00	USER	13.00	0.10	8.30	casing crew rigging down hooking up CI on rig floor stabbed cement head so rig could circulate
Event	9	Pre-Job Safety Meeting	Pre-Job Safety Meeting	12/9/2014	16:00:00	USER	13.00	0.30	8.29	went over max rates and pressures for cement job
Event	10	Pressure Test	Pressure Test	12/9/2014	16:31:53	USER	5025.00	0.00	8.59	test lines to 5000 reset kickouts for 1500 psi
Event	11	Drop Bottom Plug	Drop Bottom Plug	12/9/2014	16:33:02	USER	8.00	1.30	8.58	stuffed bottom plug in pl container and put pin in loaded top plug
Event	12	Pump Spacer	Pump Spacer	12/9/2014	16:42:47	USER	435.00	3.40	8.61	10 bbls mud flush

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Driv-Side Pump Pressure (psi)	Combined Pump Rate (bbl/min)	Downhole Density (ppg)	Comments
Event	13	Pump Lead Cement	Pump Lead Cement	12/9/2014	16:46:39	USER	673.00	6.00	13.83	140 sacks Mixed @ 13.6 ppg
Event	14	Pump Tail Cement	Pump Tail Cement	12/9/2014	16:52:07	USER	455.00	4.60	15.42	90 Sacks mixed @ 15.6ppg
Event	15	Drop Top Plug	Drop Top Plug	12/9/2014	16:57:35	USER	138.00	6.20	12.67	released top plug from pump container
Event	16	Pump Displacement	Pump Displacement	12/9/2014	16:59:08	USER	280.00	8.80	8.69	pumped 194 bbls fresh water displacement
Event	17	Comment	Rupture bottom plug	12/9/2014	17:18:04	USER	632.00	4.20	8.31	ruptured bottom plug spacer began entering formation out the shoe
Event	18	Bump Plug	Bump Plug	12/9/2014	17:27:10	USER	1051.00	3.30	8.31	bumped plug took 500 of circulating pressure
Event	19	Check Floats	Check Floats	12/9/2014	17:28:19	USER	1623.00	0.00	8.30	floats held got back 2 bbls fresh water
Event	20	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	12/9/2014	17:40:00	USER				discussed potential hazards associated with rig down tasks worked as a team to safely rig down all iron and hoses
Event	21	Rig-Down Equipment	Rig-Down Equipment	12/9/2014	17:50:00	USER				rigging down
Event	22	Rig-Down Completed	Rig-Down Completed	12/9/2014	18:15:00	USER				all iron and hoses properly secured back onto HES equipment
Event	23	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	12/9/2014	18:30:00	USER				discussed routes and stops while in route back to HES field camps
Event	24	Crew Leave Location	Crew Leave Location	12/9/2014	18:45:00	USER				crews pulling off location
Event	25	End Job	End Job	12/9/2014	19:00:00	USER				all job activities completed thanks for calling halliburton

4.0 Custom Graphs

4.1 Custom Graph









5.1 One-Minutes Real-Time Data Listing

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