HALLIBURTON

iCem® Service

GREAT WESTERN OIL & GAS LLC

For:
Date: Monday, October 06, 2014

Postie iC 11-259HC

Case 1

Sincerely,

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1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Well Name and Number** cement **Job Type** 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.

This space is provided to enter in a brief summary of the job. Below are some important items to discuss"

1. **Quality of circulation before and during the job**
2. **The final circulating pressure**
3. **Whether or not any of the fluids that Halliburton pumped were returned to surface during the job**
4. **Whether or not a flare was present at any point during the job**
5. **A brief explanation any abnormalities on the job chart**
6. **If we deviated from the original job plan, a brief explanation why we did so**

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			
On Location			
Job Started			
Job Completed			
Departed Location			

HALLIBURTON

Field Ticket

Original

Field Ticket Number: 0901712617 **Field Ticket Date:** Monday, October 06, 2014 **Planning Order #:** NA

Bill To:
GREAT WESTERN OIL & GAS LLC - eBUS,
DONOTMAIL-1801 BROADWAY STE 500,
DENVER, CO, 80202

Ship To:
POSTLE IC 11-259HC,WELD,
PLATTEVILLE, CO, 80651

Job Name:	7" Intermediate
Order Type:	ZOH
Well Name:	POSTLE IC 11-259HC
Company Code:	1100
Customer PO No.:	W10831
Shipping Point:	FORT LUPTON Shipping Point
Sales Office:	ROCKY MOUNTAINS BD
Well Type:	HORIZONTAL OIL
Well Category:	Development
Rig Name/#:	Xtreme 17

Material	Description	QTY	UOM	Unit Amount	Gross Amount	Discount	Net Amount
7522	**CMT INTERMEDIATE CASING BOM**	1	JOB	0.00	0.00		0.00
	Cementing Services & Equipment						
16091	ZI - PUMPING CHARGE *DEPTH* *FEET/METERS (FT/M)*	1 7544 FT	EA	10,733.00	10,733.00	68.000 %	3,434.56
432904	CMT, ROCKIES SG SETUP	1	EA	0.00	11,086.00		4,514.48
	Cementing Materials						
452992	CMT, EconoCem (TM) system	580	SK	0.00	53,193.54		17,021.93
452979	CMT, ExpandaCem (TM) system	115	SK	0.00	17,367.55		5,557.63
2	MILEAGE FOR CEMENTING CREW *Number of Units*	50 1	MI	5.76	288.00	68.000 %	92.16
1	ZI-MILEAGE FROM NEAREST HES BASE,/UNIT *Number of Units*	50 1	MI	9.79	489.50	68.000 %	156.64
86954	ZI FUEL SURCHG-CARS/PICKUPS<1 1/2TON *Number of Units*	50 1	MI	0.23	11.50		11.50
86955	ZI FUEL SURCHG-HEAVY TRKS >1 1/2 TON *Number of Units*	50 1	MI	0.68	34.00		34.00
87605	FUEL SURCHG-CMT & CMT ADDITIVES *NUMBER OF TONS*	25 36.821	MI	0.23	211.72		211.72
76400	MILEAGE,CMT MTLS DEL/RET MIN *NUMBER OF TONS*	25 36.821	MI	3.35	3,083.76	68.000 %	986.80
3965	HANDLE&DUMP SVC CHRG, CMT&ADDITIVES,ZI *NUMBER OF EACH* *Unit of Measurement*	933 1 EA	CF	5.49	5,122.17	68.000 %	1,639.09
483826	SBM, CMT, Tuned Spacer III	30	BBL	293.00	8,790.00	68.000 %	2,812.80
100003681	CHEM, BARITE, BULK *Barite*	45	SK	31.07	1,398.15	68.000 %	447.41
			Totals	*USD*	**$ 111,808.89**	**$ 74,888.17**	**$ 36,920.72**

HALLIBURTON

Original

Field Ticket Signature

Field Ticket Number: 0901712617	Field Ticket Date: Monday, October 06, 2014	Planning Order #: NA

Bill To:
GREAT WESTERN OIL & GAS LLC - eBUS,
DONOTMAIL-1801 BROADWAY STE 500,
DENVER, CO, 80202

Ship To:
POSTLE IC 11-259HC,WELD,
PLATTEVILLE, CO, 80651

Job Name:	7" Intermediate
Order Type:	ZOH
Well Name:	POSTLE IC 11-259HC
Company Code:	1100
Customer PO No.:	W10831
Shipping Point:	FORT LUPTON Shipping Point
Sales Office:	ROCKY MOUNTAINS BD
Well Type:	HORIZONTAL OIL
Well Category:	Development
Rig Name/#:	Xtreme 17

THIS OUTPUT DOES NOT INCLUDE TAXES. APPLICABLE SALES TAX WILL BE BILLED ON THE FINAL INVOICE. CUSTOMER HEREBY ACKNOWLEDGES RECEIPT OF THE MATERIALS AND SERVICES DESCRIBED ABOVE , ON ANY PRECEDING PAGES, AND ATTACHED DOCUMENTS.

Gross Amount Total:	$ 111,808.89
Item Discount Total:	$ 74,888.17
Net Amount Total:	$ 36,920.72 USD

Customer Representative Signature:

Date:

S. Davis
Customer Representative

Devin Birchell
Halliburton Representative

Was our HSE performance satisfactory? (Health, Safety, Environment)
☐ Yes ☐ No

Were you satisfied with our equipment?
☐ Yes ☐ No

Were you satisfied with our people?
☐ Yes ☐ No

Comments:

1.2 Cementing Job Summary

Sold To #: 346459	**Ship To #:** 3474561	**Quote #:**	**Sales Order #:** 0901712617
Customer: GREAT WESTERN OIL & GAS LLC - eBUS		**Customer Rep:** S. Davis	
Well Name: POSTLE IC	**Well #:** 11-259HC		**API/UWI #:** 05-123-39353-00
Field: WATTENBERG	**City (SAP):** PLATTEVILLE	**County/Parish:** WELD	**State:** COLORADO
Legal Description: SW NW-11-3N-68W-1559FNL-422FWL			
Contractor:		**Rig/Platform Name/Num:** Xtreme 17	
Job BOM: 7522			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HB21661		**Srvc Supervisor:** Devin Birchell	

Job

Formation Name					
Formation Depth (MD)	**Top**		**Bottom**		
Form Type			**BHST**		
Job depth MD	7544ft		**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	0	9.625	8.921	36			0	1070	0	0
Casing	0	7	6.276	26		L-80	0	7544	0	0
Open Hole Section			8.75				1070	7554	0	0

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	7	1			Top Plug	7	1	HES
Float Shoe	7	1		7974	Bottom Plug	7		HES
Float Collar	7	1		7930	SSR plug set	7		HES
Insert Float	7	1			Plug Container	7	1	HES
	7	1			Centralizers	7	1	HES

Miscellaneous Materials

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

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	11.5 lb/gal Tuned Spacer III	Tuned Spacer III	30	bbl	11.5	3.73	24	5	

149.45 lbm/bbl 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
2	Lead Cement	ECONOCEM (TM) SYSTEM	580	sack	12.7	1.89		4	9.97

9.97 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	Tail Cement	EXPANDACEM (TM) SYSTEM	115	sack	13.8	1.67		4	7.71

7.71 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
4	Displacement	Displacement	305	bbl	8.33				

	Amount	45 ft		

Comment

1.4 Planned Pumping Schedule

1. **Fill Lines with Water**
    a. Density = X8.3
    b. Volume = X2
2. **Pressure Test Lines to Xps4625i**
3. **Pump X Spacer**
    a. Density = X lb/gal11.5
    b. Volume = X bbl30
    c. Rate = X bpm2
4. **Pump X (Lead)**
    a. Density = X12.7
    b. Yield = X1.89
    c. Water Requirement = X9.97
    d. Volume = X580 sks (195X bbls)
    e. Rate = X bpm5
5. **Pump X (Tail)**
    a. Density = X13.8
    b. Yield = X1.67
    c. Water Requirement = X7.71
    d. Volume = X115 sks (34X bbls)
    e. Rate = X bpm5
6. **Drop Top Plug**
7. **Start Displacement**
8. **Pump Displacement Water**
    a. Density = X lb/gal8.3
    b. Volume = X bbls305
    c. Rate = X bpm8
9. Land Plug – Anticipated Final Circulation Pressure X psi

Calculated Total Displacement = X bbls305.5

1.5 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	

Lost Circulation Details

Squeeze Job Information

		Units	Description
1	Was the well full prior to cementing?	Y/N	
2	Injection Rate #1 & Pressure	psi/bpm	
3	Injection Rate #2 & Pressure	psi/bpm	
4	Injection Rate #2 & Pressure	psi/bpm	
5	Initial ISIP	psi	
6	Final ISIP	psi	

Plug Job Information

		Units	Description
1	Density of well fluid exiting well prior to job	lb/gal	
2	Density of well fluid entering well prior to job	lb/gal	
3	Was the well full prior to cementing?	Y/N	
4	How many joints of workstring pulled wet?	# Joints	
5	Depth of workstring for circulation after the plug?	ft	
6	Calculated Plug Height	ft	

1.6 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		°F	50-80 °F	High temps will accelerate; Low temps may risk freezing in cold weather

Submitted Respectfully by: _____

1.7 Job Event Log

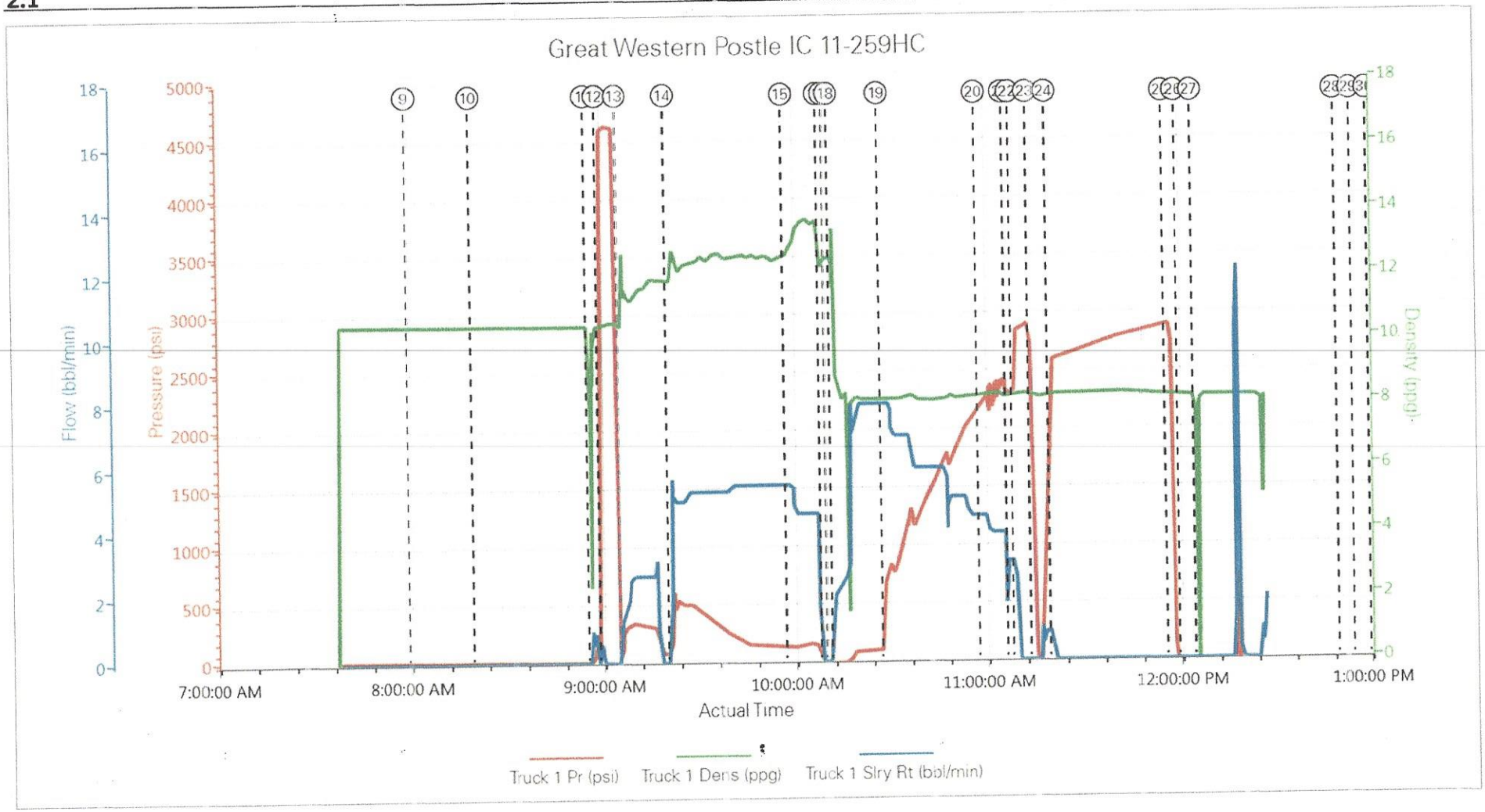
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Truck 1 Pr (psi)	Truck 1 Dens (ppg)	Truck 1 Slry Rt (bbl/min)	Comment
Event	1	Call Out	Call Out	10/5/2014	14:00:25	USER				called cement crew out for great western postle ic 11-259hc intermediate
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	10/5/2014	17:50:14	USER				discussed route weather other traffic fallowing distance
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	10/5/2014	18:00:12	USER				called journey and departed for location
Event	4	Arrive At Loc	Arrive At Loc	10/5/2014	19:00:14	USER				ended journey and talked to company rep on rates volumes depths and pressures
Event	5	Wait on Customer or Customer Sub-Contractor Equip - Start Time	Wait on Customer or Customer Sub-Contractor Equip - Start Time	10/5/2014	19:10:12	USER				rig having probles running casing waited off location till ready
Event	6	Wait on Customer or Customer Sub-Contractor Equipment - End Time	Wait on Customer or Customer Sub-Contractor Equipment - End Time	10/6/2014	06:30:12	USER				casing crew rig down and depart location company rep had us spot and start rigging up
Event	7	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	10/6/2014	06:35:21	USER				discussed spotting equipment swing path hand placement
Event	8	Rig-Up Equipment	Rig-Up Equipment	10/6/2014	06:40:12	USER				spot pump and rig up mater hoses and iron to rig floor
Event	9	Rig-Up Completed	Rig-Up Completed	10/6/2014	08:00:21	USER	17.00	10.48	0.00	rigged up cement head to casing rig break circulation
Event	10	Pre-Job Safety Meeting	Pre-Job Safety Meeting	10/6/2014	08:20:12	USER	16.00	10.42	0.00	discussed job procedures with cemenrt and rig crews
Event	11	Prime Pumps	Prime Pumps	10/6/2014	08:56:00	USER	7.00	3.05	0.00	primed pump and lines ready for pressure test
Event	12	Test Lines	Test Lines	10/6/2014	08:59:38	COM1	4145.00	10.55	0.00	test pump and lines to 4625 psi

Event	13	Pump Spacer 1	Pump Spacer 1	10/6/2014	09:05:54	COM1	150.00	10.43	1.30	pump 30 bbls tuned spacer @ 11.5 ppg
Event	14	Pump Lead Cement	Pump Lead Cement	10/6/2014	09:21:18	COM1	131.00	11.86	1.00	pump 195 bbls (580 sks) 12.7 ppg lead, y: 1.89 ft3/sk w: 9.97 gal/sk
Event	15	Pump Tail Cement	Pump Tail Cement	10/6/2014	09:57:51	COM1	134.00	12.65	5.50	pump 34 bbls (115 sks) 13.8 ppg lead, y: 1.67 ft3/sk w: 7.71 gal/sk
Event	16	Drop Top Plug	Drop Top Plug	10/6/2014	10:08:41	USER	-10.00	12.47	0.00	drop top plug with company rep witnessing
Event	17	Clean Lines	Clean Lines	10/6/2014	10:10:21	USER	-11.00	12.55	0.00	cleaned pump and lines on top of plug
Event	18	Pump Displacement	Pump Displacement	10/6/2014	10:11:54	COM1	13.00	13.38	1.10	pump 305.5 bbls fresh water displacement
Event	19	Displ Reached Cmnt	Displ Reached Cmnt	10/6/2014	10:27:51	USER	663.00	8.22	8.00	displacement reach cement with 88 bbls away
Event	20	Spacer Returns to Surface	Spacer Returns to Surface	10/6/2014	10:58:12	USER	2209.00	8.22	4.50	with 250 bbls displacement away spacer returns to surface (30 bbls)
Event	21	Cement Returns to Surface	Cement Returns to Surface	10/6/2014	11:06:45	USER	2290.00	8.20	3.10	with 281 bbls displacement away cement returns to surface (21 bbls)
Event	22	Bump Plug	Bump Plug	10/6/2014	11:08:41	COM1	2514.00	8.28	3.10	bumped plug with 2364 psi and took pressure to 2874 psi
Event	23	Check Floats	Check Floats	10/6/2014	11:14:05	USER	1866.00	8.25	0.00	checked floats, floats held with 3 bbls back to truck
Event	24	Pressure Up	Pressure Up	10/6/2014	11:20:00	USER	2554.00	8.22	0.00	pressure up casong to 2551 psi and hold for 30 minutes
Event	25	Release Casing Pressure	Release Casing Pressure	10/6/2014	11:56:24	USER	2897.00	8.24	0.00	released casing pressure from 2864 psi to0 psi
Event	26	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	10/6/2014	12:00:12	USER	-54.00	8.17	0.00	discussed hand placement swing path and pinch points
Event	27	Rig-Down Equipment	Rig-Down Equipment	10/6/2014	12:05:14	USER	-61.00	-0.23	0.00	rig down water hoses and all iron
Event	28	Rig-Down Completed	Rig-Down Completed	10/6/2014	12:50:14	USER				walk around to ensure everything is porperly put away

Event	29	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	10/6/2014	12:55:15	USER		discussed route weather other traffic fallowing distance
Event	30	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	10/6/2014	13:00:25	USER		thank you for using halliburton energy services

2.0 Custom Graphs

2.1 Custom Graph



3.0 Appendix

Insert Planned Pump Schedule from Proposal or actual Job Procedure built for job