HALLIBURTON

iCem® Service

K P KAUFFMAN CO INC-EBUS

For: Rick Ramos

Date: Tuesday, July 28, 2020

State 18

State 18

Job Date: Tuesday, July 28, 2020

Sincerely,

Nick Roles and Crew

Legal Notice

Disclaimer:

All information in this report is provided subject to the terms and conditions which govern the services provided by Halliburton. Halliburton personnel use their best efforts in gathering information and their best judgment in interpreting it, but any interpretation, research, analysis or recommendation furnished by Halliburton are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and empirical relationships and assumptions are not infallible, and with respect to which professionals in the industry may differ. iCem 3D Displacement results are used to understand how fluids intermix during a cement job. Simulation and 3D displacement results are not intended as and should not be used as a replacement for bond logs in determining top of cement. Current 3D model calculations are known to model more volume than the input volume for standard cases due to known calculation improvements required. For rotational cases, the modeled volume will be impacted by the same calculations impacting the standard cases, as well as additional constraints imposed to make the calculation time required operationally feasible. Therefore, until further notice, 3D displacement results should not be used for replacement of a bond log, or used as an identifier of top of cement. HALLIBURTON IS UNABLE TO GUARANTEE THE ACCURACY OF ANY CHART INTERPRETATION, RESEARCH ANALYSIS, OR JOB RECOMMENDATION and any interpretation or recommendation is not for use of or reliance upon by any third party. The customer has full responsibility for any of its decisions which are based on the information provided in this report.

Table of Contents

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **State 18 2.375" PTA** 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.

Approximately 0.5 bbls of cement were returned to surface.

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 Fort Lupton

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Dwnhole Density (ppg)	Cmb Pump Rate (bbl/min)	Pump A Pressure (psi)	Cmb Stg Total (bbl)	Comments
Event	1	Call Out	Call Out	7/28/2020	04:00:00	USER					Called out by Service Coordinator for O/L at 0830
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	7/28/2020	06:15:00	USER					Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	7/28/2020	06:30:00	USER					Journey Management prior to departure
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	7/28/2020	07:00:00	USER					Upon arrival met with company man to discuss job details and calculations, performed hazard hunt and site assessment.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	7/28/2020	08:00:00	USER					Discussed rigging up hazards and procedure according to HMS.
Event	6	Rig-Up Date/Time	Rig-Up Date/Time	7/28/2020	08:15:00	USER					Begin Rig-up.
Event	7	Rig-Up Completed	Rig-Up Completed	7/28/2020	08:25:00	USER					Rig-up complete with no injuries.
Event	8	Other	Other	7/28/2020	08:30:00	USER					Water test- PH-6, Chlor-0, Temp-65. Cement temp-70.
Event	9	Pre-Job Safety Meeting	Pre-Job Safety Meeting	7/28/2020	09:15:00	USER	8.49	7.32	161.62	4.14	Held safety meeting with all job associated personnel to discuss job procedure, hazards and stop work authority.

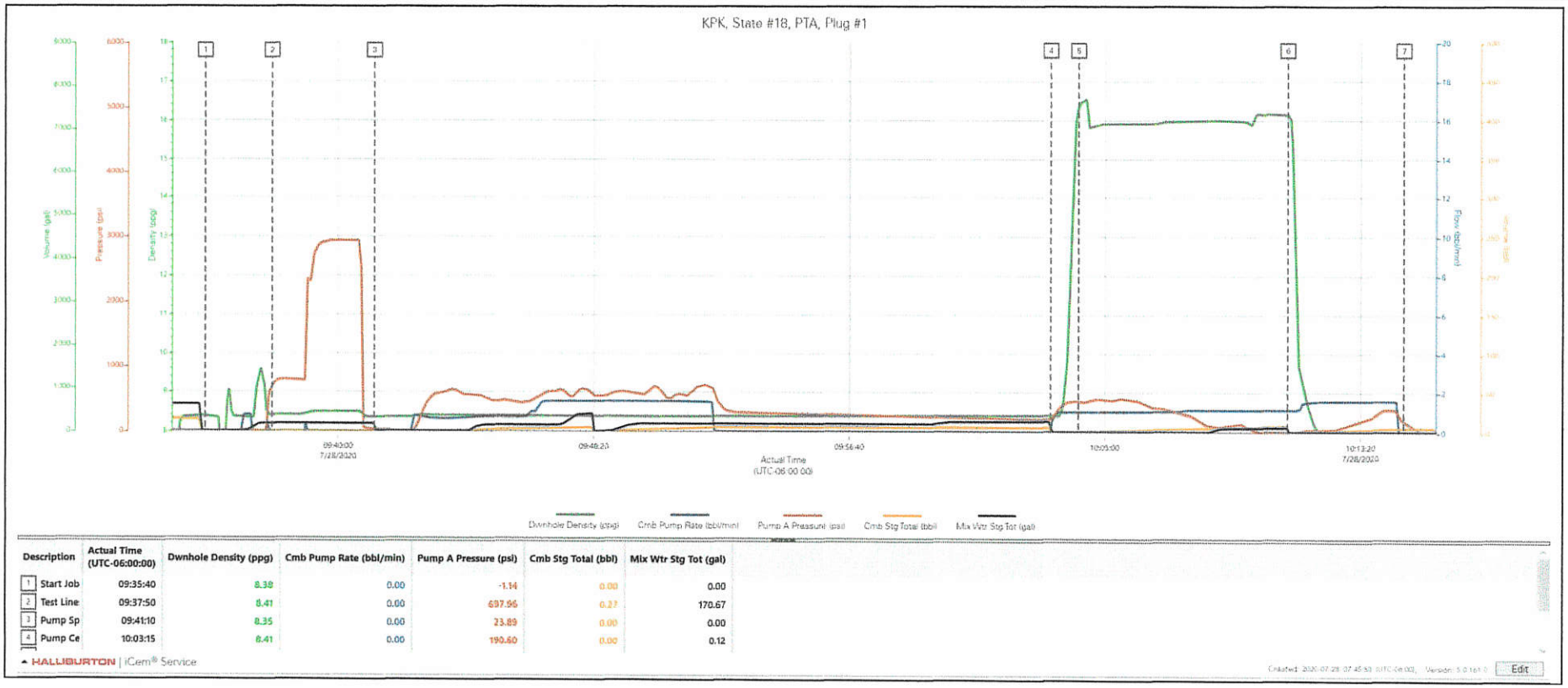
Event	10	Start Job	Start Job	7/28/2020	09:35:40	NONE	8.38	0.00	-1.14	0.00	Tub-2.375" 4.7#, Ret-1800', Perfs-1850',Cas-4.5" 11.6#, Surf-8.625" 24# at 792'
Event	11	Test Lines	Test Lines	7/28/2020	09:37:50	NONE	8.41	0.00	697.96	0.27	Filled lines with 0.5bbls, closed valve and performed 500psi k/o function test, continued with 5th gear stall at 2300psi, brought up to 3000psi. Pressure stabilized and held with no leaks.
Event	12	Pump Spacer 1	Pump Spacer 1	7/28/2020	09:41:10	NONE	8.35	0.00	23.89	0.00	Pumped 10bbls fresh water at 1.5bpm, got returns around 1.5bbls gone, pressure broke at 650psi, fell to 330psi at 1.5bpm.
Event	13	Pump Cement	Pump Cement	7/28/2020	10:03:15	NONE	8.41	0.00	190.60	0.00	Pumped 35sks or 7.17bbls of 15.8# 1.15y 4.99g/s G cement at 1bpm 450psi, pressure fell with vacuum to 30psi.
Event	14	Check Weight	Check Weight	7/28/2020	10:04:09	NONE	16.34	0.98	464.36	0.84	Weight verified with pressurized scales at 15.8#.
Event	15	Pump Displacement	Pump Displacement	7/28/2020	10:10:58	NONE	16.14	1.10	0.08	0.02	Pumped 6bbls fresh water at 1.5bpm. pressure climbed to 150psi 3bbls into.
Event	16	Shutdown	Shutdown	7/28/2020	10:14:44	NONE	7.64	0.00	161.65	5.28	Shutdown pumps, rig stung out of retainer bleeding pressure. Disconnected and washed up. Est. cement in form-5.62bbls. Based off 8" OH-HOC-132' TOC-1717'
Event	17	Start Job	Start Job	7/28/2020	11:51:05	NONE	7.62	0.00	1.55	0.00	Perfs-842', Ret-792', 8.625" 24# 792'.

Event	18	Pump Spacer 2	Pump Spacer 2	7/28/2020	12:01:56	NONE	7.56	0.00	29.44	0.00	Pumped 10bbls fresh water at 1.5bpm to clean previous casing. Followed with 10bbls fresh water through retainer and perfs at 1.5bpm.
Event	19	Pump Cement	Pump Cement	7/28/2020	12:15:35	NONE	9.87	1.38	106.11	0.37	Pumped 50sks or 10.5bbls of 15.8# 1.18y 5.16g/s G Cement with 2% CC (100#s) at 1.5bpm. Est.
Event	20	Pump Displacement	Pump Displacement	7/28/2020	12:21:45	NONE	15.64	1.62	52.86	0.03	Pumped 2bbls fresh water at 1.5bpm.
Event	21	Shutdown	Shutdown	7/28/2020	12:23:37	NONE	-0.99	0.00	4.84	1.77	Rig stung out of retainer, disconnected HES lines and washed up while rig tripped out for wire line. Est. TOC-635'.
Event	22	Resume	Resume	7/28/2020	13:20:00	USER	7.41	0.00	4.03	0.00	Rig had perfs at 100'. Rigged down BOP to pump through stub.
Event	23	Pump Spacer	Pump Spacer	7/28/2020	13:25:13	USER	6.75	0.00	2.74	0.00	Pumped 3.5bbls to get fresh water to surface at 2bpm.
Event	24	Pump Cement	Pump Cement	7/28/2020	13:40:27	NONE	7.38	0.00	8.99	0.00	Pumped 40sks or 8bbls 15.8# 1.15y 4.99g/s G cement at 2bpm. cement to surface.
Event	25	Shutdown	Shutdown	7/28/2020	13:46:50	NONE	16.05	0.00	6.32	7.00	Rigged down stub to check top of cement. Cement settled at top of well, not needing topout.

Event	26	End Job	End Job	7/28/2020	13:52:04	NONE	16.16	0.00	7.35	7.00	End job rig HES lines down and washup. Plug #1-Est. cement in form-5.62bbls. Based off 8" OH-HOC-132' TOC-1717', Plug #2-Pumped 10.5bbls cement at 15.8#, Est. TOC-635' into surface casing. Plug #3-Pumped 40sks or 8bbls to get cement to surface. Disconnected well stub, cement settled on top without falling. Co rep did not need additional topout.
Event	27	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	7/28/2020	14:15:00	USER					Discussed rigging down hazards and procedure according to HMS with all HES personnel
Event	28	Safety Meeting - Departing Location	Safety Meeting - Departing Location	7/28/2020	14:45:00	USER					Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive.
Event	29	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	7/28/2020	15:00:00	USER					Pre journey management prior to departure.

3.0 Attachments

3.1 plug 1.png



Description	Actual Time (UTC-06:00:00)	Dwnhole Density (ppg)	Cmb Pump Rate (bbl/min)	Pump A Pressure (psi)	Cmb Stg Total (bbl)	Mix Wtr Stg Tot (gal)
1 Start Job	09:35:40	8.39	0.00	-1.14	0.00	0.00
2 Test Line	09:37:50	8.41	0.00	697.96	0.27	170.67
3 Pump Sp	09:41:10	8.35	0.00	23.89	0.00	0.00
4 Pump Ce	10:03:15	8.41	0.00	190.60	0.00	0.12

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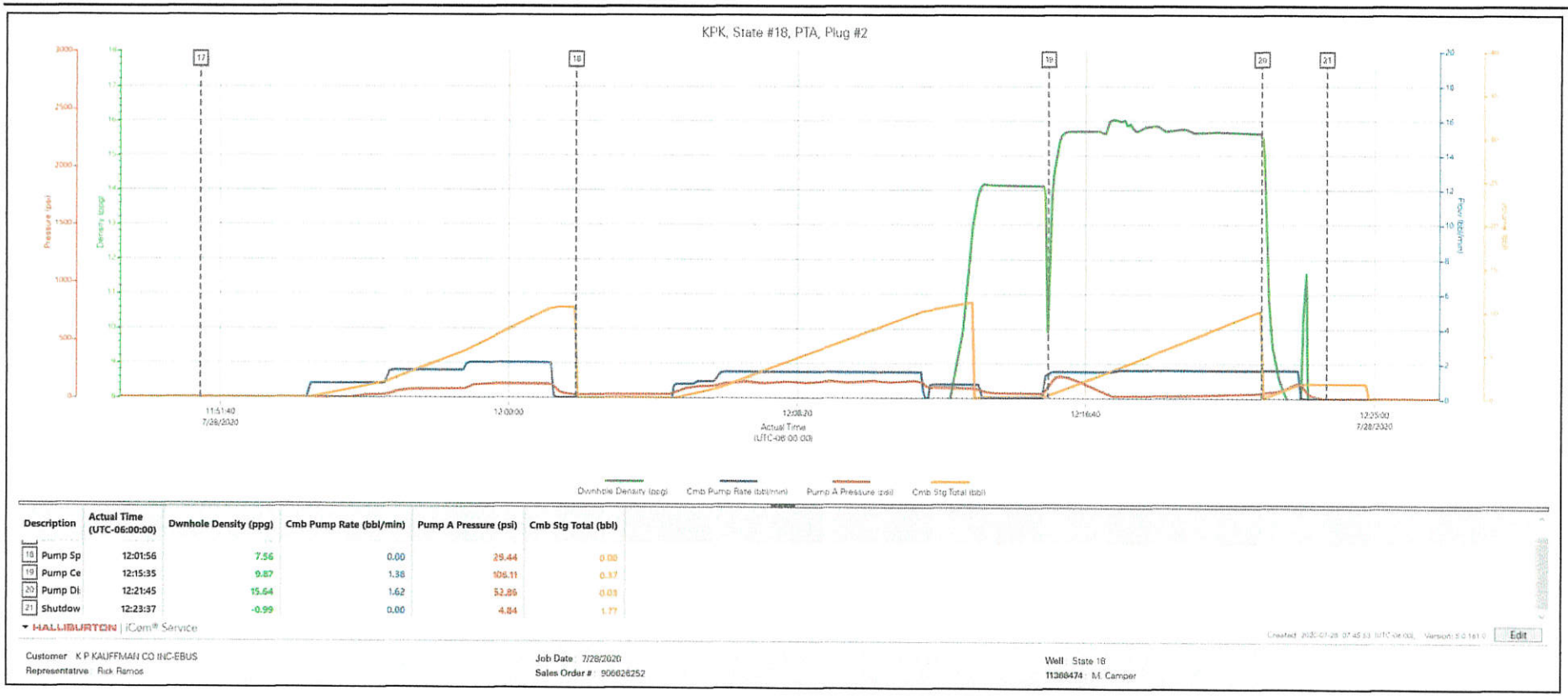
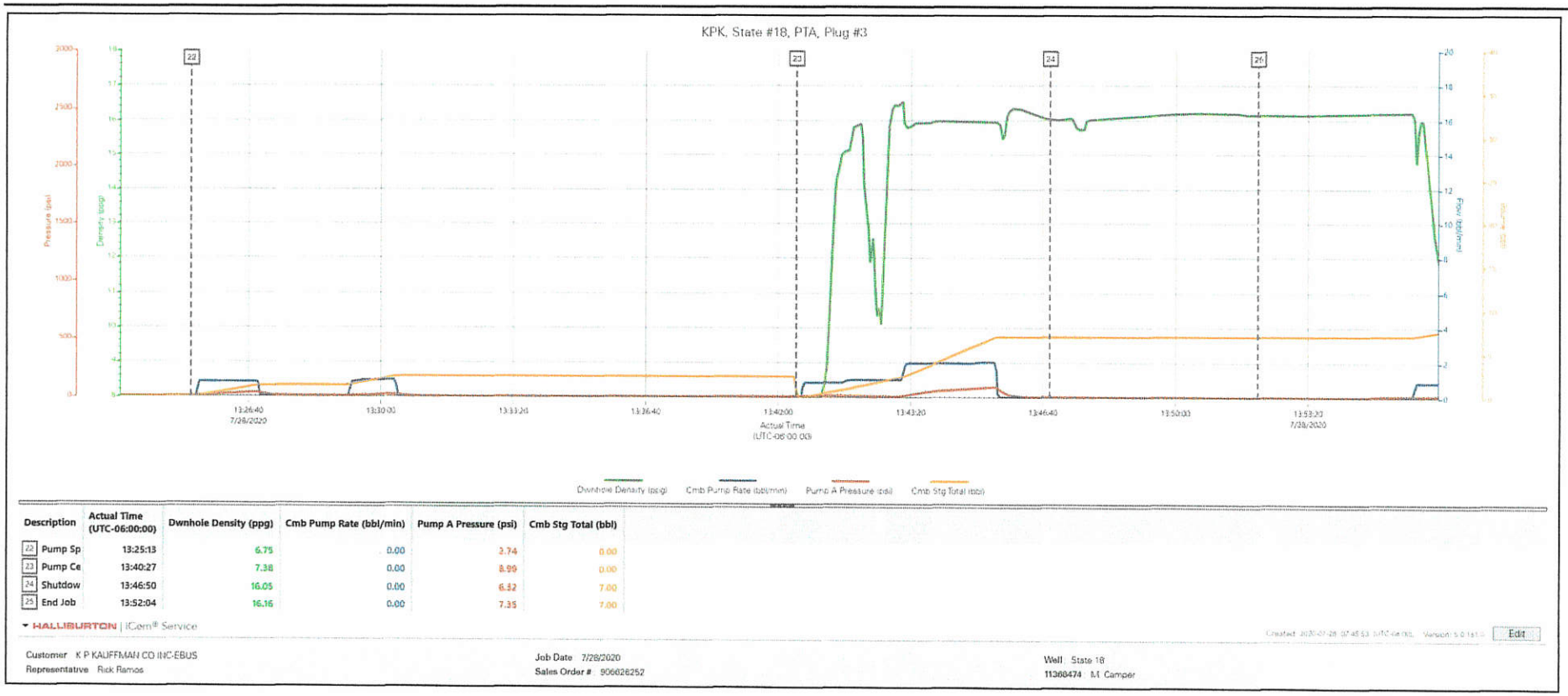
3.2 Plug 2.png


KPK, State #18, PTA, Plug #2
Pressure (psi)
Density (ppg)
Flow (bbl/min)
17
18
19
20
21
11:51:40
7/28/2020
12:00:00
12:08:20
Actual Time
(UTC-06:00:00)
12:16:40
12:25:00
7/28/2020
Dwnhole Density (ppg)
Cmb Pump Rate (bbl/min)
Pump A Pressure (psi)
Cmb Stg Total (bbl)
Description
Actual Time (UTC-06:00:00)
Dwnhole Density (ppg)
Cmb Pump Rate (bbl/min)
Pump A Pressure (psi)
Cmb Stg Total (bbl)
18 Pump Sp 12:01:56 7.56 0.00 29.44 0.00
19 Pump Ce 12:15:35 9.87 1.38 106.11 0.37
20 Pump Di 12:21:45 15.64 1.62 52.86 0.03
21 Shutdow 12:23:37 -0.99 0.00 4.84 1.77
HALLIBURTON | iCem® Service
Edit
Customer: K P KAUFFMAN CO INC-EBUS
Representative: Rick Ramos
Job Date: 7/28/2020
Sales Order #: 906626252
Well: State 18
11368474 : M. Camper

3.3 3.png



Description	Actual Time (UTC-06:00:00)	Dwnhole Density (ppg)	Cmb Pump Rate (bbl/min)	Pump A Pressure (psi)	Cmb Stg Total (bbl)
22 Pump Sp	13:25:13	6.75	0.00	2.74	0.00
23 Pump Ce	13:40:27	7.38	0.00	8.99	0.00
24 Shutdow	13:46:50	16.05	0.00	6.82	7.00
25 End Job	13:52:04	16.16	0.00	7.35	7.00

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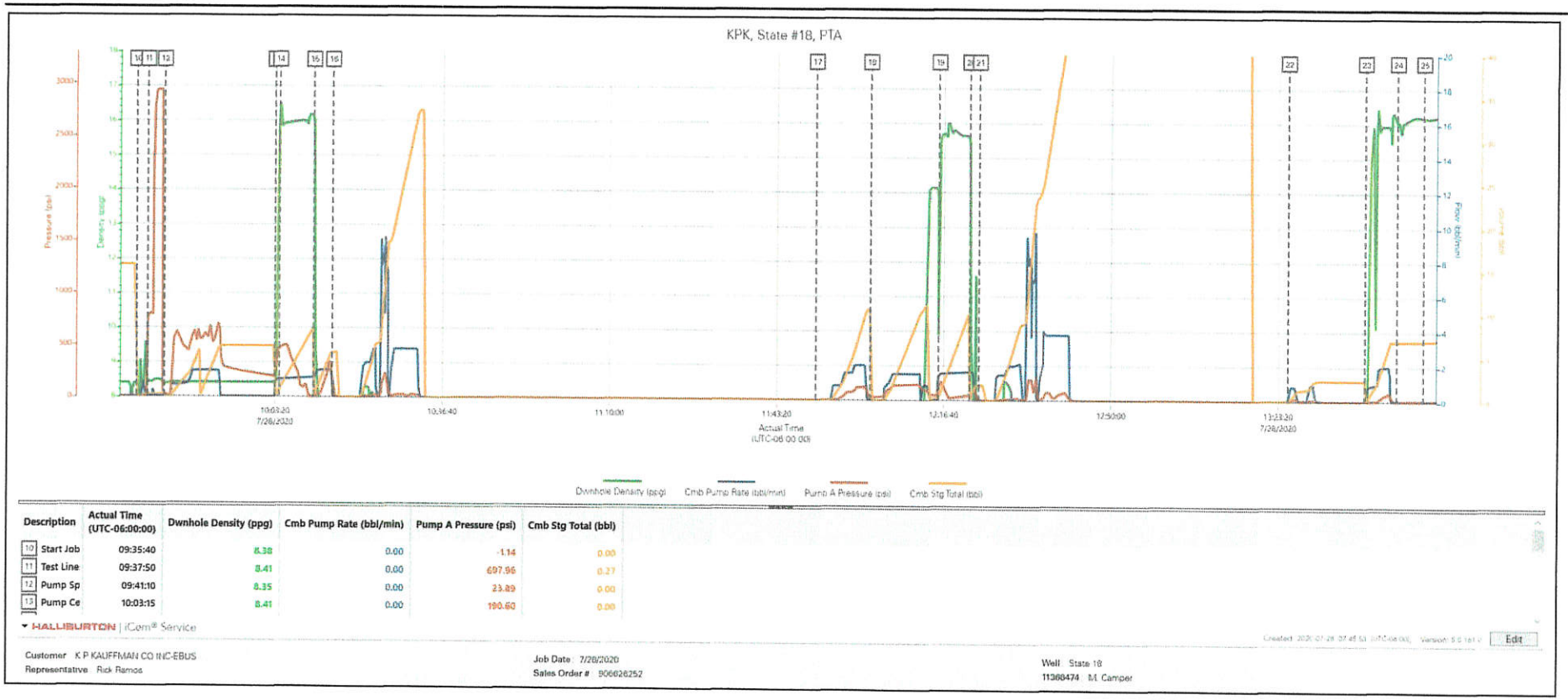
Edit

Customer K P KAUFFMAN CO INC-EBUS
Representative Rick Ramos

Job Date 7/28/2020
Sales Order # 906626252

Well State 18
11368474 M. Camper

3.4 State 18 -Custom Results.png



Description	Actual Time (UTC-06:00:00)	Dwnhole Density (ppg)	Cmb Pump Rate (bbl/min)	Pump A Pressure (psi)	Cmb Stg Total (bbl)
10 Start Job	09:35:40	8.38	0.00	-1.14	0.00
11 Test Line	09:37:50	8.41	0.00	697.96	0.27
12 Pump Sp	09:41:10	8.35	0.00	23.89	0.00
13 Pump Ce	10:03:15	8.41	0.00	190.60	0.00

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Edit

Customer: K P KAUFFMAN CO INC-EBUS
Representative: Rick Ramos

Job Date: 7/28/2020
Sales Order #: 906626252

Well: State 18
11360474 - M. Camper

HALLIBURTON

Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 303209	**Ship To #:** 303209	**Quote #:**	**Sales Order #:** 0906626252
Customer: K P KAUFFMAN CO INC-EBUS		**Customer Rep:** Rick Ramos	
Well Name: State	**Well #:** #18		**API/UWI #:** 05-123-09438
Field: Spindle	**City (SAP):** Frederick	**County/Parish:** WELD	**State:** COLORADO
Legal Description:			
Contractor: UNKNOWN		**Rig/Platform Name/Num:** WORKOVER RIG	
Job BOM: 7526 7526			
Well Type: OIL & GAS WELL			
Sales Person: HALAMERICA\HB41307		**Srvc Supervisor:** Nicholas Roles	

Job

Job depth MD	1800ft	**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		8.625	8.097	24			0	792		792
Tubing		2.375	1.995	4.7			0	1800		1800
Casing		4.5	4	11.6			0	1850		1850

Tools and Accessories

Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make
Retainer #1	2.375			1800		**Top Plug**	2.375		HES
Retainer #2	2.375			792		**Bottom Plug**	2.375		HES
#3 no retainer/ Perfs-	2.375			100		**SSR plug set**	2.375		HES

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	Squeeze	Premium Cement	35	sack	15.8	1.15		2	4.99
4.99 Gal		FRESH WATER							
94 lbm		CMT - PREMIUM - CLASS G REG OR TYPE V, BULK (100003685)							

Cement Left In Pipe	**Amount**	100ft	**Reason**	50'below ret. 50' above

Fluid Data

Stage/Plug #: 2

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	Squeeze	Premium Cement	50	sack	15.8	1.18		2	5.16
94 lbm		CMT - PREMIUM - CLASS G REG OR TYPE V, BULK (100003685)							
5.16 Gal		FRESH WATER							
2 %		CALCIUM CHLORIDE, PELLET, 50 LB (101509387)							

Cement Left In Pipe	Amount	100ft	Reason	50'below ret. 50' above

Fluid Data

Stage/Plug #: 3

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	Squeeze	Premium Cement	40	sack	15.8	1.18		2	5.16
94 lbm		CMT - PREMIUM - CLASS G REG OR TYPE V, BULK (100003685)							
5.16 Gal		FRESH WATER							

Cement Left In Pipe	Amount	100ft	Reason	100' Top out
Mix Water:	pH 7	Mix Water Chloride:	0 ppm	Mix Water Temperature: 65 °F
Cement Temperature:	## °F °C	Plug Displaced by:	8.33 lb/gal	Disp. Temperature: 65 °F
Plug Bumped?	NA	Bump Pressure:	NA	Floats Held? NA
Cement Returns:	## bbl m3	Returns Density:	## lb/gal kg/m3	Returns Temperature: ## °F °C

Comment Plug #1-Est. cement in form-5.62bbls. Based off 8" OH-HOC-132' TOC-1717', Plug #2- Pumped 10.5bbls cement at 15.8#, Est. TOC-635' into surface casing. Plug #3-Pumped 40sks or 8bbls to get cement to surface, Perfs at 100ft. Disconnected well stub, cement settled on top without falling. Co rep did not need additional topout.

HALLIBURTON

Field Ticket

Original

Field Ticket Number:	906626252	Field Ticket Date: Tuesday, July 28, 2020	Planning Order #: NA

Bill To:
K P KAUFFMAN CO INC-EBUS
DONOTMAIL-1675 BRDWAY STE 2800
DENVER CO 80202

Ship To:
State

Job Name:	KPK State #18 PTA
Order Type:	ZOH
Well Name:	State #18
Company Code:	1100
Customer PO No.:	NA
AFE:	
Shipping Point:	Fort Lupton, CO Shipping Point
Sales Office:	ROCKY MOUNTAINS BD
Well Type:	OIL & GAS WELL
Well Category:	Exploration
Rig Name/#:	WORKOVER RIG

Depart yard:		**Actual job start:**	07/28/2020 09:00 AM
Arrive location:		**Actual job end:**	07/28/2020 02:00 PM
		Depart location:	

Material	Description	QTY	UOM	Unit Amount	Gross Amount	Discount	Net Amount
7526	**CMT SQUEEZE PERFORATIONS BOM** *7526*	**1**	**JOB**		**0.00**		**0.00**
1	ZI-MILEAGE FROM NEAREST HES BASE,/UNIT *Number of Units*	32 1	MI	9.79 USD / 1.00 MI	313.28	$ 203.63	109.65
16097	SQUEEZE PUMPING CHARGE,ZI *DEPTH* *FEET/METERS (FT/M)*	1 1800 FT	EA	7,270.00 USD / 1.00 EA	7,270.00	$ 4,725.50	2,544.50
3965	HANDLE&DUMP SVC CHRG, CMT&ADDITIVES,ZI *NUMBER OF EACH* *Unit of Measurement*	118 1 EA	CF	5.49 USD / 1.00 CF	647.82	$ 421.08	226.74
76400	MILEAGE,CMT MTLS DEL/RET MIN *NUMBER OF TONS*	16 5.48	MI	3.35 USD / 1.00 MI	293.73	$ 190.92	102.81
	SubTotal				**8,524.83**	**5541.13**	**2,983.70**
100003685	CEM,CLASS G / PREMIUM, BULK *Premium Cement*	35	SK	44.26 USD / 1.00 SK	1,549.10	$ 1,006.92	542.18
2	MILEAGE FOR CEMENTING CREW *Number of Units*	32 1	MI	5.76 USD / 1.00 MI	184.32	$ 119.81	64.51
100003685	CEM,CLASS G / PREMIUM, BULK *Premium Cement*	50	SK	44.26 USD / 1.00 SK	2,213.00	$ 1,438.45	774.55
101509387	CALCIUM CHLORIDE-PELLET, 50 LB SK *Calcium Chloride, Pellet*	2	SK	180.30 USD / 1.00 SK	360.60	$ 234.39	126.21
100003685	CEM,CLASS G / PREMIUM, BULK *Premium Cement*	40	SK	44.26 USD / 1.00 SK	1,770.40	$ 1,150.76	619.64
			Totals	*USD*	**$ 14,602.25**	**$ 9,491.46**	**$ 5,110.79**

HALLIBURTON

Original

Field Ticket Signature

Field Ticket Number: 906626252	Field Ticket Date: Tuesday, July 28, 2020	Planning Order #: NA

Bill To:

K P KAUFFMAN CO INC-EBUS
DONOTMAIL-1675 BRDWAY STE 2800
DENVER CO 80202

Ship To:

State

Job Name:	KPK State #18 PTA
Order Type:	ZOH
Well Name:	State #18
Company Code:	1100
Customer PO No.:	NA
AFE :	
Shipping Point:	Fort Lupton, CO Shipping Point
Sales Office:	ROCKY MOUNTAINS BD
Well Type:	OIL & GAS WELL
Well Category:	Exploration
Rig Name/#:	WORKOVER RIG

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:	$ 14,602.25
Item Discount Total:	$ 9,491.46
Net Amount Total:	$ 5,110.79 USD

Customer Representative Signature: **Date:**

Rick Ramos
Customer Representative

Nicholas Roles
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:

Customer Stamp (if applicable):