

Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 300466		Ship To #: 0003959506		Quote #: 0022611245		Sales Order #: 0905902350				
Customer: ANADARKO PETROLEUM CORP-EBUS				Customer Rep: Sam Antrim						
Well Name: SARCHET			Well #: 21-6HZ		API/UWI #: 05-123-50077-00					
Field: WATTENBERG		City (SAP): PLATTEVILLE		County/Parish: WELD		State: COLORADO				
Legal Description: SW SW-21-3N-66W-550FSL-339FWL										
Contractor: PRECISION DRLG				Rig/Platform Name/Num: PRECISION 464						
Job BOM: 7523 7523										
Well Type: HORIZONTAL GAS										
Sales Person: HALAMERICA\HX41066				Srvc Supervisor: Michael Loughran						
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type		BHST								
Job depth MD		18479ft		Job Depth TVD		7242				
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		9.625	8.921	36		J-55	0	1911	0	1911
Casing		5.5	4.892	17	LTC	HCP110	0	18479	0	7241
Open Hole Section			7.875				1911	18489	1911	7241
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5					Top Plug	5.5	1	Wea	
Float Shoe	5.5			18479		Bottom Plug	5.5	1	Wea	
WSS	5.5			18470		SSR plug set	5.5		HES	
Insert Float	5.5					Plug Container	5.5	1	HES	
Stage Tool	5.5					Centralizers	5.5		HES	
Fluid Data										
Stage/Plug #: 1										

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Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	FDP-C1337-18	SBM FDP-C1337-18 CEMENT SPACER SYS	60	bbl	10.5	6.17	39.60	6	
	0.75 gal/bbl	MUSOL(R) A, 5 GAL PAIL (100064220)							
	90.94 lbm/bbl	BARITE, BULK (100003681)							
	0.75 gal/bbl	DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)							
	0.25 gal/bbl	D-AIR 3000L, 5 GAL PAIL (101007444)							
	1 lbm/bbl	FE-2 (100001615)							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	FDP-C1337-18 (No Surfactants)	SBM FDP-C1337-18 CEMENT SPACER SYS	50	bbl	10.5	6.19	41.40	6	
	90.63 lbm/bbl	BARITE, BULK (100003681)							
	0.25 gal/bbl	D-AIR 3000L, 5 GAL PAIL (101007444)							
	1 lbm/bbl	FE-2 (100001615)							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	Gasstop B1	GASSTOP (TM) SYSTEM	630	sack	13.2	1.59		8	7.88
	0.90 %	SCR-100 (100003749)							
	5.27 Gal	FRESH WATER							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
4	EconoCem	ECONOCEM (TM) SYSTEM	1100	sack	13.5	1.73		6	8.45
	0.10 %	SA-1015, 50 LB SACK (102077046)							
	8.05 Gal	FRESH WATER							
	0.70 %	HR-5, 50 LB SK (100005050)							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
5	Biocide Water and MMCR	Biocide Water and MMCR	20	bbl	8.34			10	
	0.50 gal/bbl	MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
6	Biocide Water	Biocide Water	408.5	bbl	8.34			10	

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Cement Left In Pipe	Amount	0 ft		Reason	Wet Shoe Joint
Mix Water:	pH 7	Mix Water Chloride:	Less 200 ppm	Mix Water Temperature:	68 °F
Cement Temperature:		Plug Displaced by:	8.33 lb/gal	Disp. Temperature:	
Plug Bumped?	Yes	Bump Pressure:	2500 psi	Floats Held?	Yes
Cement Returns:		Returns Density:		Returns Temperature:	
Comment Good returns throughout job. Plug bumped, 3000 psi casing test 10 min. test good, 3 bbl wet shoe, Floats held, 2.5 bbl back. 15 bbl spacer to surface. Estimated top lead 2044, estimated top tail 7818. True hole calcs					

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comments
Event	1	Call Out	Call Out	8/17/2019	07:45:00	USER	Crew called out for on location time of 1400 hrs. 8/17/2019
Event	2	Crew Leave Yard	Crew Leave Yard	8/17/2019	12:15:00	USER	Crew leaves yard
Event	3	Arrive At Loc	Arrive At Loc	8/17/2019	14:00:00	USER	Arrive at location, Rig running casing, Meet with customer, TP 18479 17# P-110, TD 18489, 7.875 Hole, WSS 18470, TVD 7241, PC 1911' 9.625 J-55 36#, WF 9.5 OBM, Weatherford Top and Bottom plug provided by customer, Water 68 Deg., PH 7, Chlorides and sulfates less than 200 ppm. Rig circs 8 bpm/1200 psi
Event	4	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	8/17/2019	14:30:00	USER	Pre rig up safety meeting
Event	5	Rig-Up Equipment	Rig-Up Equipment	8/17/2019	15:00:00	USER	Rig up all service lines and iron to buffer zone
Event	6	Pre-Job Safety Meeting	Pre-Job Safety Meeting	8/17/2019	17:30:00	USER	Discuss job procedures, Discuss job hazards and hazards of Halliburton Equipment.
Event	7	Start Job	Start Job	8/17/2019	18:15:42	COM6	Begin recording data
Event	8	Test Lines	Test Lines	8/17/2019	18:24:53	COM6	Test to 6500 psi
Event	9	Pump Spacer 1	Pump Spacer 1	8/17/2019	18:25:05	COM6	60 bbl. FDP-C1337-18 spacer 10.5#, 6.17 yield, 39.60 gal/sack with surfactants 45 gal

Dual Spacer B, 45 gal Musol, .5 gal Customer supplied Biocide. D-Air 20 gal

Event	10	Pump Spacer 2	Pump Spacer 2	8/17/2019	18:35:41	COM6	50 bbl. FDP-C1337-18 spacer 10.5#, 6.19 yield, 41.40 gal/sack No surfactants
Event	11	Shutdown	Shutdown	8/17/2019	18:43:31	COM6	Shutdown
Event	12	Drop Bottom Plug	Drop Bottom Plug	8/17/2019	18:46:46	COM6	Verified by Sam
Event	13	Pump Lead Cement	Pump Lead Cement	8/17/2019	18:46:49	COM6	178.4 bbl., 630 sacks GasStop Lead, 13.2 ppg, 1.59 yield, 7.88 gal/sack D-Air 40 gal
Event	14	Pump Tail Cement	Pump Tail Cement	8/17/2019	19:11:31	COM6	338.92 bbl., 1100 sacks EconoCem tail, 13.5#, 1.73 yield, 8.45 gal/sack
Event	15	Shutdown	Shutdown	8/17/2019	20:00:04	COM6	Shutdown to wash pumps and lines
Event	16	Drop Top Plug	Drop Top Plug	8/17/2019	20:08:51	COM6	Verified by Sam
Event	17	Pump Displacement	Pump Displacement	8/17/2019	20:08:56	COM6	428.5 bbl. fresh water disp. First 20 bbl. 10 gal Micro Matrix retarder and customer supplied Biocide. Biocide throughout disp. Good returns throughout job. 15 bbl. spacer to surface. Estimated to Lead 2044', Estimated top of tail 7818' True hole calcs
Event	18	Bump Plug	Bump Plug	8/17/2019	21:00:16	COM6	FCP 1885 psi @ 4 bpm Bump pressure 2500 psi
Event	19	Other	Other	8/17/2019	21:02:08	COM6	3000 psi casing test 10 min.

Event	20	Pressure Up Well	Pressure Up Well	8/17/2019	21:11:18	COM6	Sleeve shifts 4811 psi. 3 bbl. wet shoe 4 bpm @ 2280 psi
Event	21	Check Floats	Check Floats	8/17/2019	21:14:12	USER	Floats hold. 2.5 bbl. back
Event	22	End Job	End Job	8/17/2019	21:15:41	COM6	Stop recording data
Event	23	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	8/17/2019	21:20:00	USER	JSA safe Rig-Down
Event	24	Rig-Down Equipment	Rig-Down Equipment	8/17/2019	21:25:00	USER	Rig down equipment
Event	25	Crew Leave Location	Crew Leave Location	8/17/2019	23:30:00	USER	Thanks for choosing Halliburton Energy Services!

3.0 Attachments

3.1 Job Chart

