

*The Road to Excellence Starts with Safety*

Sold To #: 300466		Ship To #: 3932058		Quote #: 0022554716		Sales Order #: 0905542793				
Customer: ANADARKO PETROLEUM CORP-EBUS				Customer Rep: Albert Bryan						
Well Name: MAB		Well #: 15-1HZ		API/UWI #: 05-123-49251-00						
Field: WATTENBERG		City (SAP): IONE		County/Parish: WELD		State: COLORADO				
Legal Description: SW SE-15-1N-66W-488FSL-2171FEL										
Contractor:				Rig/Platform Name/Num: Akita 522						
Job BOM: 7523 7523										
Well Type: HORIZONTAL GAS										
Sales Person: HALAMERICA\HX41066				Srvc Supervisor: Nicholas Roles						
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type				BHST						
Job depth MD		18082ft		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		9.625	8.921	36		J-55	0	1862	0	1862
Casing		5.5	4.892	17	LTC	HCP110	0	18082	0	7477
Open Hole Section			7.875				1894	18092	1894	7477
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5			18082		Top Plug	5.5	1	WTF	
Float Shoe	5.5					Bottom Plug	5.5	1	WTF	
Float Collar	5.5					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										
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	FDP-C1337-18	SBM FDP-C1337-18 CEMENT SPACER SYS	80	bbbl	10.5	6.14		6	
0.75 gal/bbl		<b>MUSOL(R) A, 5 GAL PAIL (100064220)</b>							
0.25 gal/bbl		<b>D-AIR 3000L, 5 GAL PAIL (101007444)</b>							
91.40 lbm/bbl		<b>BARITE, BULK (100003681)</b>							
0.75 gal/bbl		<b>DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)</b>							
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	Gasstop B1	GASSTOP (TM) SYSTEM	640	sack	13.2	1.56		8	7.71
0.90 %		<b>SCR-100 (100003749)</b>							
5.11 Gal		<b>FRESH WATER</b>							
0.10 Gal		<b>D-AIR 3000L, TOTETANK (101396181)</b>							
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	EconoCem	ECONOCER (TM) SYSTEM	1090	sack	13.5	1.68		8	7.99
0.10 %		<b>SA-1015, 50 LB SACK (102077046)</b>							
7.99 Gal		<b>FRESH WATER</b>							
0.29 %		<b>HR-5, 50 LB SK (100005050)</b>							
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	Biocide Water and MMCR	Biocide Water and MMCR	20	bbbl	8.34			8	
0.50 gal/bbl		<b>MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)</b>							
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
5	Biocide Water	Biocide Water	399	bbbl	8.34			8	
Cement Left In Pipe		Amount	0 ft		Reason			Wet Shoe	

Mix Water:	pH 6	Mix Water Chloride:	0 ppm	Mix Water Temperature:	55 °F °C
Cement Temperature:	## °F °C	Plug Displaced by:	8.33 lb/gal	Disp. Temperature:	70 °F °C
Plug Bumped?	Yes	Bump Pressure:	2900 psi MPa	Floats Held?	Yes
Cement Returns:	0 bbl m3	Returns Density:	## lb/gal kg/m3	Returns Temperature:	## °F °C
<b>Comment</b> Got 0bbls spacer back to pits. Estimated TOT-7532', TOL-1799', TOS-129'					

## 2.0 Real-Time Job Summary

## 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comments
Event	1	Check Floats	Call Out	3/12/2019	19:00:00	USER	Called out by Service Coordinator for O/L at 0100
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	3/12/2019	21:45:00	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	3/12/2019	22:00:00	USER	Journey Management prior to departure
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	3/12/2019	22:15:00	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	3/13/2019	00:15:00	USER	Discussed rigging up hazards and procedure according to HMS.
Event	6	Other	Other	3/13/2019	00:30:00	USER	Water test- PH-6, Chlor-0, Temp-65. Cement temp-70.
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	3/13/2019	04:00:00	USER	Held safety meeting with all job associated personnel to discuss job procedure, hazards and stop work authority.
Event	8	Start Job	Start Job	3/13/2019	04:27:35	COM4	TD-18092', TP-18082' 5.5" 17#, WS-18069', TVD-7477', OH-7.875", SURF-1862' 9.625" 36#, MUD-9.5#
Event	9	Test Lines	Test Lines	3/13/2019	04:30:36	COM4	Pumped 5bbls fresh water to fill lines, shutdown, closed manifold, performed 500psi k/o function test, continued with 5th gear stall at 2100psi, proceeded to bring pressure to 6000psi. Pressure stabilized and held with no leaks.
Event	10	Pump Spacer 1	Pump Spacer 1	3/13/2019	04:45:16	COM4	Pumped 80bbls of 10.5# 6.14Y 39.4g/s Tuned Spacer III with 60g Musol A, 60g Dual Spacer B, 20g D-Air at 5bpm 328psi.

Event	11	Drop Bottom Plug	Drop Bottom Plug	3/13/2019	05:00:05	COM4	Dropped by HES supervisor, witnessed by company man.
Event	12	Pump Lead Cement	Pump Lead Cement	3/13/2019	05:00:10	COM4	Pumped 640sks or 178bbbls of 13.2# 1.56y 7.61g/s Gasstop with 1600g of FDP Latex and 64g D-air at 8bpm 485psi.
Event	13	Other	Other	3/13/2019	05:26:19	COM4	Had trouble keeping pressure on silo, 10237501, had to shutdown briefly to swap air lines and get pressure to silo.
Event	14	Resume	Resume	3/13/2019	05:33:33	USER	Began pumping lead cement again after weight came back up.
Event	15	Check Weight	Check Weight	3/13/2019	05:39:58	COM4	Weight verified with pressurized mud scales.
Event	16	Pump Tail Cement	Pump Tail Cement	3/13/2019	05:51:34	COM4	Pumped 1090sks or 326bbbls of 13.5# 1.68Y 7.99G/S Econocem at 8bpm 505psi.
Event	17	Check Weight	Check Weight	3/13/2019	05:55:41	COM4	Weight verified with pressurized mud scales.
Event	18	Check Weight	Check Weight	3/13/2019	06:33:28	COM4	Weight verified with pressurized mud scales.
Event	19	Shutdown	Shutdown	3/13/2019	06:44:11	COM4	Shutdown, rig blew down iron with air, followed with 5bbbls fresh water through pumps and lines.
Event	20	Drop Top Plug	Drop Top Plug	3/13/2019	06:53:25	COM4	Dropped by HES supervisor, witnessed by company man.
Event	21	Pump Displacement	Pump Displacement	3/13/2019	06:53:30	COM4	Pumped 419bbbls fresh water with 10g MMCR in first 20bbbls, followed with 4.2g biocide throughout at 8bpm.
Event	22	Bump Plug	Bump Plug	3/13/2019	07:51:02	COM4	Slowed down at 395bbbls away to 3bpm, Final Circulating Pressure-2600psi, Bump Pressure-2900psi. Once pressure lined out brought pressure up to 3000psi and held for 5min test.

Event	23	Pressure Up Well	Pressure Up Well	3/13/2019	07:55:54	COM4	Pressured up with fresh water to 5500psi to shear pins and pumped 3bbls at 3bpm 2700psi, for wet shoe.
Event	24	Check Floats	Check Floats	3/13/2019	07:59:47	USER	Released pressure and got 2.5bbls back to truck.
Event	25	End Job	End Job	3/13/2019	08:01:08	COM4	Got 0bbls spacer back to pits. Estimated TOT-7532', TOL-1799', TOS-129'
Event	26	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	3/13/2019	08:05:00	USER	Discussed rigging down hazards and procedure according to HMS with all HES personnel
Event	27	Safety Meeting - Departing Location	Safety Meeting - Departing Location	3/13/2019	09:45:00	USER	Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive.
Event	28	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	3/13/2019	10:00:00	USER	Pre journey management prior to departure.

## 3.0 Attachments

### 3.1 Job Chart

