

*The Road to Excellence Starts with Safety*

<b>Sold To #:</b> 300466		<b>Ship To #:</b> 3816046		<b>Quote #:</b> 0022390982		<b>Sales Order #:</b> 0904535054				
<b>Customer:</b> ANADARKO PETROLEUM CORP-EBUS				<b>Customer Rep:</b> J MCKINLEY						
<b>Well Name:</b> PUTTER			<b>Well #:</b> 27-4HZ			<b>API/UWI #:</b> 05-123-45135-00				
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> LONGMONT		<b>County/Parish:</b> WELD		<b>State:</b> COLORADO				
<b>Legal Description:</b> NW NW-27-3N-68W-358FNL-1166FWL										
<b>Contractor:</b> Anadarko				<b>Rig/Platform Name/Num:</b> Precision 464						
<b>Job BOM:</b> 7523 7523										
<b>Well Type:</b> HORIZONTAL GAS										
<b>Sales Person:</b> HALAMERICA\HX41066				<b>Srv Supervisor:</b> Bryce Muir						
<b>Job</b>										
<b>Formation Name</b>										
<b>Formation Depth (MD)</b>		<b>Top</b>		<b>Bottom</b>						
<b>Form Type</b>				<b>BHST</b>						
<b>Job depth MD</b>		14257ft		<b>Job Depth TVD</b>		7108 FT				
<b>Water Depth</b>				<b>Wk Ht Above Floor</b>		4 FT				
<b>Perforation Depth (MD)</b>		<b>From</b>		<b>To</b>						
<b>Well Data</b>										
<b>Description</b>	<b>New / Used</b>	<b>Size in</b>	<b>ID in</b>	<b>Weight lbm/ft</b>	<b>Thread</b>	<b>Grade</b>	<b>Top MD ft</b>	<b>Bottom MD ft</b>	<b>Top TVD ft</b>	<b>Bottom TVD ft</b>
Casing		9.625	8.921	36		J-55	0	1882	0	0
Casing		5.5	4.892	17	LTC	HCP110	0	14257	0	0
Open Hole Section			8.5				1882	14268	0	7108
<b>Tools and Accessories</b>										
<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>	<b>Depth ft</b>		<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>	
Guide Shoe	5.5					Top Plug	5.5	1	WF	
Float Shoe	5.5	1	WF	14257		Bottom Plug	5.5	1	WF	
Float Collar	5.5	1	WF	14245		SSR plug set	5.5			
Insert Float	5.5					Plug Container	5.5	1	HES	
Stage Tool	5.5					Centralizers	5.5	210	WF	
<b>Fluid Data</b>										
<b>Stage/Plug #: 1</b>										
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>	
1	Tuned Spacer III	Tuned Spacer III	60	bbl	10.5	6.25				
37.58 gal/bbl		<b>FRESH WATER</b>								
0.70 gal/bbl		<b>DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)</b>								
0.25 gal/bbl		<b>D-AIR 3000L, 5 GAL PAIL (101007444)</b>								

0.70 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)							
88.91 lbm/bbl		BARITE, BULK (100003681)							
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	ElastiCem	ELASTICEM (TM) SYSTEM	700	sack	13.2	1.57		6	7.53
0.45 %		SCR-100 (100003749)							
7.53 Gal		FRESH WATER							
0.10 %		SUPER CBL, 50 LB PAIL (100003668)							
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	ECONOCEM (TM) SYSTEM	1180	sack	13.5	1.68		6	7.98
8 Gal		FRESH WATER							
0.40 %		HR-5, 50 LB SK (100005050)							
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	bbl	8.34				
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 ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
5	Biocide Water	Biocide Water	311	bbl	8.34				
Cement Left In Pipe		Amount	NONE PUMPED WET SHOE			Reason		Shoe Joint	
Comment: WE ARRIVED ON LOCATION AT 0400 HOURS ON JANUARY 1, 2018. THE RIG WAS RUNNING CASING. WE PULLED OFF TO THE SIDE AND WAITED FOR CONTAINMENT TO ARRIVE BEFORE RIGGING UP. AFTER CONTAINMENT WAS IN PLACE WE SPOTTED PUMPING EQUIPMENT AND RIGGED UP OUR IRON. RIG WAS ON BOTTOM WITH CASING AT 0645 AND BEGAN TO CIRCULATE THE WELL THROUGH OUR PLUG CONTAINER AND MANIFOLD. AFTER A SAFETY MEETING WITH THE RIG CREW AND COMPANY REP WE STARTED OUR CEMENT JOB. WE PUMPED TUNED SPACER, LEAD CEMENT, AND TAIL CEMENT. WE PUMPED THE QUANTITIES STATED IN THE TABLE ABOVE. WE THEN DISPLACED THE TOP PLUG. WE PUMPED 331 BBLS OF TOTAL DISPLACEMENT. WE HELD A 15 MINUTE CASING TEST AT 3000 PSI. AFTER THE TEST WE CHECKED FLOATS AND THEY HELD. WE GOT 2 ½ BBLS BACK TO THE RCM. HELD A BRIEF SAFETY MEETING AND RIGGED DOWN ALL OF OUR EQUIPMENT.									

## 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	12/31/2017	23:00:00	USER	CREW CALLED OUT TO PERFORM PRODUCTION JOB.
Event	2	Other	Other	1/1/2018	00:00:00	USER	LOAD ALL MATERIALS REQUIRED TO COMPLETE JOB. DONWLOAD ALL PAPERWORK AND VERIFY ALL EQUIPMENT NEEDED TO COMPLETE JOB.
Event	3	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	1/1/2018	02:45:00	USER	DISCUSS HAZARDS ASSOCIATED WITH DRIVING TRUCKS TO LOCATION. DISCUSS ROUTE OF TRAVEL, CONVOY ORDER, AND PLACES TO STOP IF NEEDED.
Event	4	Depart from Service Center or Other Site	Depart from Service Center or Other Site	1/1/2018	03:00:00	USER	
Event	5	Arrive at Location from Service Center	Arrive at Location from Service Center	1/1/2018	04:00:00	USER	
Event	6	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	1/1/2018	04:10:00	USER	ASSESS LOCATION TO IDENTIFY POTENTIAL HAZARDS. DISCUSS THE BEST WAY TO SPOT PUMPING EQUIPMENT.
Event	7	Other	Other	1/1/2018	04:20:00	USER	WAIT FOR CONTAINMENT TO ARRIVE. RIG RUNNING CASING.
Event	8	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	1/1/2018	05:45:00	USER	DISCUSS HAZARDS ASSOCIATED WITH RIGGING UP AND PACKING IRON ON LOCATION.
Event	9	Rig-Up Equipment	Rig-Up Equipment	1/1/2018	06:00:00	USER	
Event	10	Rig-Up Equipment	Rig-Up Equipment	1/1/2018	06:45:00	USER	RIG ON BOTTOM WITH CASING. RIG UP PLUG CONTAINER AND MANIFOLD SO THE RIG COULD CIRCULATE THE WELL.
Event	11	Other	Other	1/1/2018	07:00:00	USER	RIG CIRCULATING WELL. RIG CIRCULATED WELL AT 7 BPM WITH A CIRCULATING PRESSURE OF 480 PSI.

Event	12	Pre-Job Safety Meeting	Pre-Job Safety Meeting	1/1/2018	08:15:00	USER	DISCUSS HES SAFETY AND JOB PROCEDURES WITH COMPANY MAN AND RIG CREW. DISCUSS CLOSEST HOSPITALS, MUSTER AREAS, AND FIRST AID LOCATIONS. DISCUSSED JOB ORDER OF OPERATIONS AND QUANTITIES OF EACH FLUID BEING PUMPED DOWNHOLE.
Event	13	Rig-Up Equipment	Rig-Up Equipment	1/1/2018	08:45:00	USER	RIG UP PUMPING LINES TO STAND PIPE AND PLUG CONTAINER MANIFOLD.
Event	14	Start Job	Start Job	1/1/2018	08:45:58	COM6	
Event	15	Other	Other	1/1/2018	08:46:00	USER	PUMP 4 BBLS FRESH WATER TO FILL PUMPS AND LINES. PUMPED AT 2 BPM.
Event	16	Test Lines	Test Lines	1/1/2018	08:49:49	COM6	CONDUCTED A LOW PRESSURE TEST TO 500 PSI TO TEST RCM PRESSURE KICKOUTS. WE THEN CONDUCTED A HIGH PRESSURE TEST TO 4800 PSI TO TEST PUMPS AND LINES. MONITOR PRESSUR LOSS.
Event	17	Pump Spacer 1	Pump Spacer 1	1/1/2018	08:55:33	COM6	PUMPED 60 BBLS OF TUNED SPACER WITH DUAL SPACER B AND MUSOL A ADDED ON THE FLY AS WE PUMPED. PUMPED SPACER AT 3 BPM @ 190 PSI. GOOD WELL CIRCULATION.
Event	18	Check Weight	Check weight	1/1/2018	08:58:00	COM6	TUNED SPACER VERIFIED BY PRESSURIZED MUD BALANCE.
Event	19	Drop Bottom Plug	Drop Bottom Plug	1/1/2018	09:07:34	COM6	DROPPED 5.5" BOTTOM PLUG. BOTTOM PLUG WAS DROPPED ON THE FLY WHILE PUMPING LAST FEW BBLS OF TUNED SPACER. PLUG DROPPED BY BRYCE MUIR AND WITNESSED BY COMPANY MAN.
Event	20	Pump Lead Cement	Pump Lead Cement	1/1/2018	09:15:52	COM6	PUMPED 196 BBLS OF LEAD CEMENT. 700 SACKS @ 13.2 #/GAL 1.57 CUFT/SK 7.53 GAL/SK. WE PUMPED LEAD CEMENT AT 8 BPM @ 330 PSI CIRCULATING PRESSURE.
Event	21	Check Weight	Check weight	1/1/2018	09:35:33	COM6	LEAD CEMENT VERIFIED BY PRESSURIZED MUD BALANCE.

Event	22	Pump Tail Cement	Pump Tail Cement	1/1/2018	09:43:10	COM6	PUMPED 353 BBLS OF TAIL CEMENT. 1180 SACKS @ 13.5 #/GAL 1.68 CUFT/SK 7.98 GAL/SK. WE PUMPED TAIL CEMENT AT 8 BPM @ 420 PSI. GOOD WELL CIRCULATION.
Event	23	Check Weight	Check weight	1/1/2018	09:45:44	COM6	TAIL CEMENT VERIFIED BY PRESSURIZED MUD BALANCE.
Event	24	Shutdown	Shutdown	1/1/2018	10:29:35	COM6	WASH PUMPS AND LINES.
Event	25	Drop Top Plug	Drop Top Plug	1/1/2018	10:35:16	COM6	DROPPED 5.5" TOP PLUG. PLUG DROPPED BY BRYCE MUIR AND WITNESSED BY THE COMPANY MAN.
Event	26	Pump Displacement	Pump Displacement	1/1/2018	10:38:58	COM6	PUMPED 331 BBLS OF FRESH WATER DISPLACEMENT. WE ADDED MMCR TO THE FIRST 20 BBLS OF DISPLACEMENT PUMPED. THE REMAINING DISPLACEMENT WE ADDED BIO-CIDE 3 TO THE DISPLACEMENT. WE PUMPED DISPLACEMENT AT 9 BPM WITH A CIRCULATING PRESSURE OF 245 PSI.
Event	27	Displ Reached Cmnt	Displ Reached Cmnt	1/1/2018	10:45:00	COM6	TOP PLUG REACHED CEMENT AT 45 BBLS OF DISPLACEMENT PUMPED. CIRCULATING PRESSURE INCREASE TO 1045 PSI. WE STARED TO SEE SPACER TO SURFACE AT 290 BBLS OF DISPLACEMENT PUMPED. THE RIG DIVERTED TO A CATCH TANK. WE HAD TO SLOW OUR RATE TO 2 BPM DUE TO THE WATER HAULERS LINES FREEZING AND WAS UNABLE TO VACUUM THE CATCH TANK. SLOWED TO AVOID OVER FILLING TANK. WE GOT GOOD SPACER TO SURFACE AT 310 BBLS PUMPED FOR 21 BBLS OF TUNED SPACER TO SURFACE. CALCULATED TOP OF TAIL CEMENT IS 5459 FEET.
Event	28	Bump Plug	Bump Plug	1/1/2018	11:30:32	COM6	LANDED TOP PLUG AT CALCULATED DISPLACEMENT. WE LANDED THE PLUG AT 2465 PSI AND PRESSURED UP TO 2854 PSI.
Event	29	Pressure Up Well	Pressure Up Well	1/1/2018	11:31:25	COM6	WE CONDUCTED A CASING PRESSURE TEST TO 3000 PSI FOR 15 MINUTES.
Event	30	Other	Other	1/1/2018	11:46:16	COM6	KICKED IN OUR PUMPS TO RUPTURE DISC

TO PUMP A 3 BBL WET SHOE. DISC  
RUPTURED AT 4433 PSI.

Event	31	Shutdown	Shutdown	1/1/2018	11:49:10	COM6	
Event	32	Check Floats	Check Floats	1/1/2018	11:49:35	USER	FLOATS HELD. WE GOT 2 1/2 BBLS BACK TO THE RCM.
Event	33	End Job	End Job	1/1/2018	11:50:48	COM6	
Event	34	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	1/1/2018	12:15:00	USER	DISCUSS HAZARD ASSOCIATD WITH RIGGING DOWN AND PACKING IRON ON LOCATION.
Event	35	Rig-Down Equipment	Rig-Down Equipment	1/1/2018	12:30:00	USER	
Event	36	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	1/1/2018	13:45:00	USER	DISCUSSED HAZARDS ASSOCIATED WITH DRIVING TRUCKS BACK TO THE SERVICE CENTER. DISCUSSED ROUTE OF TRAVEL, CONVOY ORDER, AND WHERE TO STOP IF TOO TIRED TO DRIVE.
Event	37	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	1/1/2018	14:00:00	USER	JOB WAS COMPLETED SAFELY BY BRYCE MUIR AND CREW. THANK YOU FOR USING HALLIBURTON ENERGY SERVICES. STAY SAFE OUT HERE.

## 3.0 Attachments

### 3.1 Job Chart

Custom Results

