

DRILLING AND GEOLOGICAL INFORMATION																																	
PROSPECT/FIELD				16N/47W				COUNTY		Cheyenne		GROUND ELEVATION		GR 4,185'		Source of drilling program: Danny Showers																	
OPERATOR				ANADARKO				STATE		Colorado		RIG HT.		15.0' KB		KB ± 4,200'		Source of geological tops: Mark Lehrer															
LEASE & WELL NO.				Switchman 1647-17-11-H				FORM @ TD (HORIZONTAL HOLE)				Spergen																					
FORM @ TD (PILOT HOLE)				NA																													
Initial Target Line				5164 @ 0' VS w/ 90																													
WELLBORE				Based on 4,200' KB				LOGGING PROGRAM:																									
				GEOLOGICAL TOPS:				Interval		LWD & Mud Logging Requested				Open Hole Logging Program																			
				Formation		MD		TVD		Thickness		Comments		Surf Csg -KOP		None																	
				Niobrara		185 '		185 '		556		Lost Circulation																					
				Ft Hays Limestone		741 '		741 '		111		Marker																					
				Dakota Sandstone		1,222 '		1,222 '		152		Aquifer (Water)		KOP - LP		Gamma Ray																	
				Cheyenne Sandstone		1,533 '		1,533 '		255		Aquifer (Water)																					
9 5/8" CASING DEPTH				Blaine Anhydrite		2,302 '		2,302 '		149		Marker		HZ Lateral		GR/Azimuthal resistivity; Mud Logging				Pipe conveyed: Triple combo, Image													
MD: 902'				Cedar Hills (Lyons) Sandstone		2,451 '		2,451 '		100		Potentially Unstable																					
TVD: 902'				Stone Corral Anhydrite		2,603 '		2,603 '		40		Marker		Pilot hole		NA				NA													
				Neva Limestone		3,275 '		3,275 '		451		Marker																					
				Shawnee		3,726 '		3,726 '		213		Possible Pay (Oil/Gas)		Special Request																			
				Lansing		3,939 '		3,939 '		410		Marker																					
				Marmaton		4,349 '		4,349 '		158		Possible Pay (Oil/Gas)																					
				Cherokee		4,507 '		4,507 '		184		Possible Pay (Oil/Gas)																					
7" 2nd stage CEMENT TOP				Atoka		4,700 '		4,691 '		178		Marker																					
MD: 902'				Morrow		4,912 '		4,869 '		231		Possible Pay (Oil/Gas)																					
TVD: 902'				Keyes		5,361 '		5,100 '		44		Possible Pay (Oil/Gas)																					
				Mississippian		5,501 '		5,144 '		14		Possible Pay (Oil/Gas)																					
				Spergen		5,579 '		5,158 '		100		HZ Target Zone (Oil/Gas)																					
DV TOOL Placement										0																							
MD: 2,352'				Target Center Line				5164 @ 0' VS w/ 90																									
TVD: 2,352'				Target Window +/-				10 Foot Above or below TCL																									
				Proposed TD (Horizontal)		9,161 '		5,161 '		NA																							
				MUD PROGRAM:																													
				Mud Type		Interval		Corresponding Depths				Weight		Vis		WL		Remarks															
7" 1st stage CEMENT TOP				WBM		Surface Hole		0 - 902				8.4 - 8.6		26		NC		Mud additives are detailed in the POD drilling plan															
MD: 4,396'																																	
TVD: 4,396'				WBM		To KOP		902 - 4396				8.4 - 9.0		26-40		<10		Mud additives are detailed in the POD drilling plan															
				WBM		Curve		4396 - 5672				8.4 - 9.0		35 - 50		<10		Mud additives are detailed in the POD drilling plan															
KOP				WBM		Lateral		5672 - 9161				8.4 - 9.0		35 - 50		<10		Mud additives are detailed in the POD drilling plan															
TVD/MD: 4,396'				CASING & CEMENT PROGRAM:																													
						Size		Wt (ppf)		Grade		Thread		Hole		Top		Bottom		Cement:		Ft		Sx		Density (ppg)		Yield (cf/sk)		GPS		Type	
				Surface Casing:		9.625"		36.0		J-55		LTC		12.25"		0'		902'		Lead		902 '		±260 sx		12.5		2.21		12.66		Type III	
				*Note Conductor to be pre-set		16"		42.09		Conductor to be cemented with 5 bags ready mix		0'		60'																			
LANDING AND				Lead Cmt Additives		3% Calcium Chloride, 2% Silicate, 10% Gel, 1/2 lb/sk Flocele																											
7" INTERMEDIATE DEPTH				MD: 5,672'		Tail Cmt Additives		2% Calcium Chloride, 0.25 lbs/sk Flocele																									
TVD: 5,164'																																	
				Intermediate Casing:		7.000"		26.0		HCP-110		DQX		8.75																			