



Proposed PA WBD - Horizontal

Well Name: COUGAR B02-69-1HN

Original Hole [Land]		Well Header								
MD (ftKB)	Vertical schematic (proposed)	Surface UWI 0512336405		Business Unit Rockies		Gov Auth Dist		Prod Tree Loc Land		
		Orig. KB to Gnd (ft) 24.00	Original Spud Date 1/25/2014	Abandon Date		Well Sub-Status PR		High...		
		Comment								
		Geologic Horizons								
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		NIOBRARA A				6,674.0				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		NIOBRARA B				7,028.0				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		FOX HILLS BASE EST				328.0				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		SUSSEX-BASE PROD				4,441.1				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		SUSSEX-TOP PROD				4,057.7				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		UPPER PIERRE AQUIFER-BASE PROD				1,422.9				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		INTRA SHARON SPGS MK				6,590.0				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		SHANNON-BASE PROD				5,024.5				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		PARKMAN-TOP PROD				3,511.1				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		NIO B MARL				7,028.3				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		UPPER PIERRE AQUIFER-TOP PROD				393.3				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		NIO B CHALK				6,846.4				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		NIO A CHALK				6,643.9				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		NIOBRARA-TOP PROD				6,643.2				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		FOXHILLS-BASE PROD				257.4				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		TEPEE BUTTES				5,871.3				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		SHANNON-TOP PROD				4,824.2				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		A SAND-TOP PROD				2,331.1				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		PARKMAN-BASE PROD				3,917.3				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		NIO A MARL				6,674.4				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		A SAND-BASE PROD				2,854.6				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		PIERRE				2,367.0				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		PARKMAN				3,510.5				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		SUSSEX				4,238.0				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		SHANNON				4,779.0				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		TEEPEE BUTTES				5,871.0				
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		SHARON SPGS MKR								
		Formation Name				Final Top MD (ftKB)		Final Btm MD (ftKB)		
		NIOBRARA				6,644.0				
		Surface Location (Congressional)								
		Qtr 3 NW	Qtr 4 NW	Section 2	Twnshp 5	Twnsh... N	Range 64	Rng E/... W	Latitude (°) 40.43408492 5	Longitude (°) -104.524288047
		Wellbore Sections								
		Section Des		Hole Size (in)		Prop/Actual		Top Depth (ftKB)		Btm Depth (ftKB)
		CONDUCTOR		26		Actual		24.0		124.0
		SURFACE		13 1/2		Actual		124.0		2,006.0
		INTERMEDIATE		8 3/4		Actual		2,006.0		6,991.0
		PRODUCTION		6 1/4		Actual		6,991.0		10,282.0



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Original Hole [Land]		Casing Strings						
MD (ftKB)	Vertical schematic (proposed)	Csg Des	Run Date	OD (in)	Wt/Len (lb/ft)	Grade	Top Depth (MD) (ftKB)	Set Depth (MD) (ftKB)
-245.1		Conductor	9/30/2013	16	42.05	A-52A	24	124
24.0		Surface	1/26/2014	9 5/8	36.00	J-55	24	2000.5
74.0		Intermediate Casing 1	1/29/2014	7	26.00	P-110 IC	24	6984
124.0		Production Casing	2/1/2014	4 1/2	11.60	P-110 IC	6866.9	10272
451.9		Cement						
779.9	Conductor, Actual, 124ftKB; 24-124; 100.00	Des	Start Date	Top (ftKB)	Btm (ftKB)			
1,390.3		Conductor Cement	9/30/2013	24.0	124.0			
2,000.7	Surface, Actual, 2000.5ftKB; 24-2000.5; 1,976.54	Surface Casing Cement	1/26/2014	24.0	2,000.5			
2,003.3		Intermediate Casing Cement	1/29/2014	780.0	6,984.0			
2,005.9		Zones						
2,103.5		NIOBRARA, Original Hole						
2,201.1		Zone Name					Top Depth (ftKB)	Bottom Depth (ftKB)
2,251.0		NIOBRARA						
2,300.9		Zone Statuses						
2,351.9	6.256 in, Cast Iron Bridge Plug w/ 20 SX Cement, 11/19/2024 00:00; 2301-2403; 6.26; 2024-11-19	Zone Name	Status Date	Status	Fluid Type	Job	Prod Method	
2,402.9		NIOBRARA	4/30/2014	PR		DRILLING/COMPLETION - ORIGINAL, 1/24/2014...		
4,442.4		Stim/Frac Summary						
6,482.0	6.256 in, Cast Iron Bridge Plug w/ 20 SX Cement, 11/19/2024 00:00; 6482-6584; 6.26; 2024-11-19	Min Top Depth (ftKB)			Max Btm Depth (ftKB)			
6,533.0		7,108.6			10,189.7			
6,584.0		Perforations						
6,784.0		Date	Top Depth (ftKB)			Bottom Depth (ftKB)		
6,983.9	Intermediate Casing 1, Actual, 6984ftKB; 24-6984; 6,960.04	Other In Hole						
6,987.5		Run Date	Des			OD (in)	Top (ftKB)	Btm (ftKB)
6,991.1								
8,636.6		Logs						
10,282.2	Production Casing, Actual, 10272ftKB; 6866.9-10272; 3,405.08	Date	Type			Depth Top (MD) (ftKB)	Btm (ftKB)	
10,539.2		1/27/2014	MUD LOG - VERT			2,000	10,282.0	
		1/28/2014	MWD GAMMA - TVD			5,950	6,652.0	
		1/30/2014	LATERAL MUD LOG			6,991	10,282.0	
		1/31/2014	MUD LOG - HZ			5,950	10,282.0	
		2/1/2014	MWD GAMMA - MD			5,950	10,282.0	
		2/24/2014	CBL/CCL/GR			24	6,746.0	
		Wellbore Plug Back Total Depths						
		Date	Type	Com				PBTD (ftKB)
		2/1/2014	FLOAT COLLAR	FLOAT COLLAR				10,270