

**Well Name:** Doe Canyon #22  
**Well Configuration Type:** Directional  
**Account Category/Property ID:**  
**Surface Location:** 962' FSL & 1567' FWL, SEC 8, T 40 N, R 17 W, NMPM  
**County:** Dolores **State:** Colorado **Lat/Long Datum:** NAD 83  
**Latitude (°):** 37.737199 **Longitude (°):** -108.751609

**Field Name:** DOE CANYON  
**API/UWI:**  
**Objective:** Leadville  
**Bottom Hole Location:** 1379' FSL & 1118' FWL, SEC 8, T 40 N, R 17 W, NMPM  
**Estimated KB Elevation (ft):** 7,576.00 **Ground Elevation (ft):** 7,560.00

**A FOCUSED EFFORT WILL BE EXPECTED BY ALL PARTIES TO ELIMINATE ANY/ALL ACCIDENTS DURING THE EXECUTION OF THIS DRILLING PROJECT. H2S IS ANTICIPATED WHILE DRILLING THE PARADOX SALTS**

Directional - Proposed Original Hole, 7/23/2018 5:48:17 PM			DRILLING PROCEDURE: (add KB to measurements below)
Formations	TVD (ftKB)	MD (ftKB)	Directional schematic (actual)
Dakota Morrison	500	500	
Entrada	1,000	1,000	
Chinle	1,500	1,500	
Cutler	2,000	2,000	
	2,500	2,500	
	2,999	3,000	
	3,478	3,500	
	3,951	4,000	
Honaker Trail (Upper Hermosa)	4,424	4,500	
	4,913	5,000	
Paradox	5,412	5,500	
Desert Creek	5,912	6,000	
Paradox Salt	6,412	6,500	
	6,912	7,000	
	7,412	7,500	
	7,912	8,000	
Base of Paradox Salt	8,412	8,500	
Lower Hermosa	8,912	9,000	
Leadville (Base of Karst)	9,412	9,500	
Not to Scale			<p><b>Objective</b>            16" conductor pipe will be set at ~80' prior to moving in the drilling rig.            A 12-1/4" hole drilled from surface to 2685' TVD, ~100' below the top of the Cutler, set 9-5/8" casing run to 2685' with cement to surface.            An 8-3/4" hole drilled out from surface casing point to 7" casing point at 8725' TVD. Run 7" carbon steel casing set with last 200' comprised of 13-Chrome.            A 6" production hole will be drilled out from the 7" casing point to ~500' below the Leadville Top. The production hole will be logged from TD to ~500' inside 7" casing shoe. A 4-1/2" 13-Chrome liner will then be run and cemented in place.</p> <p><b>CASING/CEMENTING DETAILS:</b></p> <p><b>Comment</b>            9-5/8" 36# J-55 LTC =&gt; 0'-2685' TVD/ 2685' MD            Cement: Conventional =&gt; Lead 900sx Light + Tail 300sx Class G + Displacement ~200bbls Fresh Water</p> <p><b>Comment</b>            7" 29# L-80 LTC =&gt; 0'-5774' TVD/5868' MD            Cement: Conventional =&gt; Lead 1800sx HalCem + Tail 300sx HalCem + Cap 100sx Premium + Displacement ~300bbls Fresh Water</p> <p><b>Comment</b>            7" 32# RytWrap L-80 LTC =&gt; 5774'-8508' TVD/5868'-8602' MD</p> <p><b>Comment</b>            7" 29# L-80 LTC =&gt; 8508'- 8725' TVD/8602'-8819' MD CR13 BEAR</p> <p><b>Comment</b>            4 1-2" 12.6# CR13 VamTop =&gt; 8650'-9146' TVD/8744'-9240' MD            Cement: Conventional =&gt; Lead 100sx HalCem + Displacement ~60bbls Fresh Water</p> <p><b>DRILLING FLUIDS:</b></p> <p><b>Description</b> 12-1/4" Surface (9-5/8" Casing Point) <b>Comment</b> Spud 12-1/4" surface hole with spud mud and circulate. Use paper for seepage and LCM sweeps for lost circulation problems. Pump viscous sweeps if tight connections are encountered and prior to running the 9-5/8" casing.</p> <p><b>Description</b> 8-3/4" (100' above Desert Creek) <b>Comment</b> Drill out of the 9-5/8" casing with clean spud mud and circulate. Sweep for hole cleaning or lost circulation problems and use paper for seepage.</p> <p><b>Description</b> 8-3/4" (25' in Leadville top/7" Casing Point) <b>Comment</b> Displace the spud mud system with salt saturated brine 100' above the Desert Creek formation. Pre-treat mud for H2S prior to drilling the P4 Shale.</p> <p><b>Description</b> 6" Production <b>Comment</b> During the production hole drill, fresh water will be treated so that the Cl2 content is r &amp; \$ \$ \$ \$ d d a . Do not use LCM in production section</p> <p><b>SURVEY INFORMATION:</b></p> <p><b>Comment</b>            ~500' intervals from spud to the 9-5/8" casing point and            ~1000' intervals from below the 9-5/8" casing point to the top of the Paradox Salt            Do not drop surveys while drilling below the Paradox Salt due to potential sticking            ~500' intervals from below the Paradox Salt to TD</p> <p><b>EVALUATION PROGRAM:</b></p> <p><b>Evaluation Program</b>            6" Production Hole:                1st run dual laterolog                2nd run triple combo, monopole sonic</p> <p><b>Cased Hole:</b>                1st run GR, pulse neutron log                2nd run CBL over 7" casing                3rd run CBL over 4-1/2" liner</p>

**Expected Bottom Hole Pressure = 2000 psi (2500 psi max if compartmentalized)**

**Objectives:**

1. Maintain a focused effort by everyone on location to eliminate all accidents.
2. Drill, evaluate, case and complete the well at or under AFE cost estimate.
3. Run the 7" intermediate casing to ~25' TVD into the Leadville formation.
4. Isolate the 7" to surface with high quality cement.
5. Run the 4 1/2" 13- Chrome liner through the Leadville formation.
6. Isolate the 4-1/2" 13-Chrome liner with high quality cement.

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