

Amending APD Drilling Plan
 Right Hand Canyon 34 Federal #4
 SHL: 1820' FSL & 1650' FWL, Unit K
 Eddy County, New Mexico

Well name:	RHC 34-4
Operator:	Devon-SFS Operating, Inc.
String type:	Production
Location:	BHL 1,980' FSL & 2,310' FWL, Sec. 34, T21S, R24E

Design parameters:

Collapse

Mud weight: 9.000 ppg
 Design is based on evacuated pipe.

Minimum design factors:

Collapse:

Design factor 1.125

Burst:

Design factor 1.00

Environment:

H2S considered? Yes
 Surface temperature: 75 °F
 Bottom hole temperature: 143 °F
 Temperature gradient: 0.80 °F/100ft
 Minimum section length: 1,000 ft

Burst

Max anticipated surface pressure: 3,974 psi
 Internal gradient: 0.000 psi/ft
 Calculated BHP 3,974 psi
 Annular backup: 9.00 ppg

Tension:

8 Round STC: 1.80 (J)
 8 Round LTC: 1.80 (J)
 Buttress: 1.60 (J)
 Premium: 1.50 (J)
 Body yield: 1.60 (B)

Directional Info - Build & Hold

Kick-off point 6000 ft
 Departure at shoe: 620 ft
 Maximum dogleg: 1.5 °/100ft
 Inclination at shoe: 18.17 °

Tension is based on air weight.
 Neutral point: 7,446 ft

Estimated cost: 31,078 (\$)

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
3	1000	5.5	17.00	J-55	LT&C	1000	1000	4.767	3874
2	6400	5.5	15.50	J-55	LT&C	7370	7400	4.825	22598
1	1189	5.5	17.00	J-55	LT&C	8500	8589	4.767	4606

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
3	468	3910	8.36	3974	5320	1.34	134.9	247	1.83 J
2	3446	3948	1.15	3507	4810	1.37	117.9	217	1.84 J
1	3974	4910	1.24	528	5320	10.07	19.2	247	12.86 J

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Remarks:

Collapse is based on a vertical depth of 8500 ft, a mud weight of 9 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

Engineering responsibility for use of this design will be that of the purchaser.