

Well name: **Will 7 "A" Fee #1**
 Operator: **Devon Energy Production Company, L.P.**
 String type: **Liner: Production**
 Location: **Sec. 7, T23S, R28E, Eddy Co. NM**

Design parameters:

Collapse

Mud weight: 7.700 ppg
 Design is based on evacuated pipe.

Minimum design factors:

Collapse:

Design factor 1.125

Environment:

H2S considered? No
 Surface temperature: 75 °F
 Bottom hole temperature: 175 °F
 Temperature gradient: 0.80 °F/100ft
 Minimum section length: 400 ft
 Minimum Drift: 3.875 in

Surface pressure: 1,500 psi

Burst:

Design factor 1.00

Burst

Max anticipated surface pressure: 5,000 psi
 Internal gradient: 0.000 psi/ft
 Calculated BHP 5,000 psi
 Annular backup: 12.50 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)

Non-directional string.

Packer fluid details:
 Fluid density: 8.500 ppg
 Packer depth: 11,500 ft

Tension is based on air weight.
 Neutral point: 11,061 ft

Estimated cost: 53,178 (\$)

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
2	700	4.5	11.60	N-80	LT&C	9700	9700	3.875	16.2
1	2800	4.5	11.60	S-95	LT&C	12500	12500	3.875	64.9

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
2	5380	6131	1.140	3130	7780	2.49	36	223	6.21 J
1	6500	8650	1.331	2984	9240	3.10	28	245	8.81 J

Prepared Wally Frank
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 Houston, Texas

Remarks:

For this liner string, the top is rounded to the nearest 100 ft. Collapse is based on a vertical depth of 12500 ft, a mud weight of 7.7 ppg. The casing is considered to be evacuated for collapse purposes. Finally Collapse strength is based on the API method of biaxial correction for tension (with modifications for high collapse casing).

Burst strength is not adjusted for tension.

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