

Sundance Federal Well #17  
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Casing Design:

| O.D.   | Weight | Grade | Thread | Coupling | Interval | Length |
|--------|--------|-------|--------|----------|----------|--------|
| 8 5/8" | 24#    | J-55  | 8R     | ST & C   | 0-2400'  | 2400'  |

Minimum Casing Design Factors: Collapse 1370, Burst 2950,  
Tensile Strength 3.81

| O.D.   | Weight | Grade | Thread | Coupling | Interval   | Length |
|--------|--------|-------|--------|----------|------------|--------|
| 8 5/8" | 32#    | J-55  | 8R     | ST & C   | 2400-4200' | 1800'  |

Minimum Casing Design Factors: Collapse 2530, Burst 3930,  
Tensile Strength 5.03

Cement Program:

Lead Slurry: 721 sacks-3565 posC with 6% Bentonite 10% salt & NaCl

Calculated Linear Fill: Est. Hole Volume-3668.76 feet

Slurry Properties: Weight-12.7 ppg Yeild-2.10 cu.ft./sack

Tail Slurry 200 sacks Class "C" with 2% CaCl<sub>2</sub>

Calculated Linear Fill: Est. Hole Volume-639.68 feet

Slurry Properties: Weight 14.8 ppg Yeild 1.32 cu.ft./ sack

Hole Size: 7 7/8" Total Depth: 8200' Casing Size: 5 1/2"  
Setting Depth: 8200' Mud Weight: 8.7 ppg

Casing Design:

| O.D.   | Weight | Grade | Thread | Coupling | Interval | Length |
|--------|--------|-------|--------|----------|----------|--------|
| 5 1/2" | 15.5#  | J-55  | 8R     | LT & C   | 0-7000'  | 7000'  |

Minimum Casing Design Factors: Collapse 40.40, Burst 48.10,  
Tensile Strength 2.17

| 1. O.D. | Weight | Grade | Thread | Coupling | Interval    | Length |
|---------|--------|-------|--------|----------|-------------|--------|
| 5 1/2"  | 17#    | J-55  | 8R     | LT & C   | 7000'-8200' | 1200'  |

Minimum Casing Design Factors: Collapse 49.10, Burst 53.20,  
Tensile Strength 2.47

Cement Program:

Lead Slurry: 556 sacks Class "H" with .3% Flack(Fluid Loss)  
3% M117

Calculated Linear Fill: Est. Hole Volume-3785.8

A stage cementing collar will be used and placed at  
approximately 5500'.

Slurry Properties: Weight-15.6 ppg Yeild-1.18 cu.ft./sack

2nd Stage Lead Slurry: 127 sacks 3565 posC with 6% Bentonite,  
10% NaCl

Calculated Linear Fill: Est. Hole Volume-1538.9 feet

Slurry Properties: Weight-12.7 ppg iild-2.10 cu.ft./sack

Tail Slurry: 100 sacks Class "C"

Calculated Linear Fill: Est. Hole Volume-761 feet

Slurry Properties: Weight-14.8 ppg Yeild-1.32 cu.ft./sack