

SMITH RANCH "11" FEDERAL #2
 DRILLING PROGRAM
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4. Casing Program:

<u>Hole Size</u>	<u>Interval</u>	<u>Csg OD</u>	<u>Weight, Grade, Type</u>
25"	0-40'	20"	Conductor, 0.30" wall
17-1/2"	0-1350'	13-3/8"	48# WC-40, ST&C, New, R-3
11"	0-5100'	8-5/8"	32#, K-55 & S-80, ST&C, New, R-3
7-7/8"	0-TD	5-1/2"	17# N-80, LT&C, New, R-3

Casing Program:

20" Conductor Casing: Cemented with ready-mix to surface.

13-3/8" Surface Casing: Cemented to surface using 900 sx Poz "C" (35:65) + 6% Gel + 1/4# sx Cellophane Flakes followed by 200 sx Class "C" + 2% CC.

8-5/8" Intermediate Casing: Cemented with Poz "C" (35:65) + 6% Gel + 10% Salt + 1/4# sx Cellophane Flakes followed by 200 sx Class "C" + 2% CC + 0.25 lb/sx Cellophane Flakes.

ECP and DV Tool at +3600'. Cemented to surface with 1000 sacks Poz "C" (35:65) + 6% Gel + 10% Salt + 1/4# sx Cellophane Flakes followed by 200 sx Class "C" + 2% CC + 0.25 lb/sx Cellophane Flakes.

5-1/2" Production Casing: Cemented with 600 sx Class "H" + 0.8% Halad 322 + 1/4#/sx Cellophane Flakes + 2.5#/sx KCl.

Stage Tool at +7500'. Cemented with 500 sx Poz "H" (35:65) + 6% Gel + 1/4# sx Cellophane Flakes followed by 200 sx Class "H" as in first stage.

The above cement volumes could be revised based on fluid caliper surveys or mechanical caliper measurement from the open hole logs. The top of cement around the 5-1/2" casing is designed to reach 300' above the 8-5/8" casing seat at 5100'. External casing packers may be used to isolate the First Bones Springs sand from cement damage.