

Plugging Operations

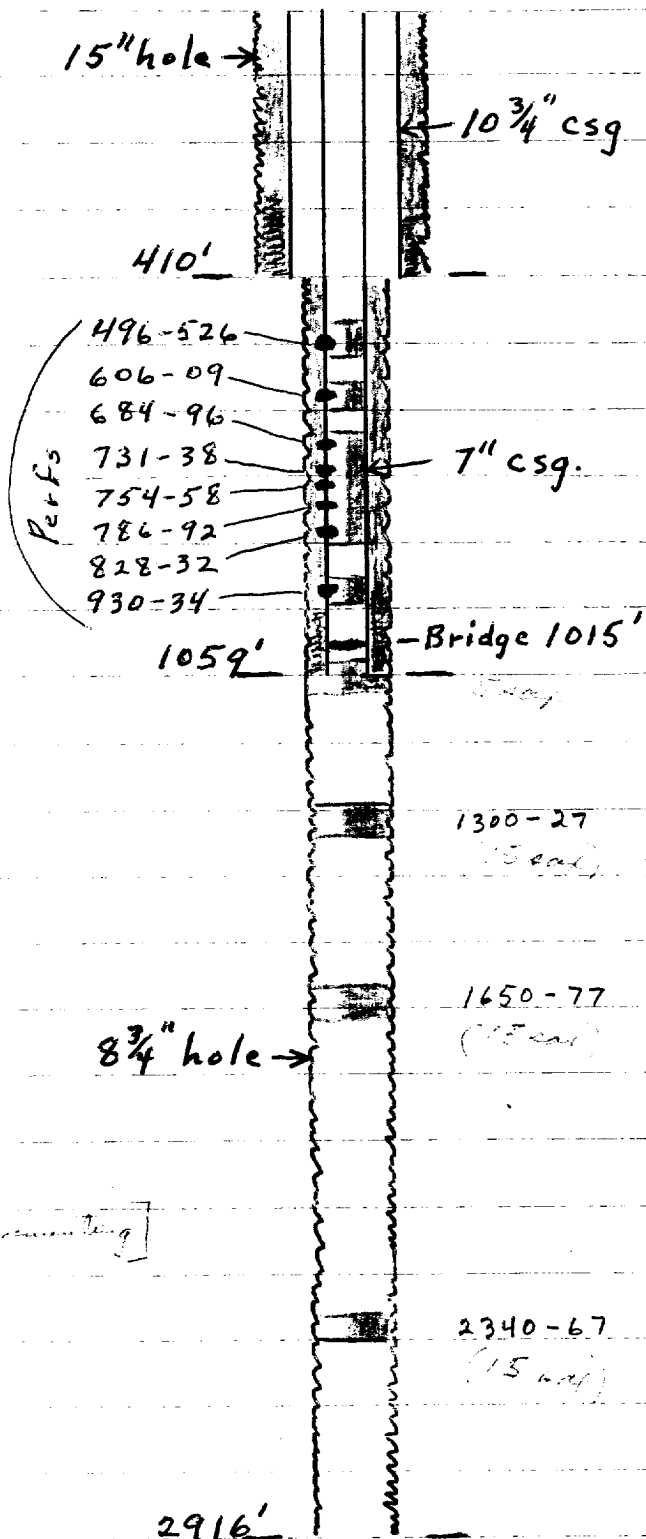
3/27 to 4/1 - 1977

Bruce Drilling Co., Liberal, Kan.

Rucker - Acme Tool Co.

Chief Valerius; Bill Kline

1. Dumped 110 bbls fresh water into 7" csg. after well head removed. (No Gas Show)
2. Found rubber plug (casing) on top of cement at 935'. Water found standing at 500' after Overnite S.D.
3. Drilled without return to 950'; then from 10% return up to max. 80% return (gradual increase) at 960' - bottom of drilled out cement. Formation hole is: Portland Cement, Iron, Cement, Rubber, Cement, Rubber, to 1041'. Then 1' void, 2' cement, 5' void, then solid cement to 1061'.
4. Cemented back to 490' or 480' (2) with 100 sac.
[Used 150 bbls fresh water total before cementing]
History - calculated and estimated on basis of available data and what was found in hole - on back.



Well history - Reconstructed.

Air drilled to 410'. Set 10 $\frac{3}{4}$ " csg. Cement to surface.

Air drilled to $\pm 1600'$. Hit big water.

Drilled with mud and great quantities of L.P. material to T.D. 2916'.

Set 7" csg. at 1059' to surface.

Apparently attempted to cement 7" to surface without any type of plug in 8 $\frac{3}{4}$ " open hole below casing. Pumped in 300 sack cement - all of which
* fell into open hole below 1059'.

Next set rubber plug in bottom of 7"; perforated immediately above plug and squeeze-cemented with 300 sacks. [Cement Bond log shows cement from 930' to 218' with skips corresponding to Kd and Sm sands.]

Apparently a second rubber plug (wiper?) was pushed down on top of cement to prevent slurry coming back thru' perfor.

Next more cement, followed by iron plug went into 7" csg. (Purpose unknown) Then more cement followed by rubber plug (wiper).

Then perforating and acidizing from 934' to 496'.

* [Theory: First 300 sack plug filled O.H. from $\pm 1600'$ to 1049']