

UPRR 23 PAN AM B #1 05-001-06230

SWNW 33 1S64W 6 PM

The UPRR 23 PAN AM B #1 was plugged by Amoco Production Co. September 1978. Proposed plugging requirements had 5-1/2" casing being pulled; isolated the production zones, provided isolation across the top and above the Fox Hills aquifer; a surface casing shoe plug and a surface plug.

The subsequent reporting of the plugging (Documents 304374, 304382, 304383) indicates that the original plan (Document 304390) was essentially followed.

- There was a 100 sx placed through tubing at 7900' isolating the Dsand and Jsand productive zones (perforations from 7845' - 7946')
- Casing was cut and pulled, but no documentation of depth other than the reference to the 1450' plug being set through casing
- Plan called for 180 sx plug from 1450' - invoice for cementing has 2 entries of 135 sx and 132 sx of cement
- If 135 sx were set at 1450' with a 1.26 cu ft/sx yield, would have a calculated top of cement of 990' (10% washout); if 180 sx were actually set - calculated top of cement 840' - which would be above the base of the Lower Arapahoe
- Surface casing shoe plug set at 260' according to plan - if 132 sx with 1.26 cu ft/sx yield, plug circulated to surface; if 180 sx used for Fox Hills isolation, and 80 sx placed per plan - coverage of 260' - 13' with 1.15 cu ft/sx yield; last 7 sx placed at surface if needed - or 87 circulated to surface

The documentation of the plugging is not explicit in the way the plugs were executed from 1450' to surface, but based on the approved plan and the invoices that were supplied and usual plugging procedures the above conclusions were drawn as to the final plugged well. The hydrocarbon zones were isolated with a downhole 100 sx plug at 7900', casing was cut and pulled at some depth (minimum 1450') and a 135 to 180 sx placed isolating above the base of the Fox Hills, but continued across the top of the Fox Hills aquifer. If the plug placed at 1450' was 180 sx, the bottom of the Lower Arapahoe was also covered.

The shoe plug if placed per the plan effectively went to surface with either 80 sx or 135 sx. The Lower Arapahoe and Upper Arapahoe aquifers were isolated from exposure to hydrocarbons with the downhole plug at 7900' and the additional plug at 1450'. The Lower Arapahoe and Upper Arapahoe are not isolated from each other based on the planned plugging, and there is no indication in the invoices that the plan was dramatically altered when the well was plugged.

001-06230

SWNW 33 1S64W

Plugged wellbore

8-5/8" Surf Csg @  
212' Cmtd w/ 165  
sx

80 -132 sx plug placed  
through casing at 260'  
- calc. TOC 0'

Casing cut and pulled -  
proposed at 7200' - no  
documentation of actual  
cut depth - surface plugs  
set through casing  
starting at 1450'

minimum 135 sx plug  
placed through casing at  
1450' - calc. TOC 990' - if  
180 sx, calculated TOC  
840'

Calc. TOC 6853'

50 sx Ideal Type II, 50 sx  
Pozmix 'A' through  
tubing at 7900'

Dsand perfs 7845' - 7854'

Jsand perfs 7936' - 7946'

8063' 5-1/2" 15.5# - 200 sx 50-50 poz  
8065' TD

