

April 1, 1942.

Description of cores,  
Gulf #1 Bushnell,  
Sec. 8-16S-12W, Kansas.

Cored 3284-3289', recovered 5'

3284-3284'6" Pennsylvanian lime, with abundant included muscovite mica and some angular quartz. The lime has been broken, with development of irregular, contorted, seams of mica which suggest squeezing. The contact with the Pre-Cambrian is at a 55 degree angle. There is a thin ~~xxxx~~ layer of quartz sand at the base.

3284'6"-3289

Pre-Cambrian. Weathered arkosic quartzite. Mainly quartz, with spots of white kaolinitic clay and books of muscovite mica. Traces of bedding at approximately 15 degrees dip are expressed by slight changes in texture, by micaceous partings, and by limy streaks. The lime is believed to have been infiltrated from the Pennsylvanian sea, entering both joint planes and the finer porosity left by removal of altered feldspar. Later squeezing by the weight of overlying Pennsylvanian sediment caused the lime to fill most voids. The rock is rotten and friable, due to the altered feldspar and the mica. Porosity is limited ~~to~~ and permeability is very poor. Traces of fracture porosity are expressed by faint oilstain, most fractures having been either plugged by lime or squeezed shut.

Cored 3289-3294' Recovered 5'

3289-3294

Similar ~~to~~ above. Somewhat limy in upper part, with lime tending to be disseminated. The lower part of the core is coarser in texture with traces of interstitial porosity. Oilstain is more marked in this lower part but the permeability does not seem adequate for production.

Remarks: This rock is a poor reservoir and will not make a well at the present depth. Mr. Price considers that there is a possibility that Pennsylvanian conglomerate is present to the total depth of 3294' and suggests deepening for the reason that porous conglomerate might be found. Mr. Walters and I consider that the Pre-Cambrian was topped at 3284'6", but suggest the well be deepened, for the reason that both the production possibilities of this well and the age of the rock should be checked. The only possibility of porosity in the Pre-Cambrian would be an open fracture in material more solid than that described above. Proof of the age of the rock has a bearing on the evaluation of the possibility of a Pennsylvanian conglomerate reservoir on this lease.

Max Littlefield and  
Robert F. Walters

*Ported*

June, 1942.

Gulf #1 Bushnell,  
C SL SW NE, 8-16S-12W,  
Elevation 1881'

Pennsylvanian conglomerate 3281-3284 $\frac{1}{2}$ '

3281-3284 No description. Top from Price.

3284-3284 $\frac{1}{2}$  From core. Pennsylvanian lime, with abundant included muscovite mica and some angular quartz. The lime has been broken, with development of irregular, contorted seams of mica which suggest squeezing. The contact with the Pre-Cambrian is at a 55 degree angle. A thin layer of quartz sand is present at the base.

Pre-Cambrian quartzite Top 3284 $\frac{1}{2}$ ' Penetration 36' Sub-sea, minus 1403 $\frac{1}{2}$ '

3284 $\frac{1}{2}$ -3319 $\frac{1}{2}$  Quartzite, mainly quartz, with spots of white kaolinite clay and books of muscovite mica. Cores show traces of bedding at approximately 15 degrees dip as expressed by micaceous partings and by limy streaks. The lime is believed to be infiltrated from the Pennsylvanian sea, entering both joint planes and the finer porosity left by the removal of feldspar by weathering. In the upper part the rock is rotten and friable. Porosity is limited and permeability is very poor. Traces of fracture porosity are expressed by faint oilstain, most fractures having been plugged by lime or squeezed shut. The lower part is fresher and contains little feldspar. The micas have inclusions of a dark opaque mineral.

ML and RFW