

Feb., 1943

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Derby, # 6 Esfeld
Sec. 29-16s-11w, NE SE NW
Elev. 1896'

Pennsylvanian conglomerate

Two or three feet of slightly sandy limestone, buff, somewhat asphaltic and glauconitic. An occasional oolitic chert fragment in rotary samples shows lime contacts indicating that there are some detrital chert pebbles in the basal marine limestone.

Arbuckle Residuum Top 3322' Penetration 26' Top, Subsea -1426'
3322-3326 Fresh white chert and some loose sand grains.

(Note: Five rotary samples, circulated at 3324' and 3326' include a total of only 3 chips of dolomite. This is Post Boyce type, white, coarse, slightly sandy, fresh. Probably introduced by sample contamination. If drilled, is not an oil reservoir. Test possibly drilled one or two relict nubbins of dolomite in a residual section.)

3327-3331 Fresh chert and 10% loose sand, coarse and medium, rounded. Much gray chalcedonic chert. Large irregular loose white oolites common.
3331-3343 Dull white cherts and 5% loose sand. Cherts largely quartzose and abundantly oolitic. Some buff sandy clay. Basal Cotter residuum.
3343-3348 Sand and sandy green clay. Sand grains are loose, fine and medium, rounded. This sand is finer, more clayey, less recrystallized than the Boyce sand in tests immediately west and totally lacks secondary silicification. Residuum of Post Boyce. No dolomite at Subsea -1458' TD

Remarks: Test made an initial of 46 bbls oil and 57 bbls of water. Pay reported from 3334'-3346' and some water 3346'-3348' TD

This test is located in the solution moat surrounding the Pre Cambrian quartzite hill in Sec. 30. The moat formed at the place where run-off water from the hill encountered the first soluble rock. As solution continued removing dolomite underground, the accumulated residual material, chert, sand, and clay from both the Cotter and the Pre Cotter were lowered by slumping and preserved from Penn. marine erosion. The Shell # 1 Redetzke, a dry hole in the NE SE of Sec 19 encountered a similar leached slumped section from -1426' to -1465' where sandy dolomite was drilled. Outward from this moat-zone of concentrated solution erosion, fresh Post Boyce dolomite forms a broad plateau, an excellent reservoir. Our # 1 Redetzke, north 10 acre offset to the Shell dry hole, and the Darby # 5 Esfeld, north 40 acre offset to the # 6 are so located.

Compaction under load ordinarily destroys porosity in residuum such as that drilled in this test. Such residuum forms a seal along the updip edge of the fresh dolomite trap. An oil occurrence such as the # 6 Esfeld is unusual and may be due to proximity to the dolomite reservoir.

RFW