

TOTCO DEVIATION SURVEYS

<u>Depth</u>	<u>Degree Off Vertical</u>	<u>Depth</u>	<u>Degree Off Vertical</u>	<u>Depth</u>	<u>Degree Off Vertical</u>
1071	1/2	7165	1 3/4	9886	1 3/4
1378	1/4	7382	2	10042	2
1670	1/2	7488	2 1/2	10122	2 1/4
2128	1/4	7598	2 1/4	10199	2
2270	1/2	7940	2	10255	1 3/4
5250	1/4	8031	1 1/4	10322	2
5508	3/4	8220	1 1/2	10365	2 1/2
5866	2	8485	1 3/4	10665	2
6053	1 1/2	8685	2 1/4	10858	1 3/4
6149	1 1/4	8979	2	10927	1 1/4
6273	1 3/4	9126	2 1/4	10969	1 1/2
6393	2	9267	2	11044	1 1/4
6543	1 1/2	9545	2 1/4	11260	2 1/4
6703	2	9622	2 3/4	11444	2 1/2
6927	1 3/4	9696	2	11869	2
7040	1 1/2	9770	2 1/4		

CORE RECORD

None

DEILL STEM TESTS

<u>No.</u>	<u>Date</u>	<u>From</u>	<u>To</u>	<u>Perforation or</u> <u>Open Hole</u>	<u>Tool</u> <u>Set #</u>	<u>Chokes</u> <u>Size</u>	<u>Water</u> <u>Bottom</u>	<u>Time</u> <u>Tested</u>
1	11/17/56	10440	10510	Open Hole	10440	5/8"	1"	None 2 hrs.
(Penn) Nothing to surface, recovered 51' of drilling mud, 1170' of slightly gas cut salt water, SFP: 0#, BHFP: 690#, 30 min. SIP: 3950#, HH: 5125-5120#.								
2	11/2-/56	10660	10728	Open Hole	10660	5/8"	1"	None 2 hrs.
(Penn) Nothing to surface, recovered 210' of oil and gas cut drilling mud, SFP: 0#, BHFP: 75#, 30 minutes, SIP: 180#, HH: 5400-5330#.								
3	12/6/56	11545	11605	Open Hole	11545	5/8"	1"	1400' 1 1/2 hrs.
(Penn) Nothing to surface, recovered 1400' water cushion 20' of drilling mud, no shows, SFP: 0#, BHFP: 780#, 15 minutes, SEP: 820#, HH: 5635 in, 5745 out.								
4	12/7/56	11605	11655	Open Hole	11605	5/8"	1"	None 3 hrs.
(Penn) Nothing to surface, recovered 35' of oil and gas cut drilling mud, no water, SFP: 0#, BHFP: 150#, 30 minutes, SEP: 970#, HH: 5750-5615.								

ACIDIZING

12/16/56	Cardinal Chemical Company acidized perf. 11862-11872 w/2000 gallons 15% Regular. 64 minutes, 3/4 BPM, TP: 3000-5200#. Swabbed 46 BLO (all) in 3 hrs. Swabbed 29 BAW in 9 hrs. No gas. 1000' SEP
12/17/56	Cardinal Chemical Company re-acidized perf. 11862-11872 w/5000 gallons 15% IST, 546 gallons into formation @ 3500#, had communication. Circulated out acid.
12/18/56	Cardinal Chemical Company acidized perf. 11862-11872 w/5000 gallons 15% IST. 94 minutes, 1.3 BPM, TP: 3000-5200#. Swabbed and flowed 46 BLO in 3 hrs. Swbd. 71 BAW in 14 hours. No shows. Swbbed 15 BLO / 33 BAW in 29 hrs. No gas. Did not recover 15 BLO & 24 BAW.
12/21/56	Cardinal Chemical Company acidized perfs. 11616-11620, 11604-11612, 11589-11599 w/3000 gallons 15% IST, TP: 2000# to 5500#. Swabbed 45 BLO (all) in 4 hours.
12/22/56	Cardinal Chemical Company re-acidized perfs. 11616-11620, 11604-11612, 11589-11599 w/6000 gallons 15% IST, TP: 2600-6500#. Swabbed 75 BLO (all) / 98 BAW 18 hrs. Fair show of gas.
12/26/56	Cardinal Chemical Company re-acidized perfs. 11616-11620, 11604-11612, 11589-11599 w/12000 gallons 15% IST, 94 minutes, 1.3 BPM, TP: 2000-6000#, 1 minutes SIP 5400#. Swabbed 66 BLO (all) / 76 BAW in 16 hours. Good show of gas, fluid scattered.