

TOTCO DEVIATION SURVEY

<u>Depth</u>	<u>Degrees off Vertical</u>	<u>Depth</u>	<u>Degrees off Vertical</u>	<u>Depth</u>	<u>Degrees off Vertical</u>
167	1/2	7951	1/2	10780	1
1989	1	8407	1/4	10861	3/4
2752	3/4	8646	1	10943	1/2
3085	1/4	8755	1/2	11027	1/2
3834	1/2	8843	1/4	11210	1
4629	1/2	9148	1/2	11287	3/4
4763	1/4	9218	1/2	11393	3/4
5308	1/2	9407	1/4	11479	1/2
5508	1/2	9539	1/4	11479	1/2
5969	1	9600	1/4	11633	1
6316	1/2	9656	1/2	11738	2-3/4
7100	3/4	9809	1/2	11782	1-1/2
7369	1/2	9966	3/4	12102	2
7661	1/2	10138	3/4	12239	1-1/2
7731	3/4	10509	1	12400	1-1/2
		10572	1		

DRILL STEM TESTS

No.	Date	From	To	No. Kind & Size of Perforations (or Open Hole)	Tool Set @	<u>Chokes</u>		Water Cushion	Time Tested
						Top	Bottom		

1 4-10-57 4900 4970 Open 4900 5/8" x 1" None 3 hrs.

(San Andres) Gas to surface in 35 minutes, 234/ MCF/Day. Recovered 450' heavy gas cut drilling mud + 270' of salt water. Surface flowing pressure 36#, bottom hole flowing pressure 228-340#. 30 Minutes shut-in pressure 1640#. Hydrostatic Head 2860-2835#.

2 5-14-57 8990 9060 Open 8990 5/8" x 1" None 1 hr.

(Wolfcamp) Nothing to surface. Recovered 15' drilling mud, no shows. Surface flowing pressure 0#, bottom hole flowing pressure 85-85#. 30 Minutes shut-in pressure 85#. Hydrostatic Head 4875# in and out.

3 6-6-57 10610 10660 Open 10610 5/8" x 1" None 3 hrs.

(Pennsylvanian) Nothing to surface. Recovered 100' of gas cut drilling mud. Surface flowing pressure 0#, bottom hole flowing pressure 85-140#. 30 Minutes shut-in pressure 540#. Hydrostatic Head 5735 in and 5640 out.

4 6-23-57 11385 11479 (Packer failed)

(Pennsylvanian Sand)

5 6-24-57 11354 11479 Open 11354 5/8" x 1" 1530' 1-1/2 hrs.

(Pennsylvanian Sand) Nothing to surface. Recovered 1530' water cushion + 120' drilling mud, no shows. Surface flowing pressure 0#, bottom hole flowing pressure 820#. 30 minutes shut-in pressure 925#. Hydrostatic Head 6230-6125#.

6 6-15-57 12290 12405 Open 12290 5/8" x 1" 2000' 2 hrs.

(Devonian) Recovered 2000' water cushion + 225' of very slightly gas cut drilling mud. Surface flowing pressure 0#, bottom hole flowing pressure 1000-1035#. 30 Minutes shut-in pressure 4050#. Hydrostatic Head 6690-6630#.

7 7-24-57 12470 12514 Open 12470 5/8" x 1" 2000' 3-1/4 hrs.

(Devonian) Nothing to surface, strong blow throughout. Recovered 2000' water cushion + 2610' salt water. Surface flowing pressure 0#, bottom hole flowing pressure 1010-2120#. 30 Minutes shut-in pressure 4050#. Hydrostatic Head 6710 in and 6490 out.

Well Log

Depth	Pressure (psi)	Temperature (°F)	Specific Gravity	Notes
1000	1000	1000	1000	
1010	1010	1010	1010	
1020	1020	1020	1020	
1030	1030	1030	1030	
1040	1040	1040	1040	
1050	1050	1050	1050	
1060	1060	1060	1060	
1070	1070	1070	1070	
1080	1080	1080	1080	
1090	1090	1090	1090	
1100	1100	1100	1100	
1110	1110	1110	1110	
1120	1120	1120	1120	
1130	1130	1130	1130	
1140	1140	1140	1140	
1150	1150	1150	1150	
1160	1160	1160	1160	
1170	1170	1170	1170	
1180	1180	1180	1180	
1190	1190	1190	1190	
1200	1200	1200	1200	

Well Log

Depth	Pressure (psi)	Temperature (°F)	Specific Gravity	Notes
1000	1000	1000	1000	
1010	1010	1010	1010	
1020	1020	1020	1020	
1030	1030	1030	1030	
1040	1040	1040	1040	
1050	1050	1050	1050	
1060	1060	1060	1060	
1070	1070	1070	1070	
1080	1080	1080	1080	
1090	1090	1090	1090	
1100	1100	1100	1100	
1110	1110	1110	1110	
1120	1120	1120	1120	
1130	1130	1130	1130	
1140	1140	1140	1140	
1150	1150	1150	1150	
1160	1160	1160	1160	
1170	1170	1170	1170	
1180	1180	1180	1180	
1190	1190	1190	1190	
1200	1200	1200	1200	

CORE RECORD

<u>No.</u>	<u>From</u>	<u>To</u>	<u>Rec.</u>	<u>Description</u>
1	9700	9750	50'	Lime and shale, no shows. 9745-9750 - 5' porosity, bleeding salt water.
2	12405	12418	13'	Dolomite, no shows.
3	12418	12447	22'	Dolomite with shale partings, no show.
4	12447	12469	21'	Dolomite with trace chert and shale, no shows.
5	12469	12487	16½'	12469-12471½ - 2½' dolomite, no shows. 12471½-12474 - 2½' dolomite, trace to 10% vuggy pin head and pin point porosity. 12474-12477½ - 3½' dolomite with trace chert. 12477½-12485½ - 8' dolomite, trace to 10% vuggy pin head and pin point porosity. 12485½-12487 - 1½' lost.
6	12487	12514	26½'	12487-12489½ - 2½' dolomite, trace pin point and pin head porosity, no shows. 12489½-12495½ - 6' dolomite and chert, no shows. 12495½-12498 - 2½' dolomite, trace 5% pin point and pin head porosity, trace stain and fluorescence. 12498-12513½ - 15½' dolomite and chert, no shows.

ACIDIZING OR OTHER COMPLETION OPERATIONS

8-11-57	The Western Company acidized perforations 4940-4958 w/1000 gals 15% regular acid. TP: 3000-3000#. CP: Packer. Injection rate 2½ BPM. 5 Minutes shut-in pressure 1400#. Swabbed and flowed 9 barrels, 2% oil, 98% salt water.
8-14-57	The Western Company acidized perforations 4940-4944 w/500 gals 15% regular acid. TP 3000-1300#. 5 Minutes shut-in pressure 700#. Swabbed 28 BLO (all) in 2 hours and 107 BSW in 7 hours.

