

GEOLOGICAL REPORT



00264896

WELL: Concord State A-1

LOCATION: 2040' FSL & 600' FWL - Sec. 16 - T.9N. - R.56W.
Weld County, Colorado

ELEVATIONS: G.L. = 4506' K.B. = 4516'

OPERATOR: Concord Oil Company, Inc.

CONTRACTOR: Gear Drilling Company, Rig 3
Denver, Colorado

CASING: Ran 4 joints, 164', 24", 8 5/8" surface casing. Set at 174'
K.B. with 100 sacks Regular, 3% calcium chloride. Plug
down 4:00P.M. 8/15/90.

Ran 164 joints, used, 11.6", 4 1/2" production casing.
Set at 6247' K.B. with 230 sacks 50-50 poz with 10%
salt, 2% gel, 0.75% CFR-3. Plug down 4:45 A.M. 8/22/90.

WELL HISTORY: 8/16/90 Drilling at 2530'. MIRU and Spud
1:00P.M. 8/15/90.

8/17/90 Drilling at 4575'.

8/18/90 Drilling at 5775'.

8/19/90 Logging at 5935'.

8/20/90 Drilling at 6010'.

8/21/90 Tripping for logs at 6250'

8/22/90 4 1/2" production casing set at 6247'.
Rig released 5:15 A.M. 8/22/90.

DRILL STEM TEST: DST 15820-5840 (J-1) Straddle Test.
30-70-60-60
Tool opened for 30" with an extremely weak blow, died
5" and remained dead thru flow period. Closed tool for
70". Opened tool for 60" with no blow and remained
dead throughout test. Closed tool for 60"

Recovered 10' of drilling mud.

IHP 2953.1 FHP 2979.8
IFP 127.3-33.3 FFP 115.9-42.0
ISIP 1097.8 FSIP 142.3

SAMPLES: The sample quality was good.

CORES: None

LOGS: Great Guns

Dual Induction 174' to 6249'

Dual Compensated Porosity 5600' to 6232'

Microresistivity 5600' to 6214'

LOG TOPS: Formation Electric Log Top (Subsea)

Hygiene	3013	(+1503)
Niobrara	4920	(-404)
Ft. Hays	5220	(-704)
Carlile	5273	(-757)
Greenhorn Lime	5440	(-924)
"X" Bentonite	5638	(-1122)
"D" Sand	5740	(-1224)
Huntsman Shale	5757	(-1241)
"J" Sand	5825	(-1309)
Skull Creek	5970	(-1454)
Lakota	6102	(-1586)
RTD	6250	(-1734)
LTD	6249	(-1733)

BIT RECORD:

No.	Make	Type	Size	Depth Out	Hours
1	Rig		12 1/4	175'	
2	Smith	FDS	7 7/8	3895	18 1/2
3	Smith	FDT	7 7/8	4205	2 3/4
4	Hughes	At3-1	7 7/8	5760	15
5	Hughes	J-22	7 7/8	5935	17 1/2
6	Hughes	J-33	7 7/8	6250	24 1/2

DEVIATION SURVEYS:

Date	Depth	Deviation
8/15/90	550	1/4
8/15/90	1013	1/2
8/16/90	1510	1/2
8/16/90	2005	3/4
8/16/90	2533	3/4
8/16/90	3032	1
8/16/90	3618	1 1/2
8/16/90	3895	1 3/4
8/17/90	4207	1 1/4
8/17/90	4734	1 1/2
8/18/90	5763	1

PIPE STRAP:

Board	5820.90
Strap	5822.50

Difference	1.60 Strap long to board
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SAMPLE DESCRIPTIONS: Dual Induction Depths Used.

Granerous Shale	5700-5740	Shale: Dark gray to black, fissile, brittle.
"D-1" Sandstone	5740-5750	Sandstone: White, fine grained, quartz, subangular, well sorted, even to spotty pale yellow fluorescence, streaming to slow white cut with residue ring, poor to fair porosity.
"D-2" Sandstone	5750-5758	Sandstone: White to light gray, medium to coarse grained, sub-angular to sub-rounded, moderate sorting, common dark gray lithic rock fragments, even to spotty pale yellow fluorescence, streaming cut with white residue ring, poor to fair porosity. Common individual coarse grained, quartz grains in the bottom of tray.
Huntsman Shale	5758-5804	Shale: Dark brownish gray and dark gray fissile.
"J" Siltstone	5804-5825	Siltstone/Shale: Interbedded dark gray and brownish gray.
"J-1" Sandstone	5825-5834	Sandstone: White to light gray, fine grained to very fine grained, quartz, subangular, dark gray lithic rock fragments, minor glauconite, well sorted, even to spotty pale yellow fluorescence, streaming white cut with residue ring, poor to fair porosity.
"J-2" Sandstone	5834-5844	Sandstone: White to light gray, very fine grained, clay filling, spotty pale yellow fluorescence, slow cut, poor porosity.
Massive "J"	5844-5970	Sandstone: White, fine to coarse grained, quartz, sub-rounded, moderate sorting, very few preserved clusters, spotty pale yellow fluorescence 5844-5855, appears wet. Fair to good porosity 5844-5894.

Poor to fair porosity 5894-5970. Poor preservation of sandstone samples throughout the entire Massive "J" section.

Skull Creek	5970-6102	Shale: Medium to dark gray, fissile with minor light gray siltstone.
Lakota	6102-6249	Sandstone: White, fine grained to coarse grained, sub-angular to sub-rounded, moderate to well sorted, common clay filled porosity, no shows of oil or gas. Interbedded with dark gray fissile shale. Excellent porosity development 6166-6185. No preserved clusters through this section, just individual coarse grains of well rounded, frosted quartz. Increased dark gray and brownish gray shale 6194-6249 relative to sandstone.

DISCUSSION:

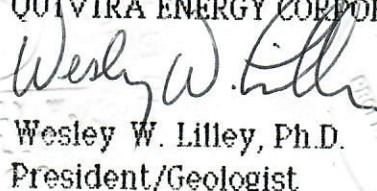
The subject well appears to be capable of production from the five foot thick D-2 sand (5750-5755); this interpretation is based upon the quality of the sample shows, electric log calculations and the structural position of the subject well relative to the D production immediately north of this well (+1 to +13 feet). In addition to the D-2 potential, there is an additional three feet of D-1 sands that may or maynot be capable of production (5741-5743 and 5746-5747). It was decided that any attempt to DST these sands might result in a misrun or inconclusive results and that the most conclusive way to evaluate the production capabilities of these sands is through casing with a completion attempt. I would recommend the following sets of perforations:

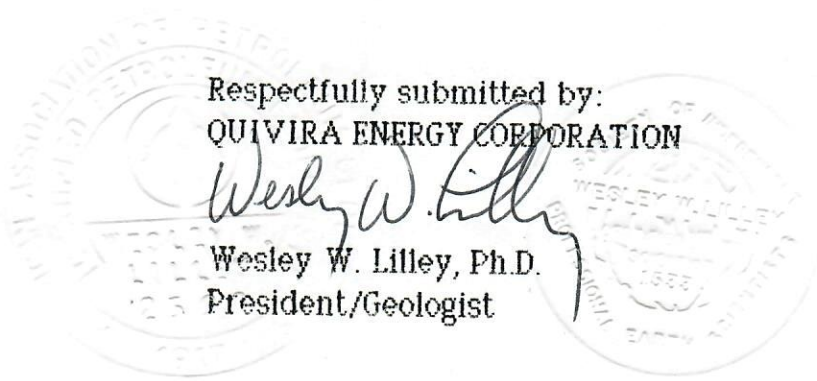
D-1 5742 to 5749

D-2 5751 to 5756

I want to wish you much success with your completion try on the subject well.

Respectfully submitted by:
QUIVIRA ENERGY CORPORATION


Wesley W. Lilley, Ph.D.
President/Geologist



HIGH PLAINS



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TOWNSHIP _____ RANGE _____ COUNTY _____ STATE _____

Wes. 111 534 - 3052

CONCORD STATE A-1

PERF "D" SAND

5742-49 4 SPF

5751-56 4 SPF

TREATED w/

1000 GAL OF 3% KCL WTR

w/ SURFACTANTS, FRICTION

REDUCERS AND EMULSION

BREAKERS & 75 BALL

SEALERS.

SWABBED 54.6 BBCS. OVER LOAD.

TESTED WATER WITH VERY

MINOR SHOW OF GAS

AND OIL.

RECEIVED

APR 9 1992

COLO. OIL & GAS CONS. COMM.

PETROLEUM LAND SERVICES / OIL AND GAS PROPERTIES