

Computer Inventories

GEOLOGICAL REPORT

FRONTIER OIL COMPANY

NO. 3 CLARK "A"

APPROX. SW SW SW Sec. 17-12S-33W

LOGAN COUNTY, KANSAS

APL 15-109-20508

DATE COMMENCED: April 27, 1991

DATE OF RTD: May 5, 1991

GEOLOGIST: RICHARD D. PARKER

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AUG 27 1991

RECEIVED
STATE DEPARTMENT OF REVENUE

AUG 27 1991

COMMERCIAL RECEIPTS
SECTION

17-12-33W

Frontier Oil Company
125 N. Market, Ste. 1720
Wichita, Kansas 67202

Frontier Oil Company
No. 3 Clark "A"
Approx. SW SW SW
Sec. 17-12-33W
Logan County, Kansas

Dear Sir:

The following is a Geological Report, with a Time Log attached on the above captioned test well.

Drilling was supervised from 3700' to 4770', rotary total depth. Samples were examined from 4000' to rotary total depth.

All formation tops, zones of porosity and staining are based on rotary bushing measurements. Any corrections in measurements during the drilling of the well have been incorporated into this report.

Elevation (Estimated)	3150 DF	-- 3153 KB
Anhydrite	2620	+ 533
Heebner	4039	- 886
Toronto	4062	- 909
Lansing-Kansas City	4079	- 926
Base of Kansas City	4381	-1228
Pawnee	4508	-1335
Fort Scott	4569	-1416
Johnson	4642	-1489
Mississippian	4708	-1555
RTD	4770	-1617
4½" Pipe At	4769	-1616

Structurally on top of the Lansing-Kansas City the No. 3 Clark "A" ran flat with the Clark "A" No. 1 located 100' northwest. On top of the Johnson the No. 3 Clark "A" ran 3' low to the No. 1.

ZONES OF INTEREST

LANSING-KANSAS City (Top 4080)

4080 to 4090

White fine crystalline lime with no staining.

4111 to 4118

White fine crystalline to slightly cherty lime, no staining.

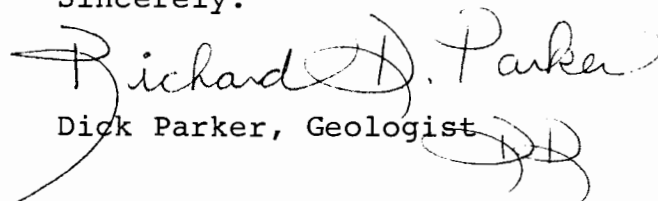
4130 to 4136

White chalky to slightly cherty lime, no staining.

4169 to 4180	White fine crystalline with trace of light stain.
4190 to 4195	White well developed oolitic lime with no staining.
4246 to 4252	White fine crystalline to chalky lime with trace of stain.
4271 to 4279	White chalky to dense cherty lime with no staining.
4288 to 4294	White oolitic to slightly vuggy lime with faint vuggy porosity. Fair spotted stain.
<u>JOHNSON (Top 4642)</u> 4642	Tan chalky to slight oolitic lime with no show.
4670 to 4690	Tan fine crystalline to vuggy lime with tar spotted stain.

4½" new 10½# casing was set at 4769', 1' off bottom with 225 sx ASC cement. Zero point is 5' AGL and the shoe joint is 18-52' long.

Sincerely.


Dick Parker, Geologist

DRILLING INFORMATION ON THE CLARK "A" NO. 3

Drilling Contractor: Red Tiger Drilling Co.

Drillers: Fulton
Barriger
McQuitty

Tool Pusher: Rick Barriger

Spud Date: April 27, 1991

Date of RTD: May 5, 1991

Surface Pipe: 8 5/8" @ 351'/200 sx

Casing: 4 1/2" @ 4769/225 sx
ASC
Basket @ 2720'

TOTAL FOOTAGE DRILLED PER DAY

Under Surface At 3:30 AM on April 28, 1991

	Feet	At	7:00 AM	On	
535					4-28-91
2185	"	"	"	"	4-29-91
2875	"	"	"	"	4-30-91
3575	"	"	"	"	5-01-91
3945	"	"	"	"	5-02-91
4285	"	"	"	"	5-03-91
4535	"	"	"	"	5-04-91
4770	"	"	1:25 PM	"	5-05-91

BIT RECORD

Bits	Type	Footage
#1	Reed - HP-12 (new)	351 to 1643
#2	Varel-437C (new)	1643 to 4770

MUD RECORD

Mud Company - MUD-CO

Type: Chemical

Surface:	10 sx gel, 1 sk lime
2735	20 sx gel
3290	102 sx gel, 4 sx soda ash, 4 sx casutic, 4 sx lignite
3760	102 sx gel, 5 sx soda ahs, 5 sx caustic, 5 sx lignite
4200	15 sx gel, 1 sk caustic, 1 sk drispac
4460	20 sx gel, 2 sx caustic, 1 sk monopac, 1 sk lignite
4730	20 sx gel, 2 sx caustic, 1 sk soda ash, 1 sk lignite

DRILLERS TIME LOG

Frontier Oil Company
No. 3 Clark "A"

Apx. SW SW SW
17-12-33W
Logan County

Elev.: 3150 DF
3153 KB

DEPTH	MINUTES	REMARKS
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1 Foot Drilling Time

3700 to 3710	4-3-4-3-5-4-1-2-2-2	
3720	3-2-3-3-4-3-3-3-4-3	
3730	3-3-3-3-3-3-2-3-3-3	
3740	3-3-4-3-3-4-4-3-1-2	
3750	3-3-3-3-1-3-2-3-2-3	
3760	3-3-2-3-2-3-2-3-2-2	
3770	1-2-2-3-2-2-2-2-2-2	
3780	2-2-1-2-3-4-2-3-2-2	
3790	2-2-2-2-2-3-2-2-3-2	
3800	3-2-3-2-3-2-2-2-2-2	
3800 to 3810	2-2-2-3-2-3-4-3-3-4	
3820	3-3-4-3-2-2-2-3-3-2	
3830	3-2-3-3-3-3-2-2-3-1	
3840	2-3-3-2-2-2-2-3-3-4	
3850	4-2-3-2-3-2-3-2-2-2	
3860	2-2-2-2-3-2-2-2-2-1	
3870	2-2-3-4-3-3-4-5-3-4	
3880	3-4-3-4-3-3-4-3-4-4	
3890	2-2-2-2-2-2-1-2-2-2	
3900	2-2-2-2-2-3-2-2-2-3	
3900 to 3910	2-1-2-2-2-2-2-2-2-1	
3920	1-3-2-2-3-2-2-2-2-2	
3930	5-5-2-2-2-4-3-3-1-2	
3940	1-1-1-1-1-1-1-1-1-1	
3950	1-1-1-1-2-2-1-2-2-3	
3960	3-4-3-4-3-3-4-2-2-2	
3970	2-3-2-2-2-4-4-4-4-4	
3980	4-4-3-3-4-3-3-3-4-3	
3990	4-4-4-4-5-4-3-3-3-4	
4000	4-4-5-4-2-1-1-1-2-2	

4000 to	4010	1-2-2-2-1-1-2-3-5-4
	4020	4-4-3-2-1-1-1-3-3-2
	4030	2-2-2-2-2-2-3-2-2-2
	4040	4-2-2-1-3-3-4-4-5-3
	4050	2-3-3-4-4-4-4-5-4-5
	4060	5-6-6-5-5-4-5-4-4-4
	4070	4-5-4-3-3-4-4-4-4-3
	4080	3-4-4-5-5-6-6-5-6-3
	4090	3-3-4-3-3-3-2-2-2-1
	4100	2-2-1-2-2-1-2-2-3-3
4100 to	4110	4-3-4-4-3-4-4-4-3-4
	4120	5-3-3-2-2-2-2-2-3-3
	4130	3-2-3-5-4-4-4-4-3-2
	4140	4-3-2-4-4-4-3-4-3-4
	4150	2-4-5-4-4-5-4-4-5-5
	4160	5-5-5-4-4-5-7-5-4-5
	4170	4-6-6-5-7-6-7-7-7-3
	4180	3-4-2-2-4-3-4-3-2-3
	4190	3-5-6-5-4-2-2-4-3-5
	4200	5-3-3-1-6-5-4-5-5-4
4200 to	4210	3-4-3-4-3-3-3-3-3-3
	4220	4-5-5-5-6-5-4-4-4-4
	4230	5-5-5-5-4-5-5-6-4-6
	4240	7-7-6-7-6-8-6-6-5-5
	4250	5-5-5-5-4-5-5-6-5-7
	4260	6-5-6-6-5-6-6-6-4-7
	4270	5-6-6-6-6-6-6-6-5-7
	4280	6-6-5-4-5-5-5-4-3-5
	4290	6-6-6-9-9-6-4-4-4-4
	4300	4-6-5-5-6-6-5-5-6-5
4300 to	4310	6-6-6-7-4-4-5-5-4-4
	4320	6-5-3-3-5-5-5-5-5-4
	4330	5-4-4-3-4-3-3-5-6-5
	4340	6-6-7-5-7-5-5-6-5-7
	4350	6-6-6-7-5-6-6-5-5-6
	4360	5-5-6-5-4-5-6-5-5-4
	4370	5-4-5-6-6-3-5-4-4-4
	4380	7-6-5-6-6-5-6-5-5-5
	4390	6-4-4-4-4-5-4-4-5-5
	4400	4-5-6-7-6-5-4-4-2-2
4400 to	4410	3-2-3-2-3-3-3-3-4-5
	4420	5-4-4-5-4-5-4-4-5-5
	4430	4-5-6-8-9-7-9-9-9-6
	4440	6-6-6-5-7-5-7-9-7-9
	4450	8-8-6-6-4-6-5-5-5-5
	4460	5-6-5-6-6-6-7-6-6-6
	4470	5-5-6-6-5-6-5-6-5-7
	4480	9-7-5-6-6-7-6-5-7-8
	4490	7-7-6-5-7-6-8-7-8-7
	4500	8-9-6-7-8-5-5-5-5-5

4500 to 4510	5-5-5-7-8-7-9-9-5-4
4520	6-7-9-6-5-5-5-5-4-4
4530	4-4-6-4-5-4-4-4-5-5
4540	6-5-4-5-6-6-6-5-5-5
4550	5-5-5-5-5-7-5-6-5-6
4560	6-6-8-8-9-6-5-5-5-5
4570	4-6-5-4-5-6-8-6-3-4
4580	8-7-6-5-4-4-4-4-4-7
4590	6-6-5-5-5-5-6-4-5-7
4600	6-5-5-6-6-5-4-5-6-5
4600 to 4610	4-6-6-5-4-5-5-6-2-2
4620	2-6-7-6-5-6-7-7-6-5
4630	9-6-7-9-8-7-6-6-8-6
4640	5-6-6-5-6-6-6-5-8-9
4650	8-8-7-7-6-6-5-5-6-4
4660	5-5-5-5-5-5-5-6-3-3
4670	4-3-4-4-4-5-4-5-4-5
4680	4-3-5-4-4-3-4-4-3-3
4690	3-3-4-3-5-3-3-4-2-3
4700	3-3-3-4-4-4-2-3-3-3
4700 to 4710	5-3-4-5-4-5-9-8-5-1
4720	½-½-½-½-½-½-½-½-½-1
4730	1-1-1-2-2-1-2-2-3-2
4740	2-5-3-2-3-3-4-2-1-1
4750	1-2-3-2-2-4-4-3-4-5
4760	5-5-5-7-6-6-6-5-5-5
4770	5-4-4-5-7-6-6-6-6-6

RTD 4770