

15 - 15 - 20136-0001
35-27-13W
T. G. WRIGHT
CONSULTING GEOLOGIST
805 WICHITA PLAZA
WICHITA, KANSAS 67202

November 5, 1969

GEOLOGICAL WELL REPORT

✓ William Gruenerwald & Associates, Inc.
✓ #1 Lunt C SE NE Section
✓ 35 - T 27S - R 13W., Rolingson
Pool, Pratt County, Kansas
Contractor: Garvey Drilling Co. Rig #19
Spud: October 19, 1969
13 3/8" Surface casing @ 205'
7" Production casing @ 4472'
(Electric Log measurement)
Rotary Completion: November 4, 1969
Total Depth: 4675' (Rotary)
4666' (E. Log)

William Gruenerwald & Associates, Inc.
P. O. Box 909
Colorado Springs, Colorado 80901

Gentlemen:

Listed below are the pertinent geological tops, a description of all cores cut, and an evaluation of the porosities encountered below the top of the Lansing - Kansas City.

I arrived at the location at a depth of 4275', after having previously visited the location to determine the top of the Lansing, and witnessed the operation from 4275' to 4675' T.D. Samples were examined from 3700 - 4675' T.D. The hole was logged electrically before being cased, electric log data included herein.

Enclosed herewith is a copy of the plotted drilling time log which includes lithology, porous zones, geologic tops and other pertinent data.

ELECTRIC LOG TOPS

ELEVATION	1890 K.B.
HEEBNER	3581 (-1691)
BROWN LIME	3757 (-1867)

LANSING-KANSAS CITY	3778	(-1888)
BASE OF KANSAS CITY	4129	(-2239)
MISSISSIPPIAN CHERT	4233	(-2243)
VIOLA CHERT	4292	(-2402)
SIMPSON	4336	(-2446)
Dolomite	4347	(-2457)
Sand	4372	(-2482)
Base of Sand	4394	(-2504)

Note: See core descriptions below for Simpson lithology.

ARBUCKLE	4456	(-2566)
----------	------	---------

4468-84 Dolomite, buff, coarsely crystalline, zones of good cavernous porosity, no show of oil.

4518-4675 T.D. Dolomite, tan to buff, coarsely crystalline, in part cherty, good sections of cavernous and inter-crystalline porosity. Considered adequate for salt water disposal purposes.

TOTAL DEPTH:	4675'	Rotary
	4666'	E. Log

DIAMOND CORES

Note: When referring depths from core descriptions to electric log a nine foot correction must be considered. All core measurements must be corrected by nine feet up the hole to correlate directly with the electric log.

<u>DIAMOND CORE #1</u>	4337-89	Full recovery
------------------------	---------	---------------

4337-38	Shale, dark, gray, hard, compact
4338-39	Limestone, coarsely crystalline, pinkish buff.
4339-40	Soft, gray clay-like material, badly leached.
4340-42	Limestone, buff, coarsely crystalline.
4342-43	Dolomite, hard, dense, greenish-thin intermingled green shale.
4343-44	Green, shaley, sandy, dolomite.
4344-45	Sandy bright green shale with very thin sand lenses. Minor bleeding of dark oil.
4345-54	Bright green compact shale, thin sand lenses, occasional dirty green dolomite. Pin-point dark oil bleeding throughout this section.

4354-57 Sandstone, white, medium grained, lime-cemented, minor green shale inclusions, streaks of dark oil bleeding and oil staining.

4357-60 White, rounded medium grained lime-cemented sand stone.

4360-62 White very calcareous sandstone as above.

4362-63 Brown very coarsely crystalline limestone.

4363-64 Sandy, buff, finely crystalline calcareous dolomite.

4364-66 Dolomite, brown calcareous, finely crystalline, to dense.

4366-69 Brown lithographic limestone.

4369-73 Shale black, compact, hard.

4373-75 Shale black, thin sandy streaks, pyritic.

4375-76 Gray, hard sandstone, quartzitic.

4376-79 Black, compact shale, thin sandy lenses, minor bleeding.

4379-80 Sandstone, white, medium fine, clean, very compact, tight.

4380-81 Sandstone, white, medium fine, clean, compact, vertically fractured, free oil in fractures.

4381-85 Sandstone, medium fine, fairly friable, clean, vertically fractured, completely oil stained, bleeding free oil, particularly in fractures. Fair porosity.

4385-87 Sandstone as above, but less porous, more spotty staining.

4387-88 Sand as above, intermingled with twisted gray shale, no stain.

4388-89 Fine, white sandstone, streaked oil staining, minor "show of oil".

DIAMOND CORE #2 4389-93 (core jammed) Full recovery.

4389-93 Sandstone, white, hard, compact, medium fine, almost quartzitic, vertically fractured, occasional paper-thin dark shale.

DIAMOND CORE #3 4393-4419 Full recovery.

4393-95 Sandstone, white, fine, friable, light gray, mottled appearance due to irregular shale inclusions, low porosity and permeability. No show.

4395-97 Sandstone, white-gray, compact, hard, tight, almost quartzitic, vertically fractured.

4397-4400 Gray mottled, sandy shale. Mottled appearance due to irregular inclusions of fine white sandstone.

4400-02 Fine, hard, compact, light gray, almost quartzitic sandstone. Thin irregular, dark shale partings.

4402-04 Shale, dark green, very compact and hard.

4404-05 Sandstone, dark gray, coarse, angular, glassy, loaded with phosphatic pebbles.

4405-06 Sandstone, light gray, silty, dirty.

4405-09 Shale, dark green, compact, hard.

4409-11 Sandstone, dark gray, phosphatic, dirty, medium coarse, angular.
4411-12 Very coarse phosphatic pebbles in matrix of dirty, gray, sandstone.
4412-13 Shale, dark green, compact, hard.
4413-14 Dirty, gray, phosphatic sandstone.
4414-15 Dark green shale.
4415-16 Dark green shale included coarse phosphatic pebbles.
4416-19 Gray, sandy shale, coarse phosphatic pebbles.

Conclusions and Recommendations

Structurally the #1 Lunt is the lowest well on the Simpson Sand yet drilled in the area. This well is 16 feet lower on the Sand than your #2 H. Gibbons, one location south and 9 feet lower than the Clinton Oil dry hole, a diagonal southwest offset. Not only is the well lower structurally, but the sand "pay" thickness has thinned to five to six feet as compared to your #2 H. Gibbons to the south with 12 to 13 feet. Actually the quality of the "show" within the sand is not too bad, but the lower structural position and the thinner "pay" section is not encouraging.

It is recommended that after successful completion of the hole for salt water disposal in the Arbuckle, an attempt be made within the Simpson Sand to complete as an oil well, suggesting one 4-way shot at 4375', electric log measurement, followed by a frac treatment. It is felt that with stimulation this hole might yet be commercial in the Simpson Sand.

7 inch casing was landed near the top of the Arbuckle. It is believed that adequate salt water disposal facilities may be acquired by drilling the plug and acid treating the Arbuckle section in the open hole. This work should be done before attempting to test the Simpson Sand.

Yours very truly,

T. G. Wright

TGW:wlr

Log Analysis



COMPANY Wm Gruenerwald & Associates Inc						WELL Lunt No. 1	
COUNTY Kansas						STATE Kansas	

DEPTH	RW	N Matrix	PG	Pf	Φ _N	Φ _D	P _H	% POROSITY (GROSS)	% WATER	REMARKS
72-73	.06	Lime-Lig	2.71	1.05	5	10.5	17	7.3	85	Simpson sd
73-74					3	9.5	24	5.5	95	
74-75					3.5	11	25	6.5	78	
75-76					2.5	6.5	22	4.0	100	
76-77					3	7.5	18	5.0	100	
77-80					3-5	11	13-14	6.5-7.5	87-95	
467-69					6	-1		5		Arbuckle Dolo
472-75					7.5	3		6.5		
478-80					6	-1		5		
4532-36					11	3		9		
4555-58					11	4		9.5		
4467-90					4-7	-6-2		2.5-6.5		
4525-37					4-11	-6-3		3-9		
1545-34					4-11	-8-6		2-10		
1584-93					4-7	-8-1		2-6		

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to Clause 7 of our General Terms and Conditions as set out in our current Price Schedule.

DATE 4-3-69	LOCATION Wichita	ENGINEER E. J. Schenk
----------------	---------------------	--------------------------

BIT RECORD

8 5/8" hole

Security	S3SJ	205-1970
Security	S4T	1970-2360
Security	S4T	2360-2945
Security	S4TJ	2945-3388
Security	S4TJ	3388-3794
Security	M4N	3794-4044
Security	M4N	4044-4195
Security	H 7	4195-4337
	Diamond Core	4337-Core
	Diamond Core	4419-Bot. of Core
Security	H7G	4337-4391 (reaming)
Security	H7G	4391-4419 (reaming)
Security	H7	4419-4538
Security	H7	4538-4625
Security	H7	4625-4675 T.D.

DRILLING PROGRESS

10-19	Spud	
10-20	205	WOC
10-21	1625	
10-22	2205	
10-23	2680	
10-24	3150	
10-25	3500	
10-26	3820	
10-27	4044	
10-28	4180	
10-29	4337	
10-30	4383	
10-31	4398	
11-1	4391	reaming
11-2	4497	
11-3	4625	T.D. Logging
11-4	4675	T.D. Casing
11-5	4675	T.D. W.O.C.