September 14, 1965

Re: GEOLOGICAL WELL REPORT
William Gruenerwald & Associates Inc.
#1 Hillard, C NW SE
Section 1-T28S-R13W, Wildcat
Pratt County, Kansas
Contractor: Garvey Drilling Co.
Spud: August 25, 1965
8 5/8" surface casing @ 699'
Completed as dry hole: Sept. 10,1965

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

Gentlemen:

Following are the pertinent geological tops, an evaluation of the porosities encountered and a record of all tests made at the captioned well.

I arrived at the location at a depth of approximately 3700 feet and witnessed the drilling to 3750 feet, at which point I left the operation, returning at 4260 feet. From this point the operation was witnessed to total depth 4348 feet.

Samples were examined from 3650 to 4348' total depth. The hole was logged electrically before abandonment, electric log data included herein.

Enclosed herewith is a copy of the plotted drilling time log which also includes lithology and other pertinent data.

Electric Log Tops

ELEVATION:	1825 K.B.
HEEBNER SHALE	3523 (-1698)
TORONTO	3540 (-1715)
DOUGLAS	3560 (-1735)
BROWN LIME	3710 (-1885)

LANSING-KANSAS CITY	3728 (-1903)	
3938-41	Limestone, buff, finely oolicastic, porous, no show.	
BASE OF KANSAS CITY	4084 (-2259)	
MISSISSIPPIAN "Chat"	4175 (-2350)	
VIOLA CHERT	4228 (-2403)	
SIMPSON	4289 (-2464)	
SAND	4324 (-2499)	
4324-4348	Sandstone, white, medium to medium fine, clustered to loose grains, clean, in part porous. Scattered oil stains in upper portion.	
WIRELINE TEST #1	4325½-28	
	Initial shut in pressure 2080#/23½ minutes. Open 1 hour, sampling pressure less than 50#. Tool failed to record final shut in pressure. Recovered 4600 cc of water, few specks of fluorescence, no oil or gas.	
TOTAL DEPTH	4348 (Rotary)	4344 (Electric Log)

Conclusions and Recommendations

In a structural comparison the critical control well is the dry hole Inger Oil Co. #1 Hillard, C SW NW Section 1, ½ mile northwest of the subject well. On the Pennsylvanian markers the subject well is essentially flat with the Inger dry hole. At the Mississippian this well is slightly higher than the Inger dry hole. At the Simpson Sand the subject well checks 9 feet lower than the Inger test. This structural relationship appeared condemning, particularly with the poor development of the Simpson Dolomite section which is considered a potential "pay horizon".

To further condemn the prospect the wireline test taken in the top of the Simpson Sand carried water which bears out a drill stem test made in the Inger dry hole at the relative zone.

It was recommended that the well be abandoned as a dry hole.

Yours very truly,

T. G. Wright

Wm. Gruenerwald & Assoc. #1 Hillard

Drilling Progress

8-25	Spud	
8-26	565'	
8-27	700'	
8-28	1795'	
8-29	2295'	
8-30	2760'	
8-31	2845'	SD
9- 1	2845'	SD
9- 2	3090'	
9- 3	3430'	
9- 4	3789'	
9- 5	3930'	
9- 6	4115'	
9- 7	4253'	
9- 8	4330'	
9- 9	4348'	Logging
9-10	4348'	TD D&A

Bit Record

Smith	DTJ	0- 700	
Smith	DTJ	700-1885	
Smith	SV2	1885-2345	
Smith	DT2G	2345-2845	
Smith	DT2T	2845-3135	
Smith	K2P	3135-3416	
Smith	SV1	3416-3789	
Smith	SV2	3789-3929	
Smith	L4	3929-4115	
Smith	L4	4115-4203	
Smith	4W4	4203-4260	
Smith	4W4H	4260-4298	
Smith	4W4H	4298-4341	
Smith	4W4H	4341-4348	TD

Log Analysis

SCHLUMBERGER

COMPANY: William Gruenewald & Associates Inc

WELL: Hilland #1

FIELD: Rolingson

COUNTY: Pratt, Kansas

R_w: .06

V_m OR ρ_g: 18,000

PLOT NO.	DEPTH	LOG DATA: ΔT OR ρ_B	LOG DATA: RESISTIVITY ~~(Rt)~~	LOG DATA: RESISTIVITY (R_{xo})	FORMATION OR RESERVOIR DATA: POROSITY (ϕ)	FORMATION OR RESERVOIR DATA: WATER SATURATION (S_w)	FORMATION OR RESERVOIR DATA: REMARKS
	4326-28	Simpson	m=1.8	d_i=3	7	70	
	4328-33	Simpson	Sd.		10	80	Shaly
	4333-36	Simpson			7	80	
	4336-39				5	—	
	4239-43	V_m=19,500	m=1.9	d_i=3	10-11	100	Viola Chert
	43-50	R_w=.06			10-11	60	
	3984-88	V_m=21,000	~~Rt~~ m=2.0	d_i=3	12-13	65	Chalky
	88-92	R_w=.09			6	100	

"This interpretation represents our best judgment. Nevertheless, since all interpretations are opinions based solely on inferences from electrical or other measurements, we cannot and do not guarantee the accuracy or correctness of any interpretation and shall not, except in the case of willful negligence on our part, be liable or responsible for any loss, damages, or expenses that may be incurred or sustained resulting from this or any other interpretations."

DATE: 9-9-65

SCHLUMBERGER LOCATION: Wichita

ENGINEER: Jerry L Thompson

SWSC-1229-A

SCHLUMBERGER WELL SURVEYING CORP.

INITIAL FIELD REPORT

on results from the

Wire Line Formation Tester

COMPANY WILLIAM GRUENERWALD & ASSOC., INC. WELL NAME HILLARD #1

LOCATION C-NW-SE SEC 1-28S-13W COUNTY PRATT STATE KANSAS

Test Depth 4325½-28 Formation SIMPSON Test No. ONE Date 9-9-65

PRESSURES AND TIMES

Maximum Initial Shut In Pressure 2080 In 23 Min. 35 Sec. Total Initial Shut In Time 30 Min

Tool Open 60 Min. Sampling Pressure LESS THAN 50 PSI Hydrostatic Pressure 2330

Maximum Final Shut In Pressure *NOT MEASURED In — Min. — Sec. Total Final Shut In Time 20 Min

Recoveries	% Wtr. Cut	
FREE Gas 0 cu. ft.		Shot Gas 1.1 cu. ft
Dist. 0 c.c.	Rrf .093 @ 100° F	Solution Gas 0 cu. ft
Oil FEW SPOTS OF FLUORESCENCE c.c.	Rmf 0.08 @ 100° F	Free Gas 0 cu. ft
Wtr. 4600 c.c.	% Cut with Formation Wtr. —	Total Gas 1.1 cu. ft
Mud 0 c.c.		
Sand 0 c.c.	Rw Value Used 0.06 C 100° F	

PRODUCTION FROM THIS INTERVAL WILL BE WATER.

FEW SPECKS OF FLUORESCENCE ON RECOVERED WATER.

NO FREE GAS RECOVERED.

* PACKER LEAKED TO HYDROSTATIC DURING FSIP PERIOD.

GOR. GRAVITY API. C 60° F

TYPE TOOL 5¼" Sample Chamber 6 Gal | SHOT 4-1⅛" SC CHOKE NONE

3785 c. c. Equals One Gallon

Water Saturation 70 %

Log Analysis Results

Porosity 7 %

Signed Fred C. Morgan SWSC