

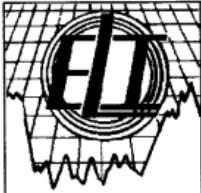
**W. R. Williams
Hager 2
Sec. 32-20S-40W
Greeley Co, Ks.
15071208310000**

U. Winfield Sand –

Moving “Gas Effect”

Subsurface Nomenclature

System	Series	Group	Panhandle Field	Hugoton Field
P E R M I A N	Leonard	Sumner	Red Cave	Red Cave
			Panhandle Lime evaporite	Wellington evaporite
	Wolfcamp	Chase	Brown Dolomite	Herington
			White Dolomite	Kriger
			Moore County Lime	Winfield
			Arkosic Dolomite	Towanda
			Arkosic Lime	Fort Riley
			Granite Wash	Wreford
			Granite PC	A (Funston)
			Granite PC	B1 (Crouse)
			Granite PC	B2-B3 (Bader)
			Granite PC	B4-B5 (Beattie)
Pennsylvanian	Virgil	Council Grove	C (Neva)	
		Admire	Admire	
		Wabaunsee	Wabaunsee	
		Shawnee	Shawnee	



**ELI
WIRELINE
SERVICES**

COMPENSATED DENSITY / NEUTRON LOG

W.R. WILLIAMS, INC
HAGER #2
BRADSHAW
GREELEY
KANSAS

Company W.R. WILLIAMS, INC
Well HAGER #2
Field BRADSHAW
County GREELEY State KANSAS

CONFIDENTIAL

Location: API #: 15-071-20831 Other Services

C 512 NE NE NW
495' FNL & 2310' FWL

SEC 32 TWP 20S RGE 40W

Permanent Datum GROUND LEVEL Elevation 3592
Log Measured From KELLY BUSHING 6' A.G.L. Elevation 3598
Drilling Measured From KELLY BUSHING Elevation 3592

Date	8 / 14 / 05	
Run Number	ONE	
Depth Driller	2823	
Depth Logger	2833	
Bottom Logged Interval	2830	
Top Log Interval	1850	
Casing Driller	296	
Casing Logger	NA	
Bit Size	7 7/8	
Type Fl.	CHEMICAL MUD	CHLORIDES 6000 PPM
Dens.	8.7 / 45	
pH / F	10.5 / 8.8	
Source of Sample	FLOWLINE	
Rm @ Meas. Temp	.90 @ 89F	
Rmf @ Meas. Temp	.68 @ 89F	
Rmc @ Meas. Temp	1.08 @ 89F	
Source of Rmf / Rmc	MEASUREMENT	
Rm @ BHT	.59 @ 105F	
Time Circulation Stopped	2 HOURS	
Time Logger on Bottom		
Maximum Recorded Temperature	105F	
Equipment Number	153	
Location	HAYS, KANSAS	
Recorded By	MIKE KUCERIK	
Witnessed By	ROB WILLIAMS	BOB GADDIS

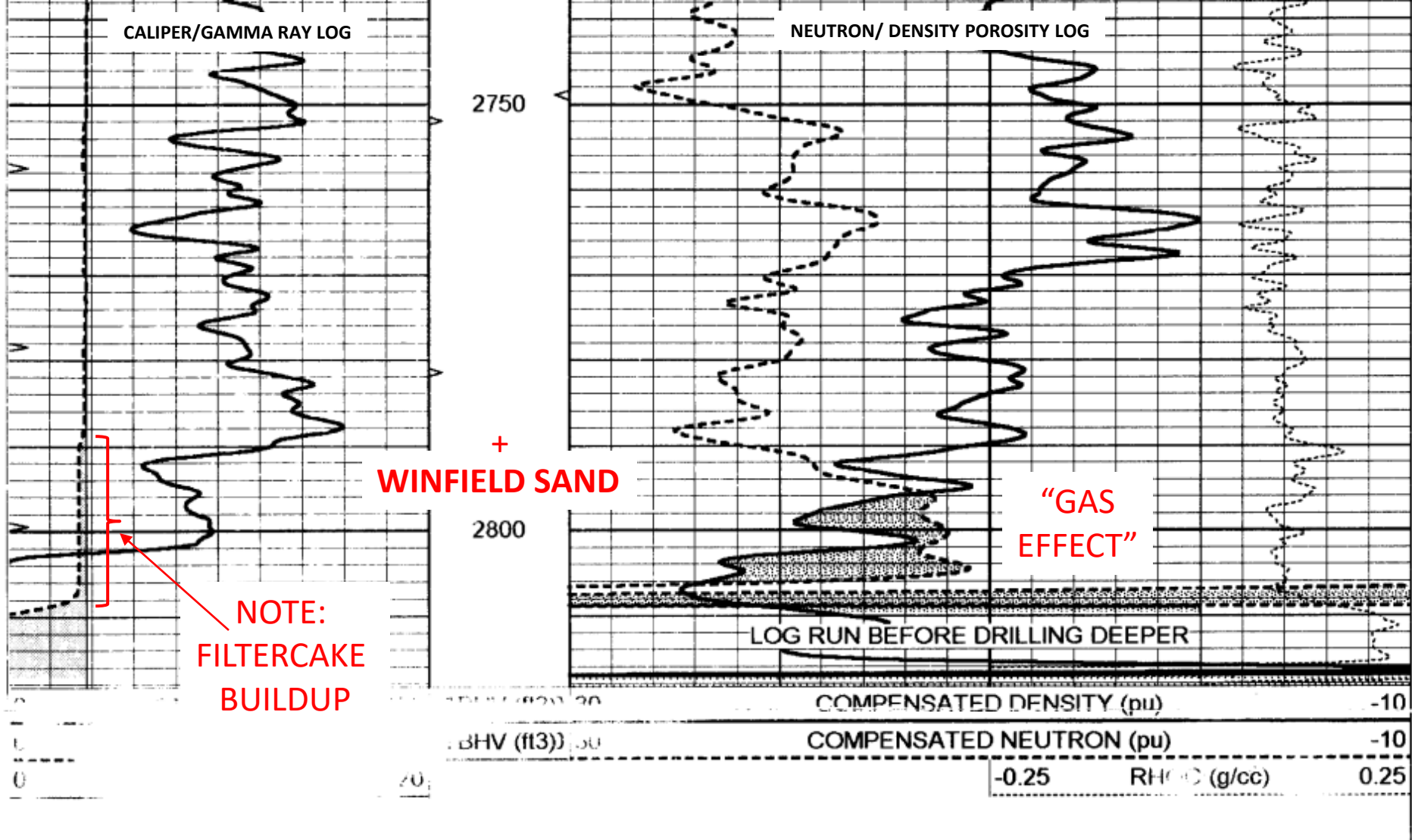
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**NORMALLY IN THIS FIELD, ONLY THE
NEUTRON/DENSITYLOG IS RUN-**

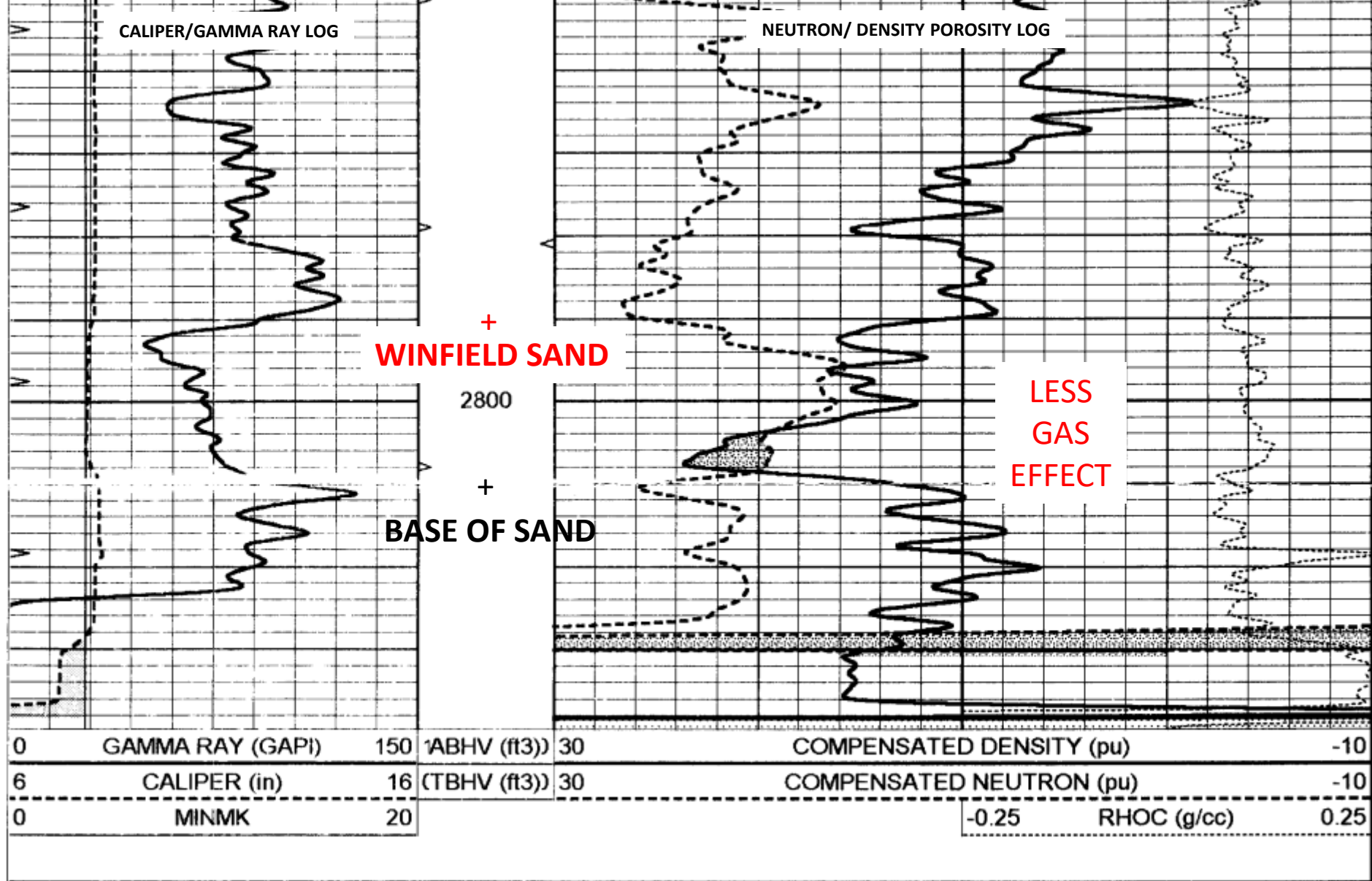
**IF WE HAVE "GAS EFFECT",
WE COMPLETE THE WELL.**

**BUT, DON'T DRILL TOO DEEP- THE
NEXT SAND (FT. RILEY) IS "WET".**

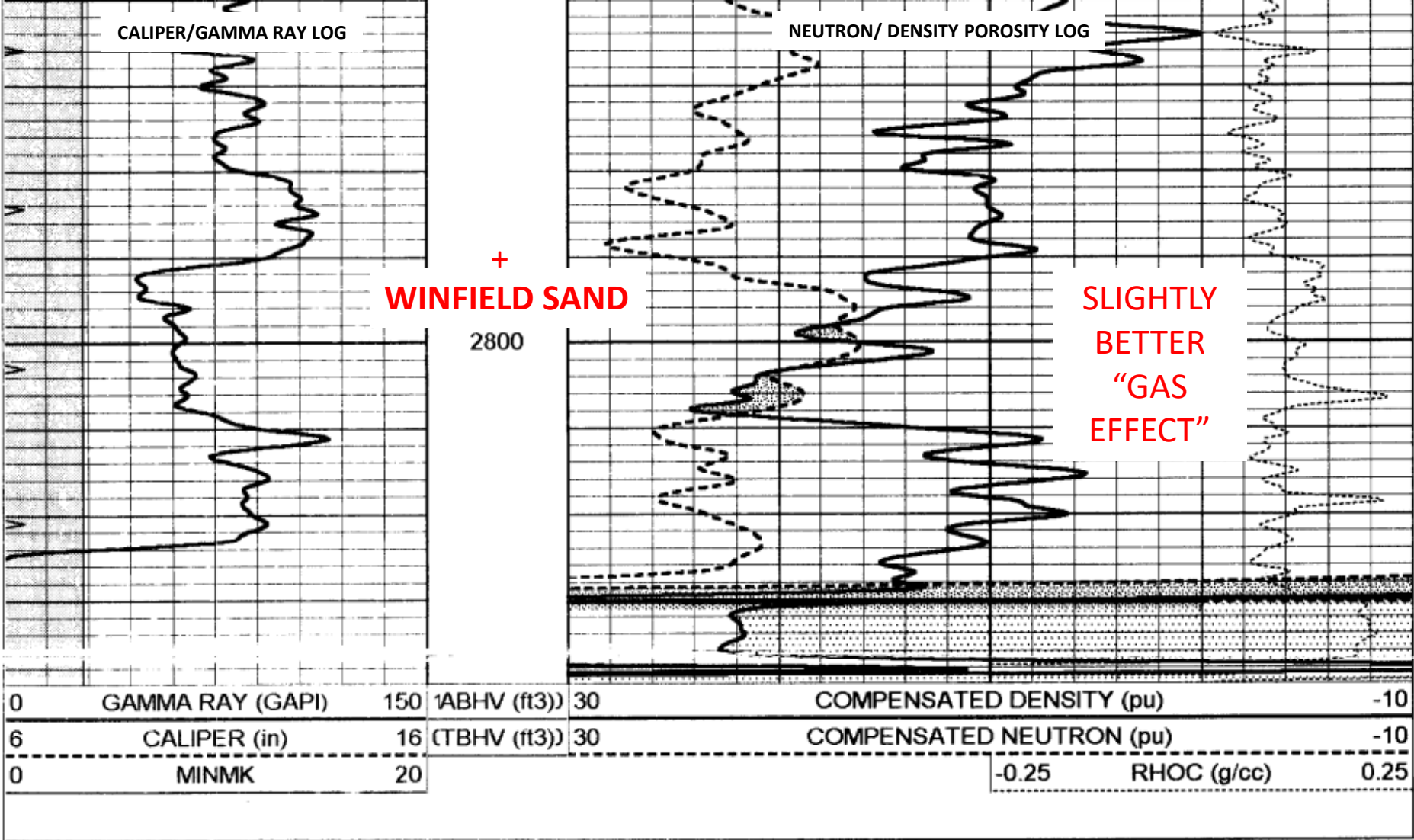
**THE PROBLEM IS---
HOW MUCH IS TOO DEEP?**



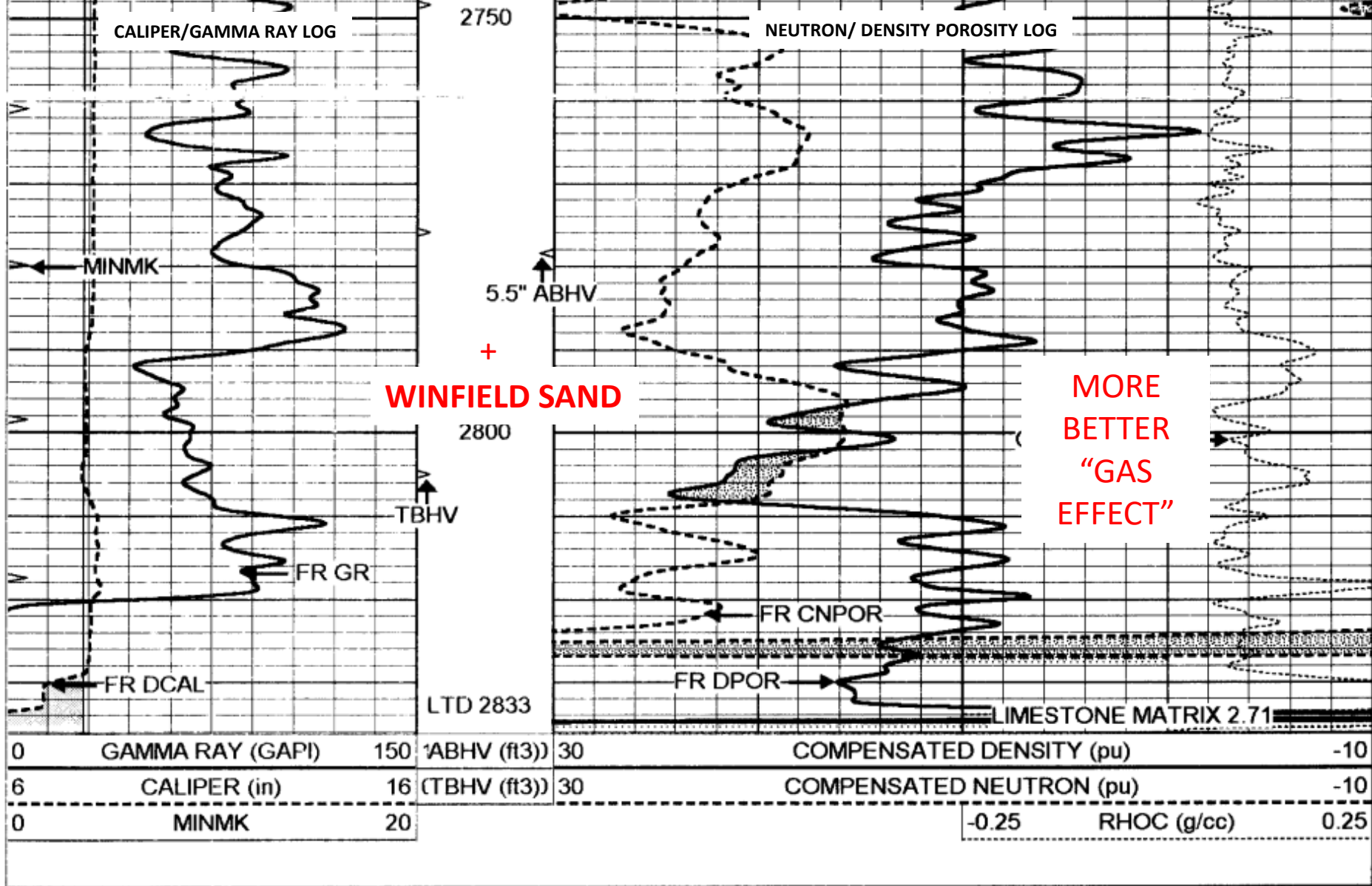
YEA!
BUT NOT QUITE DEEP ENOUGH-
WE WANT TO SEE THE BASE OF THE SAND
SO DRILL ANOTHER 15'.



RE-LOG AND NOW WE CAN SEE THE BOTTOM OF THE SAND, BUT---



RE-LOG AGAIN AND SOME TIME HAS PASSED---



**RE-LOG AGAIN AND MORE TIME HAS PASSED.
LET'S RUN PIPE.**



Bob Gaddis

Certified Petroleum Geologist Certified Professional Geologist

August 14, 2005

W. R. Williams, Inc.
Hager 2
Sec. 32-20S-40W
Greeley Co., Kansas

Gentlemen:

The captioned well was successfully drilled to a total depth of 2833' with the Upper Winfield Sand being the target. The rig had set 8 5/8" surface casing to 297'.

The openhole logs show the Anhydrite to be at 1704' to 2170' and the Stone Corral is at 2318' to 2403'. We found the Chase Marker at 2751' and the top of the Upper Winfield Sand at 2790'.

Initially, we had drilled to 2811' and ran our openhole neutron/density log. At this depth, we were unable to see the base of our sand with the log but the sand showed 23-25% density porosity with good "gas effect". The decision was made to drill 14 additional feet. We re-entered the borehole with the drillstring, deepened the well and conditioned the hole before tripping out and re-logging.

The total depth of the second logging run turned out to be 2833'. The subsequent logging indicated the repetition of the density porosity but we had lost our "gas effect". By running multiple 'repeats', it was evident our 'gas effect' was slowly returning. Our re-entry to drill additional footage and then circulating had apparently pushed our gas away from the wellbore. The repeated logging runs at total depth (2833') gave us a "time-lapse" as the gas returned to the wellbore.

The openhole log shows the Upper Winfield Sand to have a gross interval of 20' and 10' with greater than 16% density porosity that reaches 24%. The initial logging run also gave us a good "gas effect".

I recommend running production casing and testing this sand.

Respectfully,

Bob Gaddis
CPG #3173, #7848

AN OPENHOLE LOG IS A SNAPSHOT IN TIME.

**GEOLOGY IS A DYNAMIC SYSTEM WITH FLUIDS
(OIL, GAS, WATER) MOVING THROUGH THE
PERMEABLE ROCK.**

**GRANTED, GEOLOGIC TIME IS GENERALLY VERY SLOW
(REALLY SLOOOOOW).**

**HERE WE ARE WITNESSING FAIRLY RAPID CHANGES
WITHIN THE ROCK.**

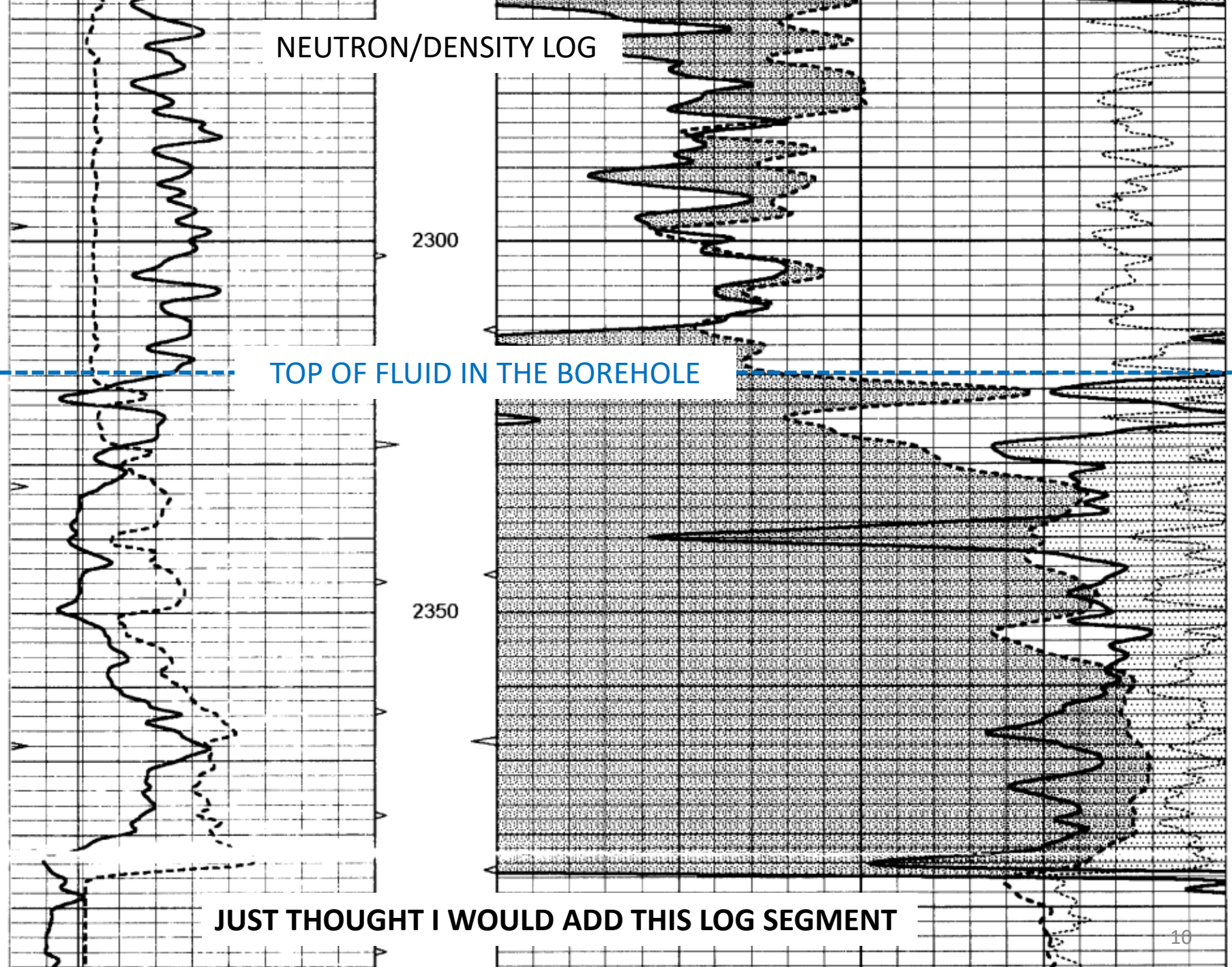
NEUTRON/DENSITY LOG

2300

TOP OF FLUID IN THE BOREHOLE

2350

JUST THOUGHT I WOULD ADD THIS LOG SEGMENT



“GAS EFFECT”

Viewing a neutron/density porosity open-hole log, a “clean” water sand (water filled) will appear to have good “gas effect”. Actually, with the usual logging parameter of 2.71 g/cc limestone matrix on the on the neutron/density tool, the log curves are illustrating “crossover” of the neutron and density curves. The neutron curve to the right of the density curve.

Further, deeper analysis of the information all the curves contain (porosities, borehole corrections, multiple resistivities, GR, SP, etc) plus core analysis (if available), formation fluids, etc is needed to determine “real” gas effect.

Until this full analysis can be completed, think “cross-over”.

Bob Gaddis

Petroleum Geologist