RESERVOIRS, INC. CORE ANALYSIS DATA

Gemini Corporation Silver Farms #4-1621 Well

4214-4240 feet

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Gemini Corporation Silver Farms #4-1621 Well

4214-4240 feet

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RESERVOIRS, INC. CORE ANALYSIS DATA

File No. RMD843/DRC092

Company Gemini Corporation

Date November 17, 1984

Well Silver Farms #4-1621

Field

Interval 4214-4240 feet

Location Sec. 21, T.4N., R.34W.

County Hitchcock

State Nebraska

Sample Number	Sample Depth (ft.)	Porosity* (%)	Fluid Saturations Water (%)	Fluid Saturations Oil (%)	Perm. (md)	Grain Density (gm/cc)	Description
	4214-19	no samples					
1	4219-20	20.3	36.3	21.1	1100.0	2.72	Limestone, very light gray to dark brown, earthy, oolitic, sparry calcite, fossiliferous, heavy hydrocarbon stain, slight odor, very good moldic porosity.
2	4220-21	21.3	31.5	26.5	100.0	2.71	Limestone, very light gray to dark brown, earthy, oolitic, peloidal, sparry calcite, fossiliferous, heavy hydrocarbon stain, slight odor, very good moldic porosity.
3	4221-22	27.0	34.6	22.3	1200.0	2.70	Limestone, medium to dark brown, earthy, oolitic, fossiliferous, heavy hydrocarbon stain and odor, very good moldic porosity.
4	4222-23	20.9	23.4	23.4	130.0	2.71	Limestone, light to dark brown, earthy, oolitic, sparry calcite, fossiliferous, stylolitic, heavy hydrocarbon stain and odor, good moldic porosity.
5	4223-24	20.8	32.7	26.9	260.0	2.70	Limestone, light to dark brown, earthy, oolitic, peloidal, fossiliferous, heavy hydrocarbon stain, slight odor, very good moldic porosity.
6	4224-25	2.9	13.2	13.2	0.10	2.69	Limestone, light gray to medium brown, microcrystalline, moderately dense, slightly oolitic, hydrocarbon stain and odor, slight moldic porosity.
	4225-28.5	no samples					Dense limestone.

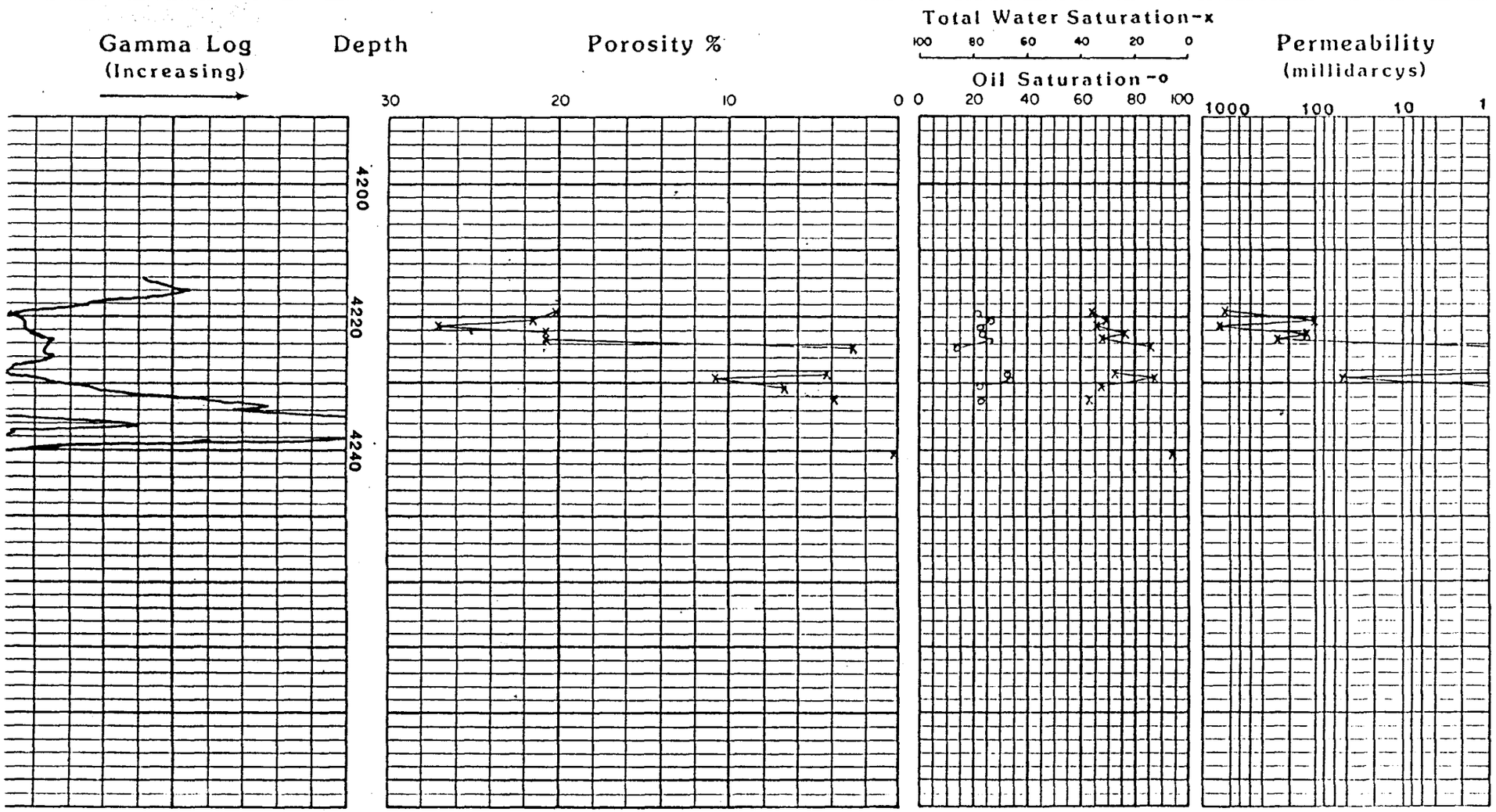
Sample Number	Sample Depth (ft.)	Porosity* (%)	Fluid Saturations Water (%)	Fluid Saturations Oil (%)	Perm. (md)	Grain Density (gm/cc)	Description
7	4228.5-29	4.3	27.6	32.2	0.09	2.68	Limestone, gray-brown to medium brown, microcrystalline to fine crystalline, sparry calcite, dense, hydrocarbon stain and odor, slight moldic porosity.
8	4229-30	10.7	12.1	33.9	44	2.71	Limestone, gray-brown to dark brown, microcrystalline, sparry calcite, calcite crystals filling vugs, hydrocarbon stain and odor, good moldic porosity.
9	4230-31	6.7	32.5	21.6	0.47	2.70	Limestone, gray-brown to medium brown, microcrystalline, sparry calcite, fossiliferous (brachiopods), hydrocarbon stain, slight moldic porosity.
	4231-32	no samples					Dense limestone.
10	4232-33	3.9	38.8	22.8	0.10	2.70	Limestone, gray-brown to dark brown, microcrystalline, sparry calcite, large vugs rimmed with calcite crystals, hydrocarbon stain, good moldic porosity.
	4233-40	no samples					Shale.
11	4240-40.5	0.12	6.2	0.0	0.03	2.69	Limestone, light gray, cryptocrystalline, sparry calcite, fossil fragments, dense.

*Boyle's Law
F = fractured

RESERVOIRS INC.
Laboratory Services

2369 S. Trenton Way, Suite "H"
Denver, CO 80231
303/695-0687 303/830-1986

Company: GEMINI CORPORATION
Location: Sec.21 T4N R34W
Well: SILVERFARMS #4-1621
Date: November 17,1984
Field: PALISADE PROJECT
Elevation: GR 2950
County: Hitchcock
Interval: 4214 to 4240.5
State: Nebraska
Page: 1 of 1 Pages



WELL FILE

N INDUSTRIES

McCullough Petro-Log

Dual Induction

COMPANY GEMINI CORPORATION

WELL SILVER FARMS #4-1621

FIELD PALISADE PROJECT

COUNTY HITCHCOCK STATE NEBRASKA

Location SE-SE

Sec. 21 Twp. 4N Rge. 34W

Other Services: CDL/N

Permanent Datum: GROUND LEVEL Elev. 2950

Log Measured From K.B. , 5.0 Ft. Above Perm. Datum

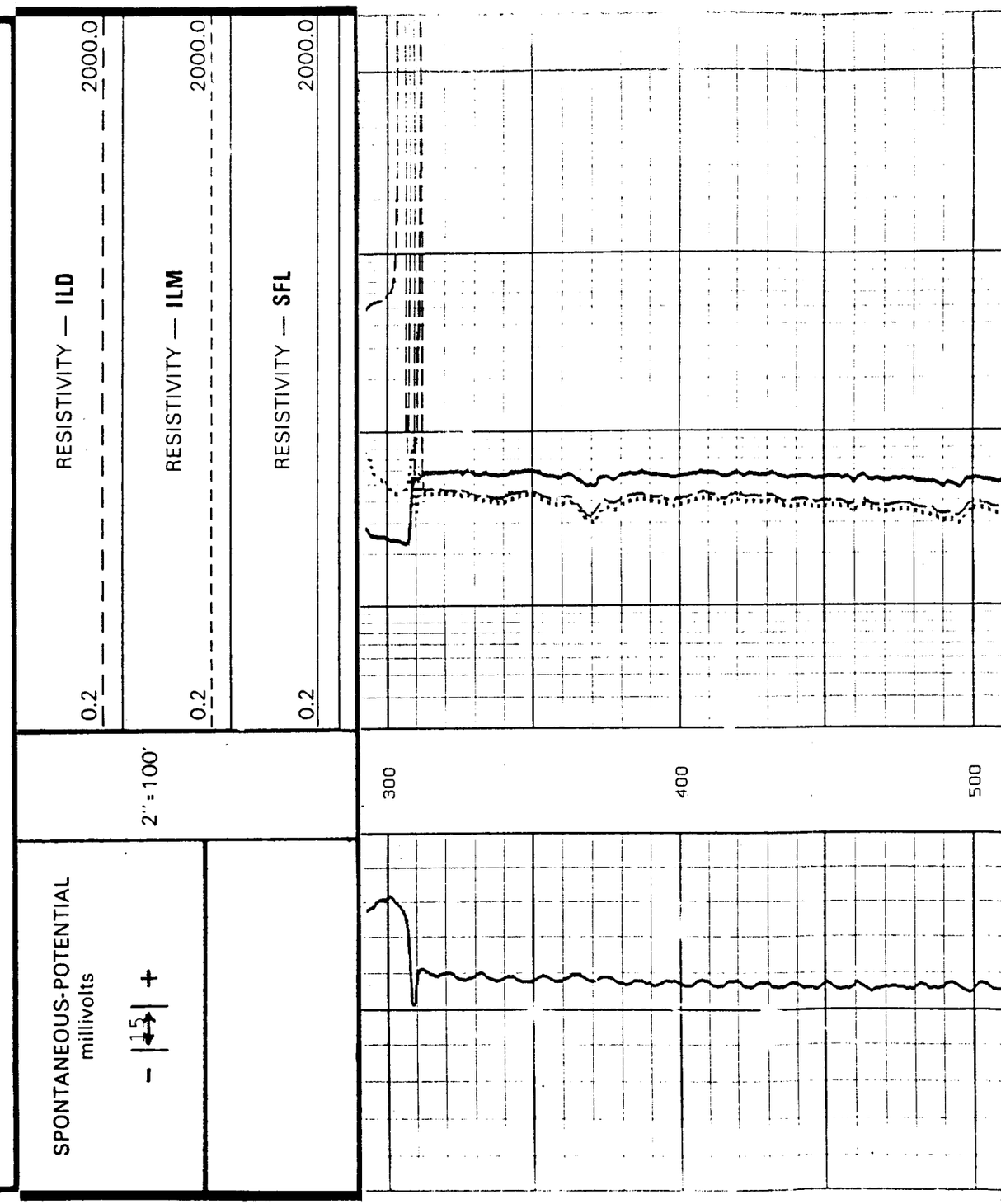
Drilling Measured From KELLY BUSHING

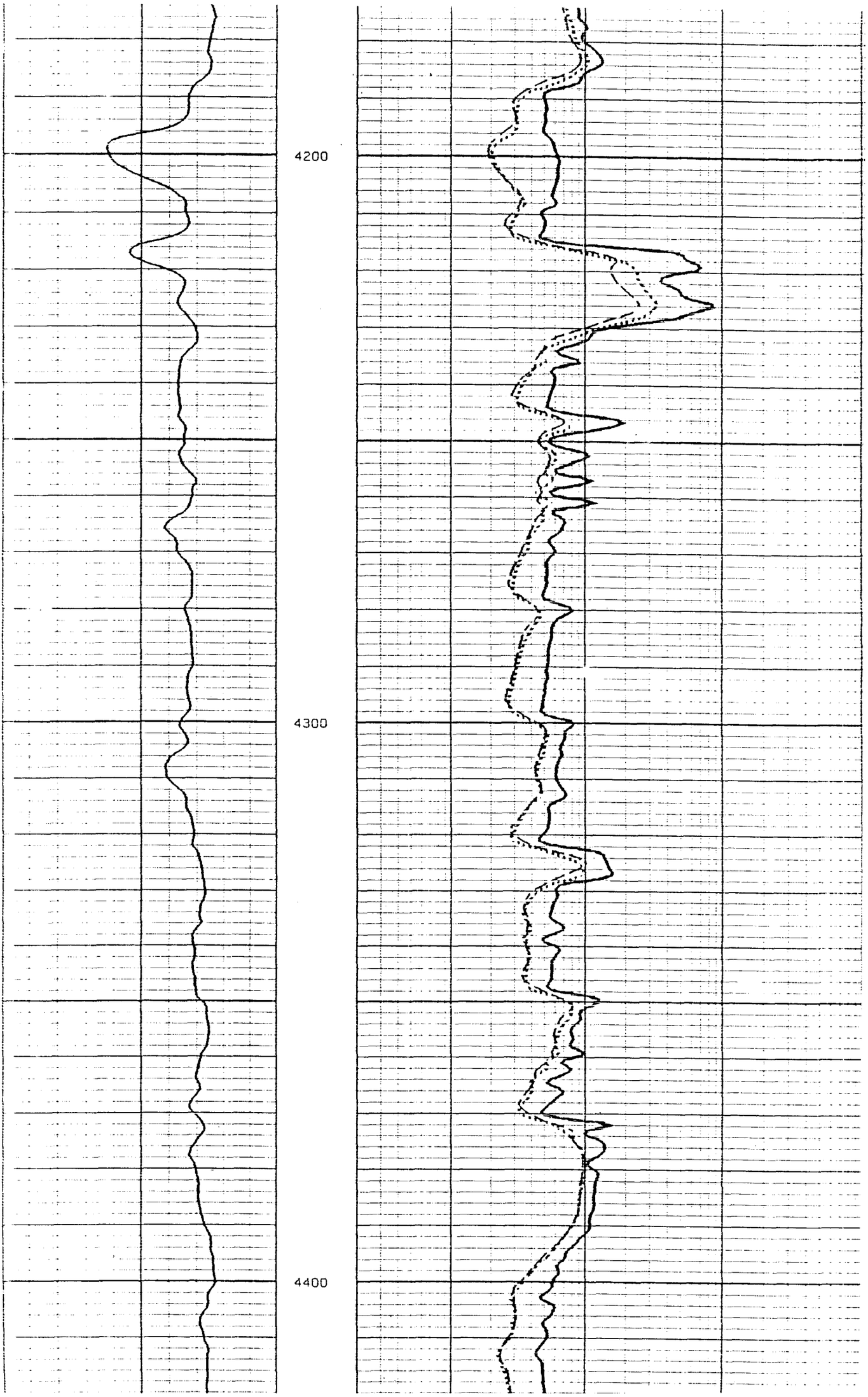
Elev.: K.B. 2955 D.F. G.L. 2950

Date	11-16-84			
Run No.	ONE			
Depth—Driller	4530			
Depth—Logger	4526			
Btm. Log Inter.	4525			
Top Log Inter.	306			
Casing—Driller	8 5/8 @ 306	@	@	@
Casing—Logger				
Bit Size	7 7/8			
Type Fluid in Hole	CHEMICAL			
Dens. | Visc.	9.4 | 54	|	|	|
pH | Fluid Loss	10.0 | 6.0 ml	| ml	| ml	| ml
Source of Sample	FLOWLINE			
R_m @ Meas. Temp.	2.6 @ 54 °F	@ °F	@ °F	@ °F
R_{mf} @ Meas. Temp.	1.95 @ 54 °F	@ °F	@ °F	@ °F
R_{mc} @ Meas. Temp.	3.90 @ 54 °F	@ °F	@ °F	@ °F
Source: R_{mf} R_{mc}	CHARTS	|	|	|
R_m @ BHT	1.2 @ 121 °F	@ °F	@ °F	@ °F
Time Since Circ.	5 HOURS			
Max. Rec. Temp.	121 °F	°F	°F	°F
Equip. | Location	84165 | OAKLEY	|	|	|
Recorded By	JIM PORTER & STEVE MAYERS			
Witnessed By	MR. JIM PRICE			

REMARKS

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.




4200
4300
4400

WELL FILE

N INDUSTRIES

McCullough Petro-Log

Compensated Density Compensated Neutron

Log Tops; DST; perfs, treatment

COMPANY GEMINI CORPORATION

WELL SILVER FARMS #4-1621

FIELD PALISADE PROJECT

COUNTY HITCHCOCK **STATE** NEBRASKA

Location SE-SE

Sec. 21 **Twp.** 4N **Rge.** 34W

Other Services: DIL

Permanent Datum: GROUND LEVEL Elev. 2950
Log Measured From K.B., 5.0 Ft. Above Perm. Datum
Drilling Measured From KELLY BUSHING

Elev.: K.B. 2955
D.F.
G.L. 2950

Date	11-16-84			
Run No.	ONE			
Depth—Driller	4530			
Depth—Logger	4526			
Btm. Log Inter.	4525			
Top Log Inter.	2800			
Casing—Driller	8 5/8 @ 306	@	@	@
Casing—Logger				
Bit Size	7 7/8			
Type Fluid in Hole	CHEMICAL			
Dens. | Visc.	9.4 | 54	|	|	|
pH | Fluid Loss	10.0 | 6.0 ml	| ml	| ml	| ml
Source of Sample	FLOWLINE			
R_m @ Meas. Temp.	2.6 @ 54 °F	@ °F	@ °F	@ °F
R_{mf} @ Meas. Temp.	1.95 @ 54 °F	@ °F	@ °F	@ °F
R_{mc} @ Meas. Temp.	3.90 @ 54 °F	@ °F	@ °F	@ °F
Source: R_{mf} R_{mc}	CHARTS	|	|	|
R_m @ BHT	1.2 @ 121 °F	@ °F	@ °F	@ °F
Time Since Circ.	2 HOURS			
Max. Rec. Temp.	121 °F	°F	°F	°F
Equip. | Location	84165 | OAKLEY	|	|	|
Recorded By	JIM PORTER & STEVE MAYERS			
Witnessed By	MR. JIM PRICE			

Equipment Data

Run No.	Tool No.	Source No.	Panel No.	Logging Unit	Location
ONE	0301	CSV A61	114	84165	OAKLEY, KS.

Calibration Data

Run No.	API Scale	Background CPS	Gamma Ray Std. CPS	Ds CPS AT	2.0	3.0	CDT Dt CPS AT	2.0	3.0

Logging Data

Run No.	Depths From	Depths To	Speed Ft/Min	GR TC
ONE	4525	2800	20	3

Remarks:

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 one of our officers, agents or employees.

BULK DENSITY GRAMS/CC: 2.0 — 2.5 — 3.0; -.25 — 0 — +.25

POROSITY $\rho_f = 1.0$ $\rho_g = 2.71$: 30 — 20 — 10 — 0

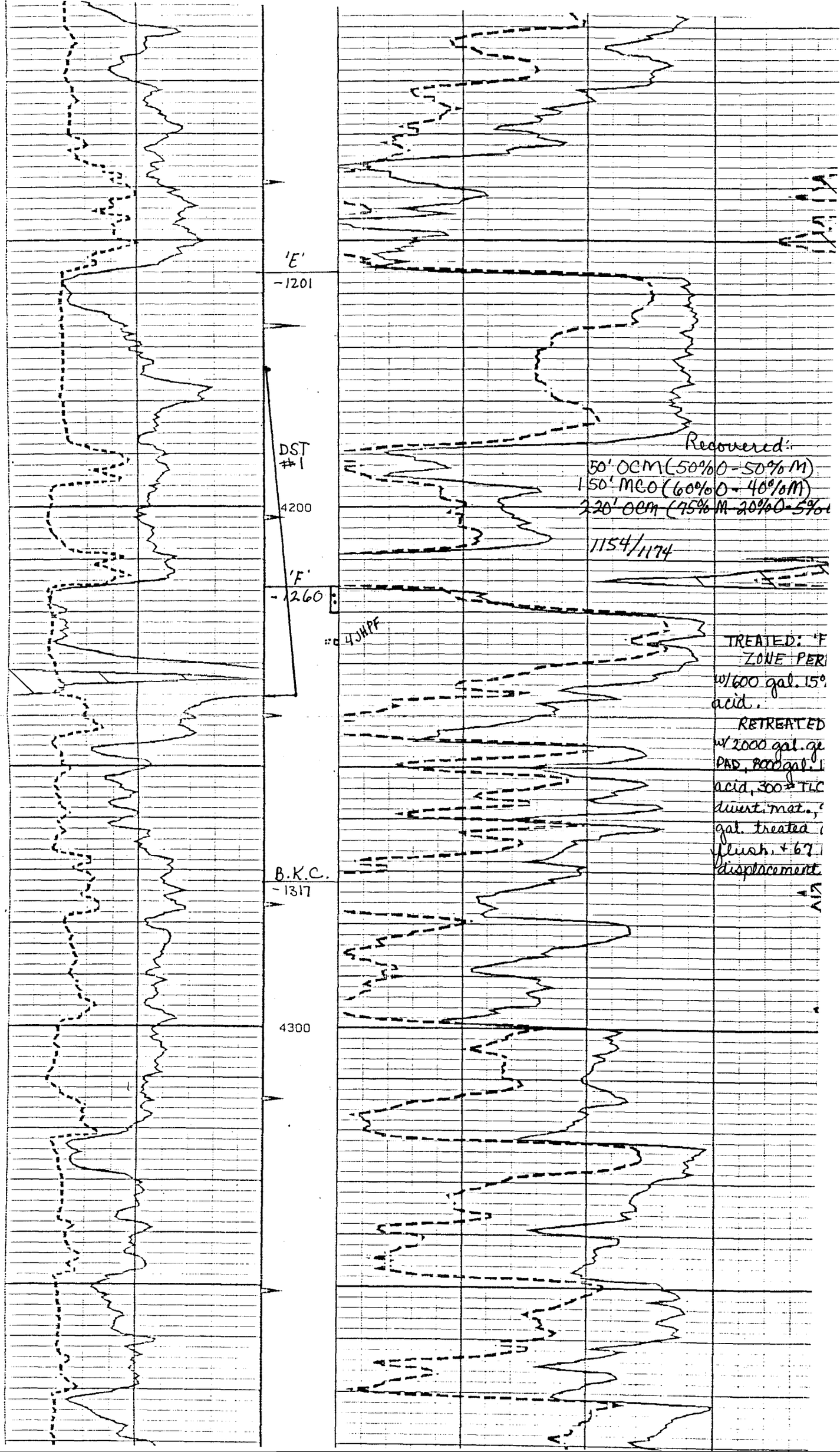
DEPTHS

GAMMA RAY API UNITS: 10 — 110; 110 — 210

CALIPER

HOLE SIZE - INCHES: 6 — 16

CASING OUTSIDE DIAMETER = 4.50
START DEPTH VOLUME = 4526.00
STOP DEPTH VOLUME = 0.00


'E'
-1201
DST
#1
4200
'F'
-1260
4JHPF
B.K.C.
-1317
4300
Recovered:
50' OCM (50%O-50%M)
150' MCO (60%O-40%M)
~~220' OCM (75%M-20%O-5%~~
1154/1174
TREATED: 'F
ZONE PER
w/600 gal. 15%
acid.
RETREATED
w/2000 gal. ge
PAD, 800 gal. 1
acid, 300# TLC
divert. mat.,
gal. treated
flush. + 67
displacement