KIM B. SHOEMAKER
CONSULTING GEOLOGIST
316-684-9709 * WICHITA, KS

GEOLOGIST'S REPORT
DRILLING TIME AND SAMPLE LOG

COMPANY: L.D. DRILLING, INC.
LEASE: # 1-20 McINTYRE
FIELD: OTIS-ALBERT
LOCATION: 1980' FSL & 990' FEL W/2 NE SE
SEC. 20 TWSP. 18s RGE. 16w
COUNTY: RUSH STATE: KANSAS

ELEVATIONS
KB: 2003
DF:
GL: 1998
Measurements Are From: 2003 KB

CONTRACTOR: L.D. DRILLING, INC.
SPUD: 2-1-19 COMP: 2-10-19
RTD: 3705 LTD: 3695
MUD UP: 2748 TYPE MUD: CHEMICAL

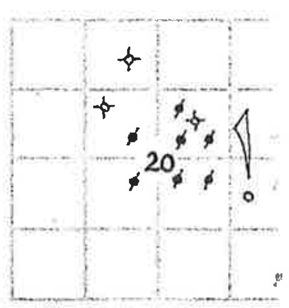
CASING
SURFACE: 8 5/8" @ 1040
PRODUCTION: 5 1/2" @

ELECTRICAL SURVEYS
DUAL IND., DENS-N, MICRO, SONIC

SAMPLES SAVED FROM 2760 TO 3705
DRILLING TIME KEPT FROM 2700 TO 3705
SAMPLES EXAMINED FROM 2760 TO 3705
GEOLOGICAL SUPERVISION FROM 2900 TO 3705

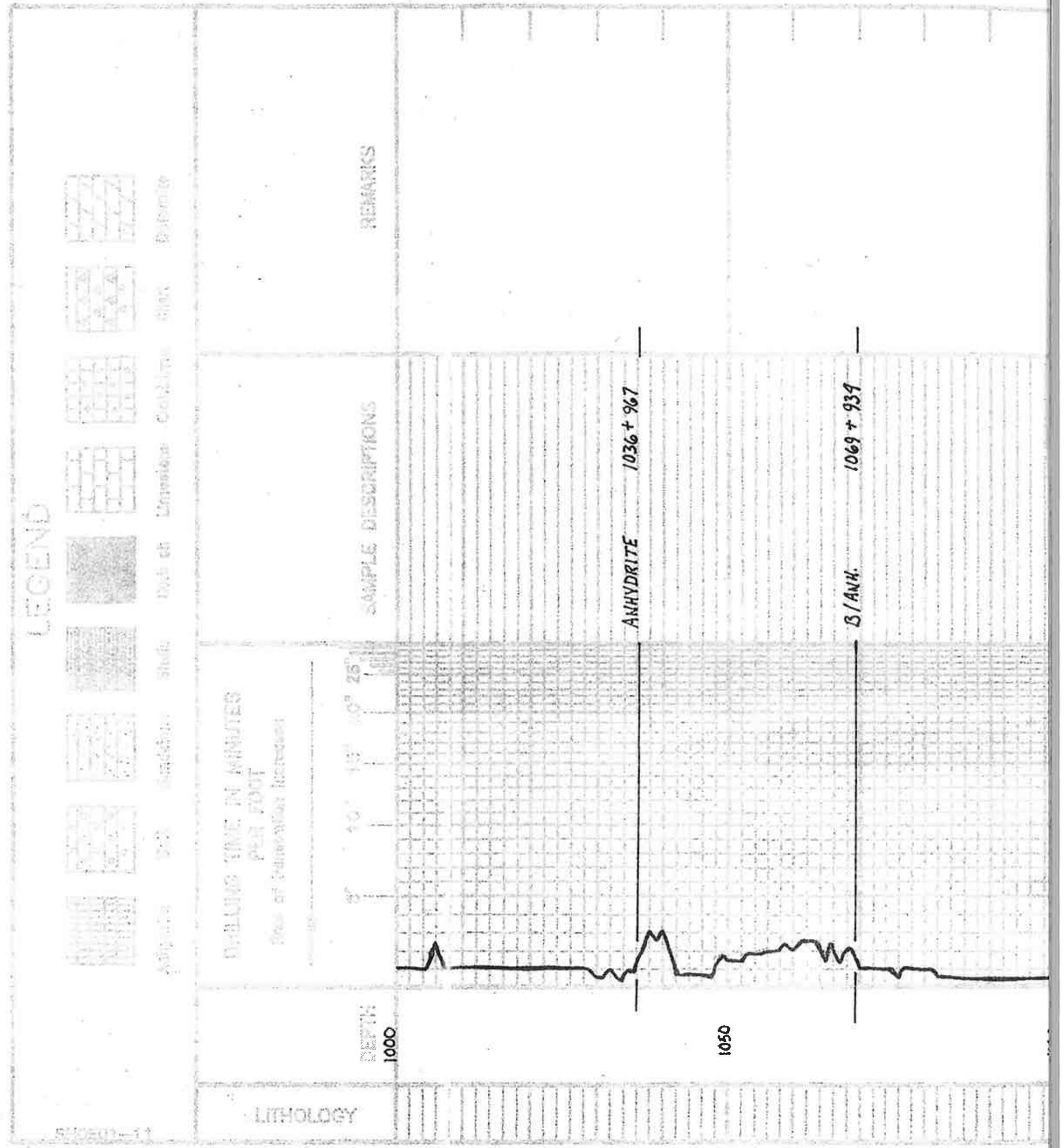
GEOLOGIST ON WELL: KIM B. SHOEMAKER

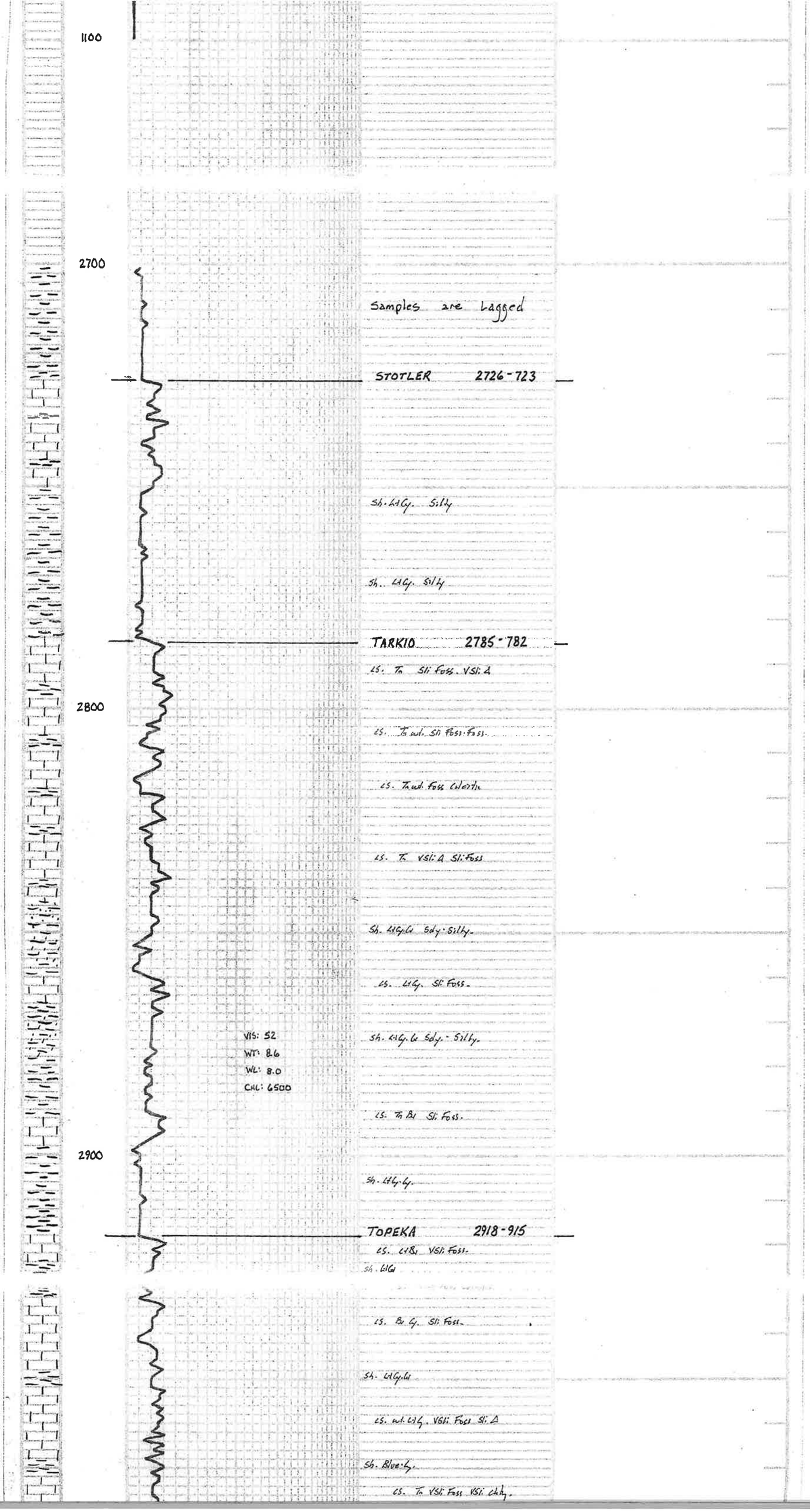
FORMATION TOPS	LOG	SAMPLES
ANHYDRITE	1040 + 963	1036 + 967
B/ANH.	1068 + 935	1069 + 934
TARKIO	2784 - 781	2785 + 782
TOPEKA	2919 - 916	2918 + 915
HEEBNER	3244 - 1241	3244 - 1241
LANSING	3302 - 1299	3302 - 1299
B/KC	3525 - 1522	3525 - 1522
REAGAN	3603 - 1600	3600 - 1597
GRANITE WASH	3656 - 1653	3656 - 1652

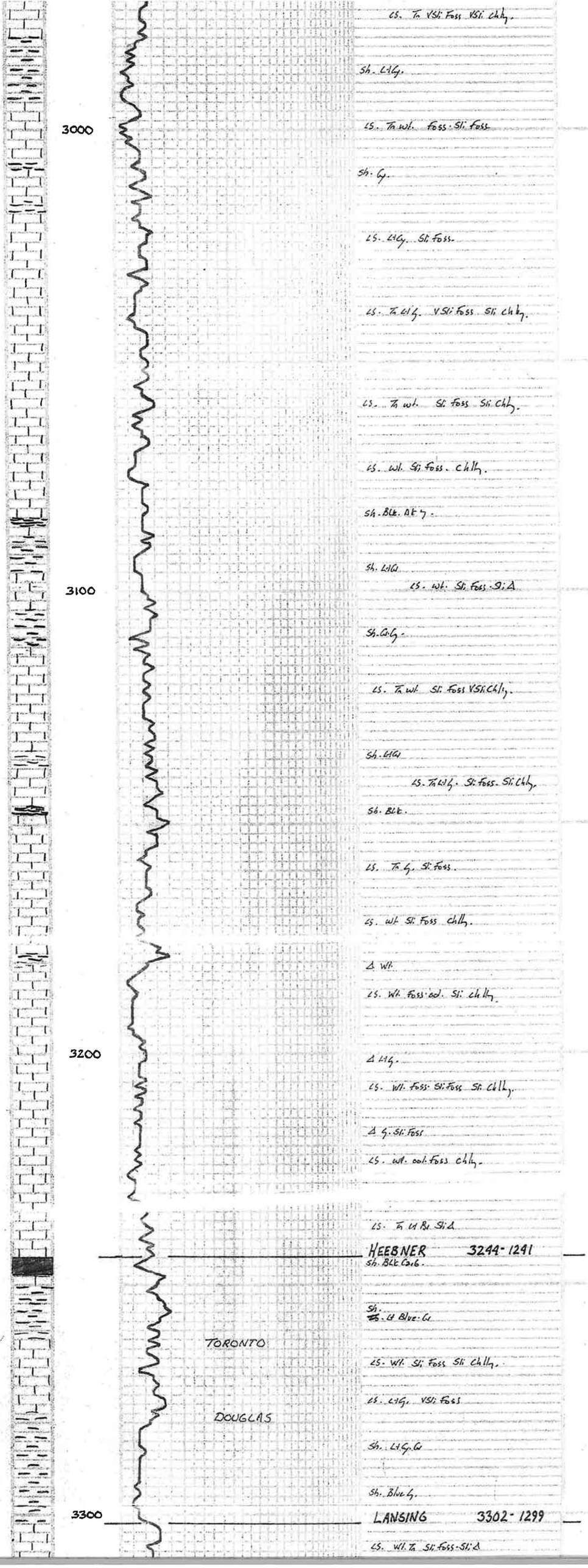


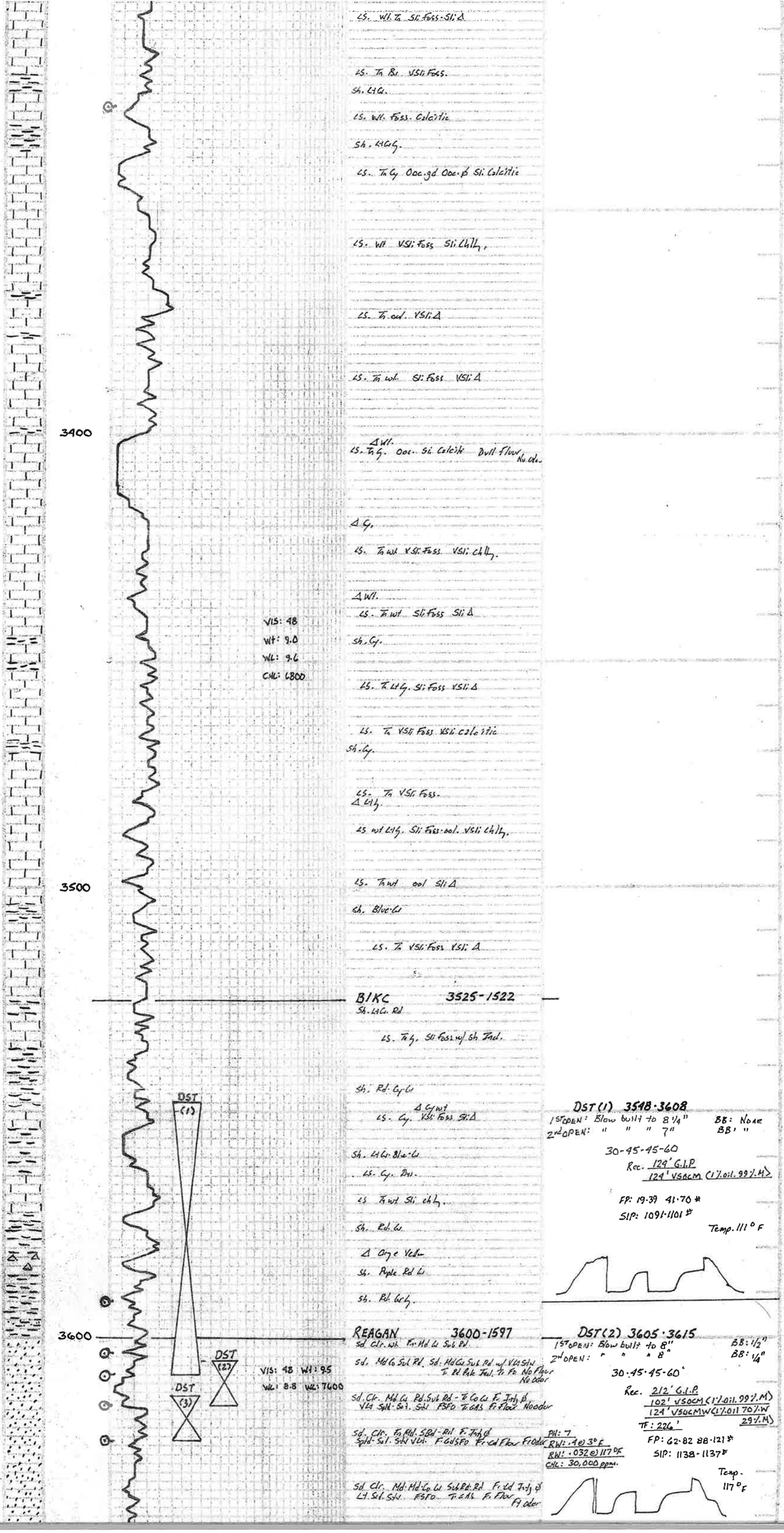
API: 15-165-22163

REMARKS
2-1-19 SPUD
2-2 @ 780'
2-3 @ 1041'
2-4 @ 2025'
2-5 @ 2748'
2-6 @ 3338'
2-7 @ 3608'
2-8 @ 3615'
2-9 @ 3623'
2-10 @ 3705'




1100
2700
Samples are Lagged
STOTLER 2726-723
Sh. Lt Gy. Silty
Sh. Lt Gy. Silty
TARKIO 2785-782
LS. Tn Sli Foss. VSli A
2800
LS. Tn wt. Sli Foss. Foss.
LS. Tn wt. Foss Colorful
LS. Tn VSli A Sli Foss
Sh. Lt Gy Gn Sdy. Silty.
LS. Lt Gy. Sli Foss.
Sh. Lt Gy. Gn Sdy. Silty.
VIS: 52
WT: 8.6
WL: 8.0
CHL: 6500
LS. Tn Bl Sli Foss.
2900
Sh. Lt Gy. Gy.
TOPEKA 2918-915
LS. Lt Bl VSli Foss.
Sh. Lt Gn
LS. Bf Gy. Sli Foss.
Sh. Lt Gy. Gn
LS. wt. Lt Gy. VSli Foss Sli A
Sh. Blue Gy.
LS. Tn VSli Foss VSli Chty.


3000
3100
3200
3300
LS. Tn VSli Foss VSli Chty.
Sh. LtGy.
LS. Tn wh. Foss: Sli Foss.
Sh: Gy.
LS. LtGy. Sli Foss.
LS. Tn LtGy. VSli Foss Sli Chty.
LS. Tn wh. Sli Foss Sli Chty.
LS. wh. Sli Foss. Chty.
Sh. Blk. Bty.
Sh. LtGn.
LS. wh. Sli Foss. Sli A
Sh. GnGy.
LS. Tn wh. Sli Foss VSli Chty.
Sh. LtGn
LS. Tn LtGy. Sli Foss. Sli Chty.
Sh. Blk.
LS. Tn Gy. Sli Foss.
LS. wh Sli Foss Chty.
A wh
LS. wh Foss: od. Sli Chty.
A LtGy.
LS. wh. Foss: Sli Foss Sli Chty.
A Gy. Sli Foss
LS. wh. ool. Foss Chty.
LS. Tn Lt Br. Sli A
HEEBNER 3244-1241
Sh. Blk Calc.
Sh.
LS. Lt Blue: Gy
TORONTO
LS. wh. Sli Foss Sli Chty.
DOUGLAS
LS. LtGy. VSli Foss
Sh. LtGy. Gy
Sh. Blue Gy.
LANSING 3302-1299
LS. wh. Tn Sli Foss-Sli A



DST (1) 3548-3608

1ST OPEN: Blow built to 8 1/4" BB: None
2ND OPEN: " " " 7" BB: "

30-45-45-60

Rec. 129' G.I.P
124' VSGCM (1% oil, 99% M)

FP: 19-39 41-70 #
SIP: 1091-1101 #

Temp. 111° F

DST (2) 3605-3615

1ST OPEN: Blow built to 8" BB: 1/2"
2ND OPEN: " " " 8" BB: 1/4"

30-45-45-60

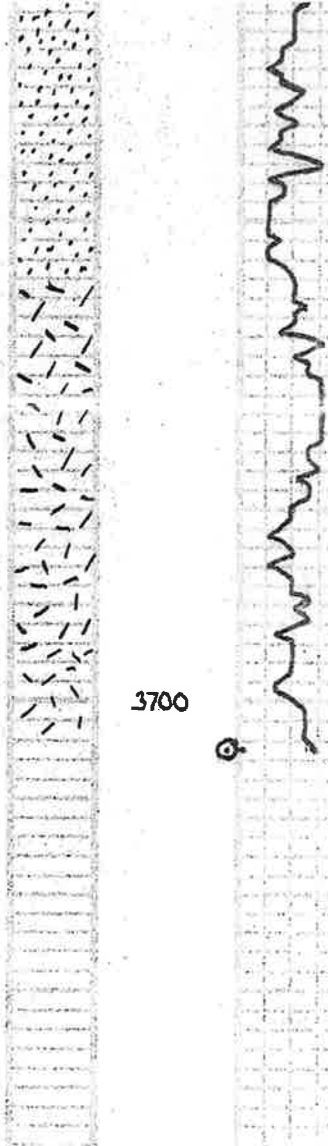
Rec. 2 1/2' G.I.P
102' VSOCM (1% oil, 99% M)
124' VSGCMW (1% oil, 70% W, 29% M)

TF: 226'

FP: 62-82 88-121 #
SIP: 1138-1137 #

PH: 7
RW: .46 @ 3° F
RW: .032 @ 117° F
CHL: 30,000 ppm.

Temp. 117° F



3700

RTD 3705 - 1702

VIS: 51
Wt: 9.25
WL: 11.2
CHL: 9100

Sd Clr. Md-Md-Co Lt SubRd-Rd Fi Ld Trlj Ø
Lt Sl. Sh FSFO T.Cds F. Flour Fi odor

Sd Cl Fn-Md Lt Sub Rd Lt Sold Sh FSFO
F. Flour Fi odor

Sd Clr. Fn-Md-VCoCo Rd-SubRd Fi-Ld Trlj Ø
Lt Sl. Sh FSFO F. Flour Fi odor

Sd Cl w/ Md-Co Lt Sub Rd

Granite Wash Pink Rd Yellow w/ Mica - Feldspar - Sl.

Feldspathic Arkosic Sand w/ Mica.

Getting Stones weathered

Co Rd. Yellow Micaceous Feldspar.

CHL: 30,000 ppm.

Temp. 117°F

DST (3) 3613-3623

1ST OPEN: Bottom bucket 1 min. BB: 5½"
2ND OPEN: " " 7 " BB: 3"

30 · 45 · 45 · 60

Tool Sample
2% oil
88% W
10% M

Rec. 610' G.I.P.
10' VSOCM (2% oil 98% M)
62' WCO (60% oil, 40% W)
186' SOCW (2% oil, 98% W)
186' Wtr. (100% W)

PH: 7
RW .5@18°F
RW .095 @ 124°F
CHL: 40,000

TF: 444'
FP: 37-112 122-243#
SIP: 1171-1170#

Temp. 124°F