KIM B. SHOEMAKER

CONSULTING GEOLOGIST

316-684-9709 * WICHITA, KS

GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY L. D. DRILLING, INC.

LEASE 1-15 WILES TRUST

FIELD WILDCAT

LOCATION 1190' FNL & 1925' FEL

SEC. 15 TWSP. 16s RGE. 37W

COUNTY WICHITA STATE KANSAS

CONTRACTOR L. D. DRILLING, INC.

SPUD 10-22-18 COMP. 11-2-18

T.D. 5040 L.T.D. 5042

MUD UP 3564 TYPE MUD CHEMICAL

ELEVATIONS

KB 3358

DF

GL 3353

Measurements Are All From 3358 KB

CASING

SURFACE 8 5/8" @ 364'

PRODUCTION

ELECTRICAL SURVEYS

DUAL IND., DENS-N., MICRO

SAMPLES SAVED FROM 3500 TO 5040

DRILLING TIME KEPT FROM 3500 TO 5040

SAMPLES EXAMINED FROM 3500 TO 5040

GEOLOGICAL SUPERVISION FROM 3800 TO 5040

GEOLOGIST ON WELL KIM B. SHOEMAKER

FORMATION TOPS	LOG	SAMPLES
ANHYDRITE	2556 + 802	2559 + 799
B/ANH.	2576 + 782	2579 + 779
STOTLER	3630 - 272	3631 - 273
HEEBNER	4002 - 644	4001 - 643
LANSING	4054 - 696	4053 - 695
B/KC	4431 - 1073	4426 - 1068
MARMATON	4473 - 1115	4466 - 1108
FORT SCOTT	4624 - 1266	4612 - 1254
CHEROKEE	4651 - 1293	4640 - 1282
MISSISSIPPI	4950 - 1592	4948 - 1590

15

API: 15-203-20347

REMARKS

10-22-18 SPUD
10-23 @ 367'
10-24 @ 1420'
10-25 @ 2590'
10-26 @ 3315'
10-27 @ 3817'
10-28 @ 4260'
10-29 @ 4320'
10-30 @ 4530'
10-31 @ 4630'
11-1 @ 4816'
11-2 @ 5040'

LEGEND

Dolomite, Chert, Limestone, Oolite, Gas sh., Shale, Sandstone, Silt, Anhydrite

REMARKS

SAMPLE DESCRIPTIONS

DRILLING TIME IN MINUTES PER FOOT

Rate of Penetration in Minutes

5" 10" 15" 20" 25"

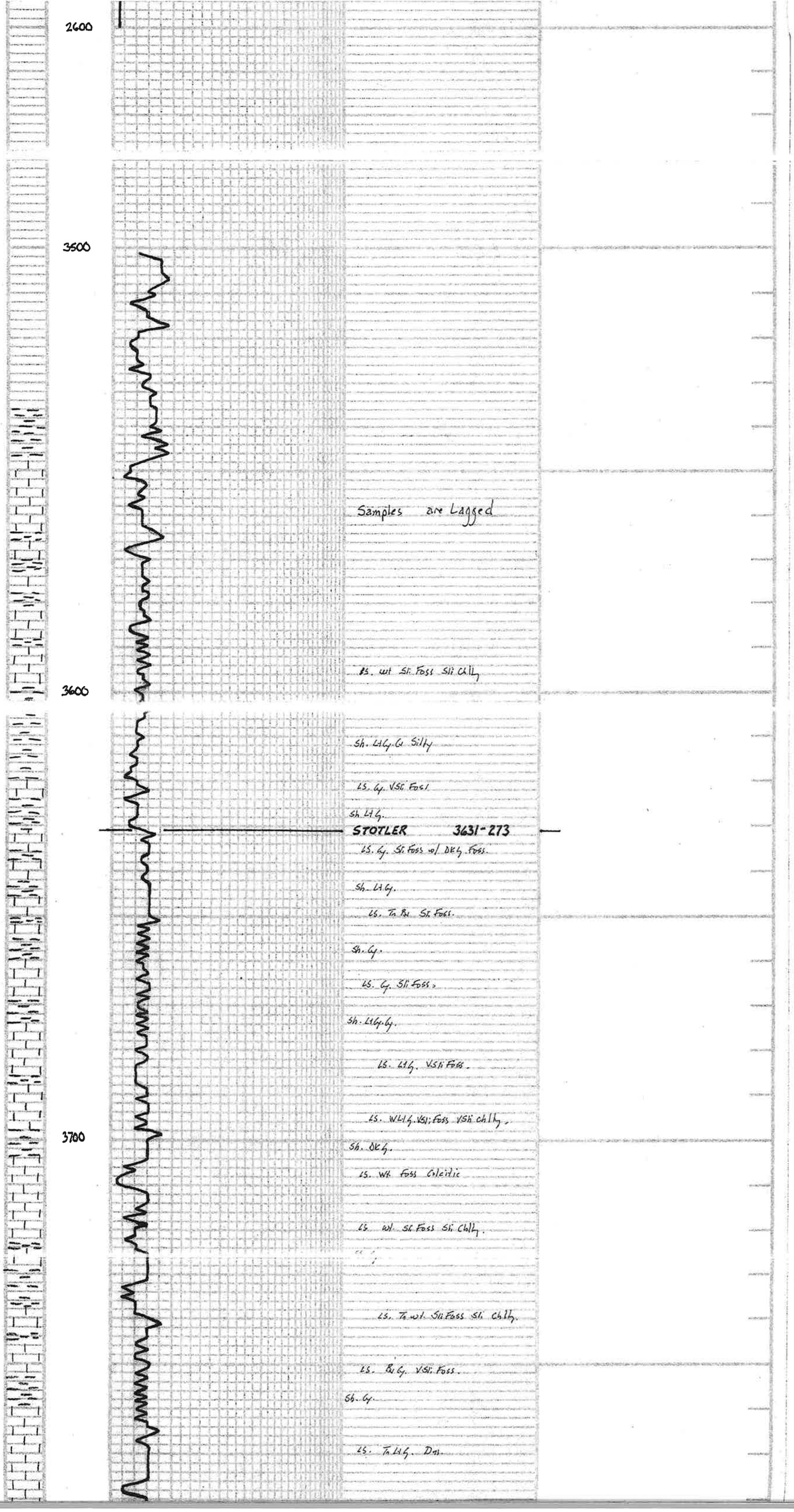
DEPTH 2500

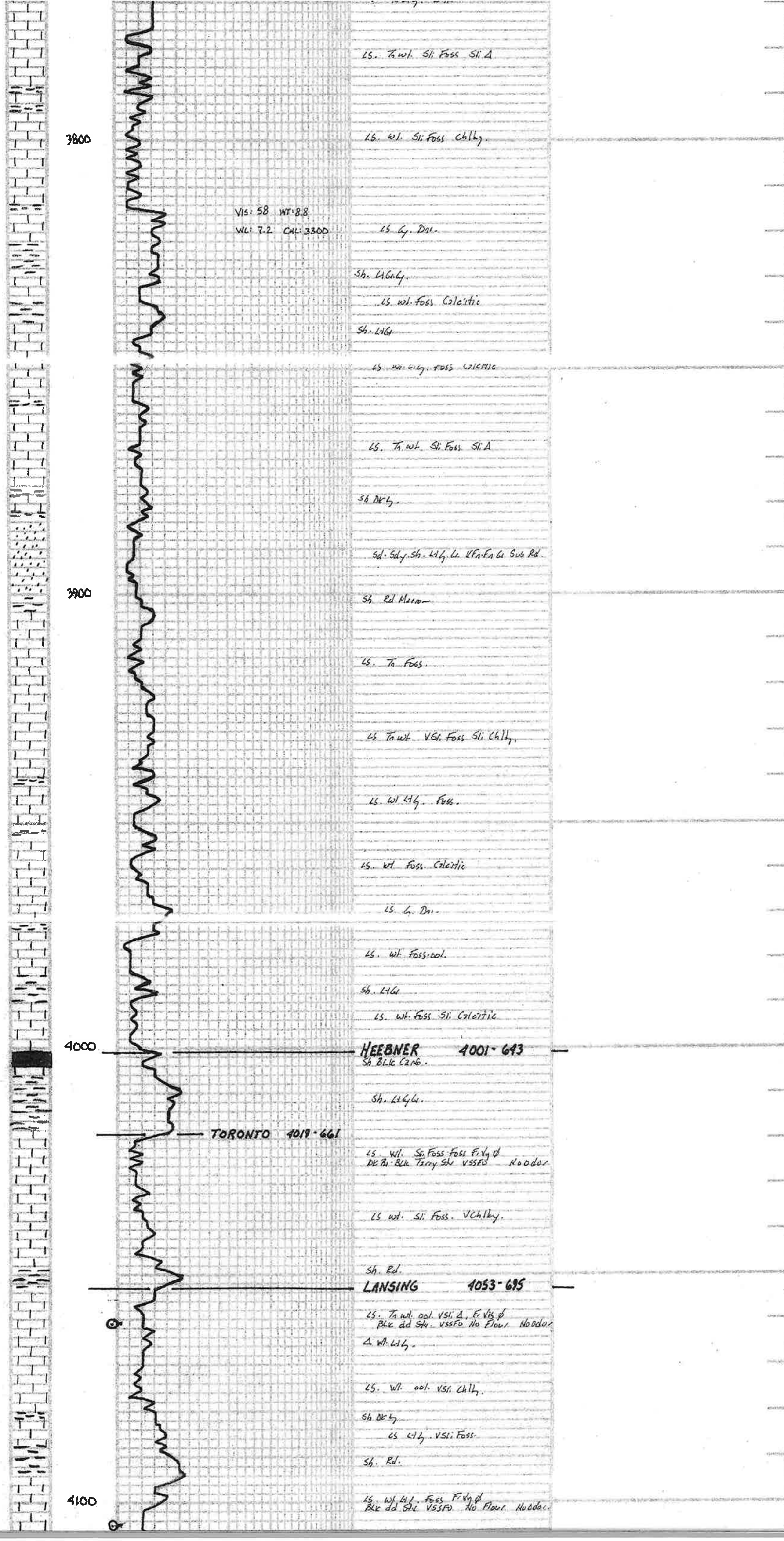
LITHOLOGY

SHOEMAKER

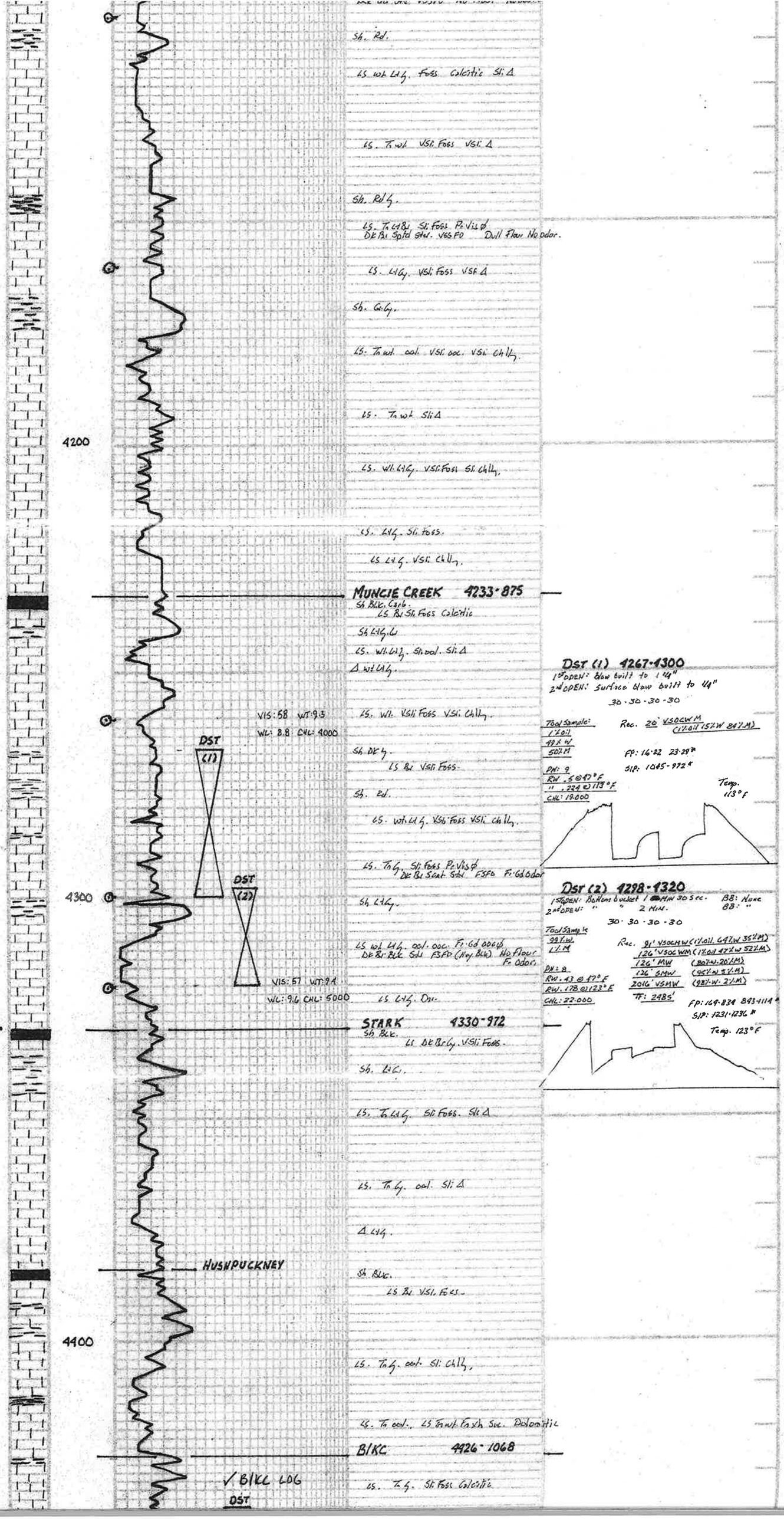
2559+799 ANHYDRITE

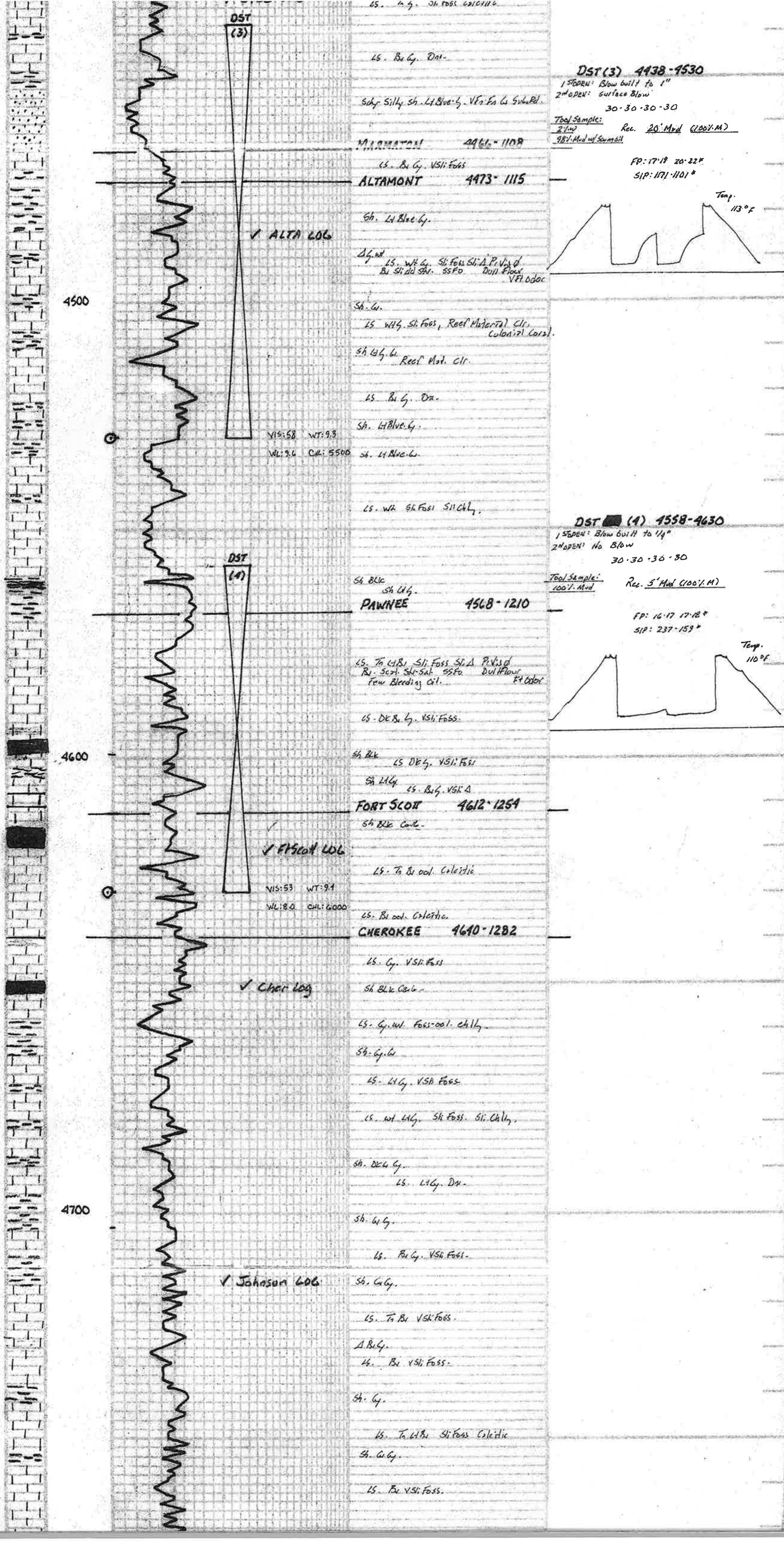
2579+779 B/ANH.

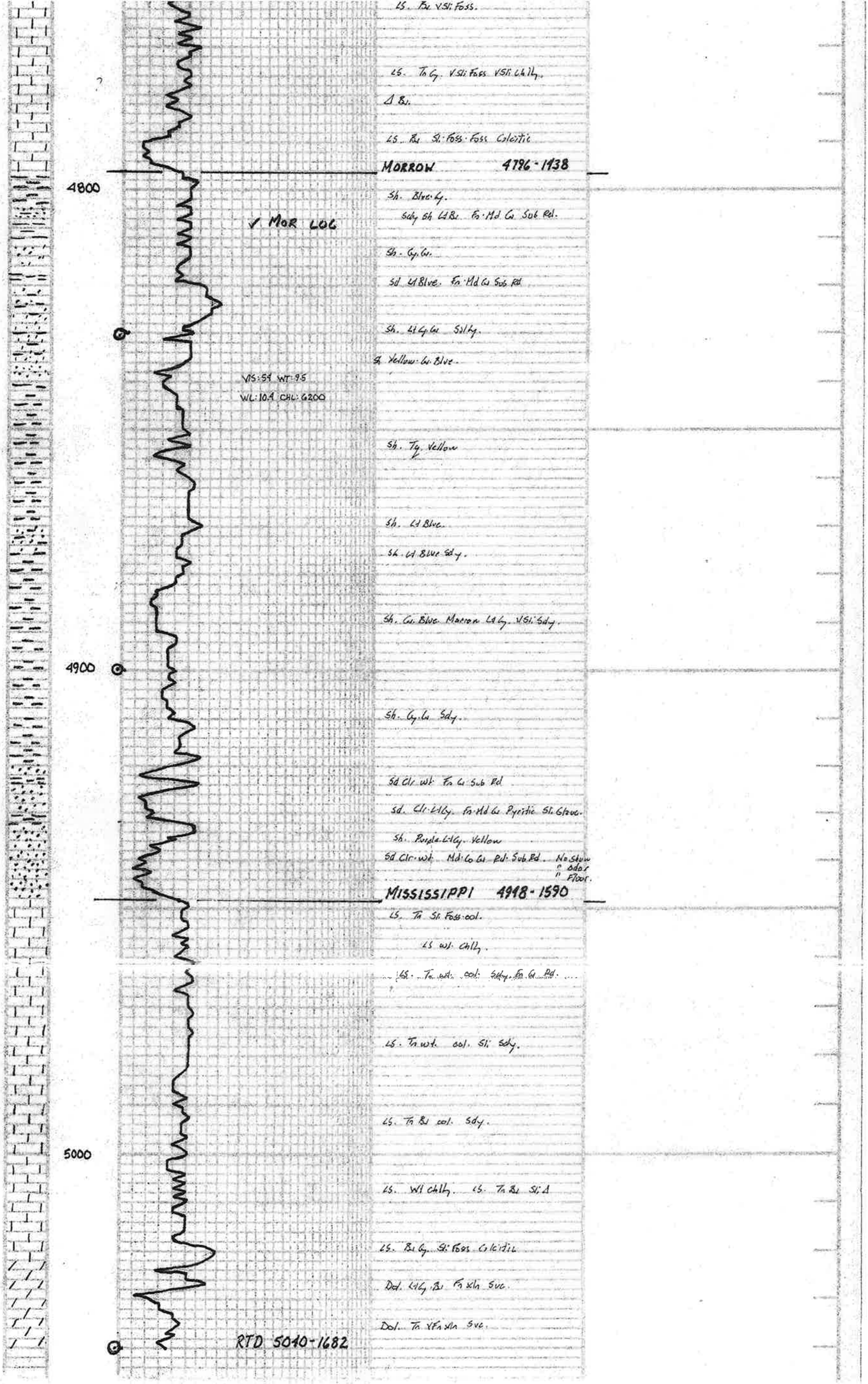

2600
3500
Samples are Lagged
Ls. wt Sl. Foss Sli Chlty
3600
Sh. LtGy.G Silty
Ls. Gy. VSl. Foss
Sh. LtGy.
STOTLER 3631-273
Ls. Gy. Sl. Foss w/ DkGy. Foss.
Sh. LtGy.
Ls. Tn Bf. Sl. Foss.
Sh. Gy.
Ls. Gy. Sli Foss.
Sh. LtGy.Gy.
Ls. LtGy. VSli Foss.
Ls. WLtGy. VSl; Foss VSli chlty.
3700
Sh. DkGy.
Ls. Wh. Foss Calcitic
Ls. wt. Sl. Foss Sli Chlty.
Ls. Tn wt. Sli Foss Sli Chlty.
Ls. Bf Gy. VSl. Foss.
Sh. Gy.
Ls. Tn LtGy. Dns.



LS. Tn wh. Sl. Foss Sl. Δ
3800
LS. wh. Sl. Foss Chlky.
Vis: 58 Wt: 8.8
WL: 7.2 CAL: 3300
LS. Cy. Dns.
Sh. Lt Grnty.
LS. wh. Foss Calcitic
Sh. Lt Gr.
LS. Tn wh. Sl. Foss Sl. Δ
Sh. Dk Gy.
Sd. Sdy. Sh. Lt Gy. Lt. VFn-Fn Gr. Sub Rd.
3900
Sh. Rd Maroon
LS. Tn Foss.
LS. Tn wh. VSl. Foss Sl. Chlky.
LS. wh. Lt Gy. Foss.
LS. wh. Foss Calcitic
LS. Cy. Dns.
LS. wh. Foss. ool.
Sh. Lt Gr.
LS. wh. Foss Sl. Calcitic
4000
HEEBNER 4001 - 643
Sh. Blk Carb.
Sh. Lt Gy Gr.
TORONTO 4019 - 661
LS. wh. Sl. Foss Foss F. Vg ∅
Dk Br - Blk Tarry Sh. VSSFO No odor
LS. wh. Sl. Foss. VChlky.
Sh. Rd.
LANSING 4053 - 695
LS. Tn wh. ool. VSl. Δ, F. Vg ∅
Blk dd Sh. VSSFO No Flour. No odor
Δ wh. Lt Gy.
LS. wh. ool. VSl. Chlky.
Sh. Dk Gy.
LS. Lt Gy. VSl. Foss.
Sh. Rd.
4100
LS. wh. Lt Gy. Foss. F. Vg ∅
Blk dd Sh. VSSFO No Flour. No odor


Sh. Rd.
LS wh Lt Gy. Foss Colcritic Sli Δ
LS. Tn wh VSli Foss VSli Δ
Sh. Rd Gy.
LS. Tn Lt Gy Sli Foss Pr Vis Ø
Dk Br Spkd Stn. VSFO Dull Flor. No odor.
LS. Lt Gy. VSli Foss VSli Δ
Sh. Gn Gy.
LS: Tn wh ool. VSli ooc. VSli Chlk.
LS: Tn wh Sli Δ
4200
LS. Wh Lt Gy. VSli Foss Sli Chlk.
LS. Lt Gy. Sli foss.
LS Lt Gy. VSli Chlk.
MUNCIE CREEK 4233-875
Sh Blk. Carb.
LS Br Sli Foss Colcritic
Sh Lt Gy.
LS. Wh Lt Gy. Sh ool. Sli Δ
Δ wh Lt Gy.
LS. Wh VSli Foss VSli Chlk.
VIS: 58 WT: 9.3
WL: 8.8 CHL: 9000
DST (1)
Sh Dk Gy.
LS Br VSli Foss.
Sh. Gn.
LS. wh Lt Gy. VSli Foss VSli Chlk.
LS. Tn Gy. Sli Foss Pr Vis Ø
Dk Br Scat Stn. FSFO Fr Gd Odor
4300
Sh Lt Gy.
LS wh Lt Gy. ool. ooc. Fr Gd ODG Ø
Dk Br Blk Scat FSFO (Hvy Blk) No Flow
Fr Odor.
DST (2)
VIS: 57 WT: 9.1
WL: 9.6 CHL: 5000
LS Lt Gy. Dns.
STARK 4330-972
Sh Blk.
LS Dk Br Gy. VSli Foss.
Sh. Lt Gn.
LS. Tn Lt Gy. Sli Foss. Sli Δ
LS. Tn Gy. ool. Sli Δ
Δ Lt Gy.
HUSHPUCKNEY
Sh Blk.
LS Br VSli Foss.
4400
LS. Tn Gy. ool. Sli Chlk.
LS. Tn ool.. LS Tn wh Fossh Suc. Dolomitic
BKC 4426-1068
LS. Tn Gy. Sli Foss Colcritic
✓ BKC LOG
DST
DST (1) 4267-1300
1st OPEN: Blow built to 1 1/4"
2nd OPEN: Surface blow built to 4"
30-30-30-30
Tool Sample:
1' Oil
49' W
50' M
Rec. 20' VSOCWM
(1% Oil 15% W 84% M)
FP: 16-22 23-29#
SIP: 1045-972#
PH: 9
RW .5 @ 47°F
" .224 @ 119°F
CHL: 19.000
Temp. 113°F
DST (2) 4298-1320
1st OPEN: Bottom bucket 1 MIN 30 sec. BB: None
2nd OPEN: " " 2 MIN. BB: "
30-30-30-30
Tool Sample
99' W.
1' M
Rec. 81' VSOCMW (1% Oil, 64% W 35% M)
126' VSOC WM (1% Oil 47% W 52% M)
126' MW (80% W 20% M)
126' SMW (95% W 5% M)
2016' VSMW (98% W 2% M)
TF: 2485'
PH: 8
RW .43 @ 47°F
RW .178 @ 123°F
CHL: 22.000
FP: 169-834 843-1114#
SIP: 1231-1236#
Temp. 123°F


DST (3)
DST (4)
4500
4600
4700
LS. Bu Gy. Dns.
Sdy. Silty Sh. Lt Blue Gy. VFn-Fn Gs SubRd.
MARMATON 4466-1108
LS. Bu Gy. VSli Foss
ALTAMONT 4473-1115
Sh. Lt Blue Gy.
✓ ALTA LOG
LS. Wh Gy. Sli Foss Sli Δ P. Vis ϕ
Bu Sl dd Stn. SSFO Dull Fluor VFt odor
Sh. Gy.
LS. Wh Gy. Sli Foss, Reef Material Clr. Colonial Coral.
Reef Mat. Clr.
LS. Bu Gy. Dns.
Sh. Lt Blue Gy.
VIS: 58 WT: 9.3
WL: 9.6 CHL: 5500
LS. Wh Sli Foss Sli Chly.
Sh. Blk
PAWNEE 4568-1210
LS. Tn Lt Bu Sli Foss Sli Δ P. Vis ϕ
Bu. Scat. Stn-Sat. SSFO. Dull Fluor Ft Odor
Few Bleeding Oil.
LS. DK Bu Gy. VSli Foss.
Sh. Blk
LS. DK Gy. VSli Foss
LS. Bu Gy. VSli Δ
FORT SCOTT 4612-1254
Sh. Blk Carb.
✓ Ft Scott LOG
LS. Tn Bu ool. Calcitic
VIS: 53 WT: 9.1
WL: 8.0 CHL: 6000
LS. Bu ool. Calcitic
CHEROKEE 4640-1282
LS. Gy. VSli Foss
✓ Cher Log
Sh. Blk Carb.
LS. Gy. wl. Foss-ool. Chly.
LS. Lt Gy. VSli Foss
LS. Lt Gy. Dns.
Sh. Gy.
LS. Bu Gy. VSli Foss.
✓ Johnson LOG
LS. Tn Bu VSli Foss.
LS. Bu VSli Foss.
Sh. Gy.
LS. Tn Lt Bu Sli Foss Calcitic
LS. Bu VSli Foss.
DST (3) 4438-4530
1st OPEN: Blow built to 1"
2nd OPEN: Surface Blow
30-30-30-30
Tool Sample:
Rec. 20' Mud (100% M)
FP: 17-19 20-22#
SIP: 1171-1101#
Temp. 113°F
DST [redacted] (4) 4558-4630
1st OPEN: Blow built to 1/4"
2nd OPEN: No Blow
30-30-30-30
Tool Sample:
100% Mud
Rec. 5' Mud (100% M)
FP: 16-17 17-18#
SIP: 237-159#
Temp. 110°F


LS. Bl V.Sl. Foss.
LS. Tn Gy. V.Sl. Foss. V.Sl. Chlky.
LS. Bl.
LS. Bl Sl. Foss. Foss. Calcitic
MORROW 4786 - 1938
4800
Sh. Blue Gy.
Sdy Sh Lt Bl. Fn. Md Gr. Sub Rd.
Sh. Gy. Gr.
Sd Lt Blue. Fn. Md Gr. Sub Rd.
Sh. Lt Gy. Gr. Silty.
Sh. Yellow. Gr. Blue.
VIS: 59 WT: 95
WL: 10.1 CHL: 6200
Sh. Ty. Yellow
Sh. Lt Blue.
Sh. Lt Blue Sdy.
Sh. Gr. Blue. Maroon Lt Gy. V.Sl. Sdy.
4900
Sh. Gy. Gr. Sdy.
Sd Clr. wt. Fn Gr. Sub Rd
Sd. Clr. Lt Gy. Fn. Md Gr. Pyritic Sl. Glauc.
Sh. Purple Lt Gy. Yellow
Sd Clr. wt. Md. Gr. Gr. Rd. Sub Rd. No show of Odor or Floor.
MISSISSIPPI 4918 - 1590
LS. Tn Sl. Foss. cal.
LS wl. Chlky.
LS. Tn wt. cal. Sdy. fn. Gr. Rd.
LS. Tn wt. cal. Sl. Sdy.
LS. Tn Bl cal. Sdy.
5000
LS. Wl Chlky. LS. Tn Bl Sl. A
LS. Bl Gy. Sl. Foss Calcitic
Dol. Lt Gy. Bl Fn xln Suc.
Dol. Tn XFn xln Suc.
RTD 5010-1682