KIM B. SHOEMAKER

CONSULTING GEOLOGIST

316-684-9709 * WICHITA, KS

GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY RAYMOND OIL COMPANY, INC.

LEASE #1 HANKS-MRLI UNIT

FIELD WILDCAT

LOCATION 110' FNL & 2230' FWL

SEC 26 TWSP 18s RGE 27W

COUNTY LANE STATE KANSAS

CONTRACTOR L.D. DRILLING, INC.

SPUD 1-25-14 COMP 2-4-14

RTD 4690 LTD 4691

MUD UP 3516 TYPE MUD CHEMICAL

ELEVATIONS

KB 2611

DF

GL 2606

Measurements Are All From 2611 KB

CASING

SURFACE 8 5/8" @ 261'

PRODUCTION

ELECTRICAL SURVEYS

DUAL IND., DENS.-N. MICRO SONIC

SAMPLES SAVED FROM 3400 TO 4690

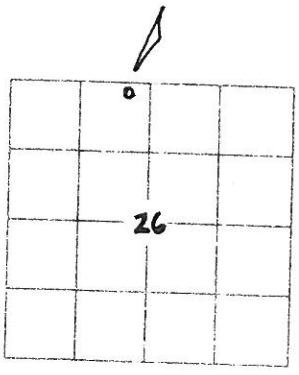
DRILLING TIME KEPT FROM 3400 TO 4690

SAMPLES EXAMINED FROM 3400 TO 4690

GEOLOGICAL SUPERVISION FROM 3700 TO 4690

GEOLOGIST ON WELL KIM B. SHOEMAKER

FORMATION TOPS	LOG	SAMPLES
ANHYDRITE	1974 + 637	1975 + 636
B/ANH.	2002 + 609	2002 + 609
STOTLER	3457 - 846	3458 - 847
HEEBNER	3893 - 1282	3897 - 1286
LANSING	3932 - 1321	3932 - 1321
HUSHPUCKNEY	4235 - 1624	4237 - 1626
MARMATON	4301 - 1690	4309 - 1693
FORT SCOTT	4450 - 1839	4450 - 1839
CHEROKEE	4474 - 1863	4474 - 1863
MISSISSIPPI	4598 - 1987	4597 - 1986



REMARKS

1-25-14 SPUD
1-26 @ 346'
1-27 @ 1831'
1-28 @ 2720'
1-29 @ 3300'
1-30 @ 3860'
1-31 @ 4260'
2-1 @ 4510'
2-2 @ 4540'
2-3 @ 4690'
2-4 @ 4690'

API: 15-101-22488

SHOE01-06

LEGEND

LITHOLOGY

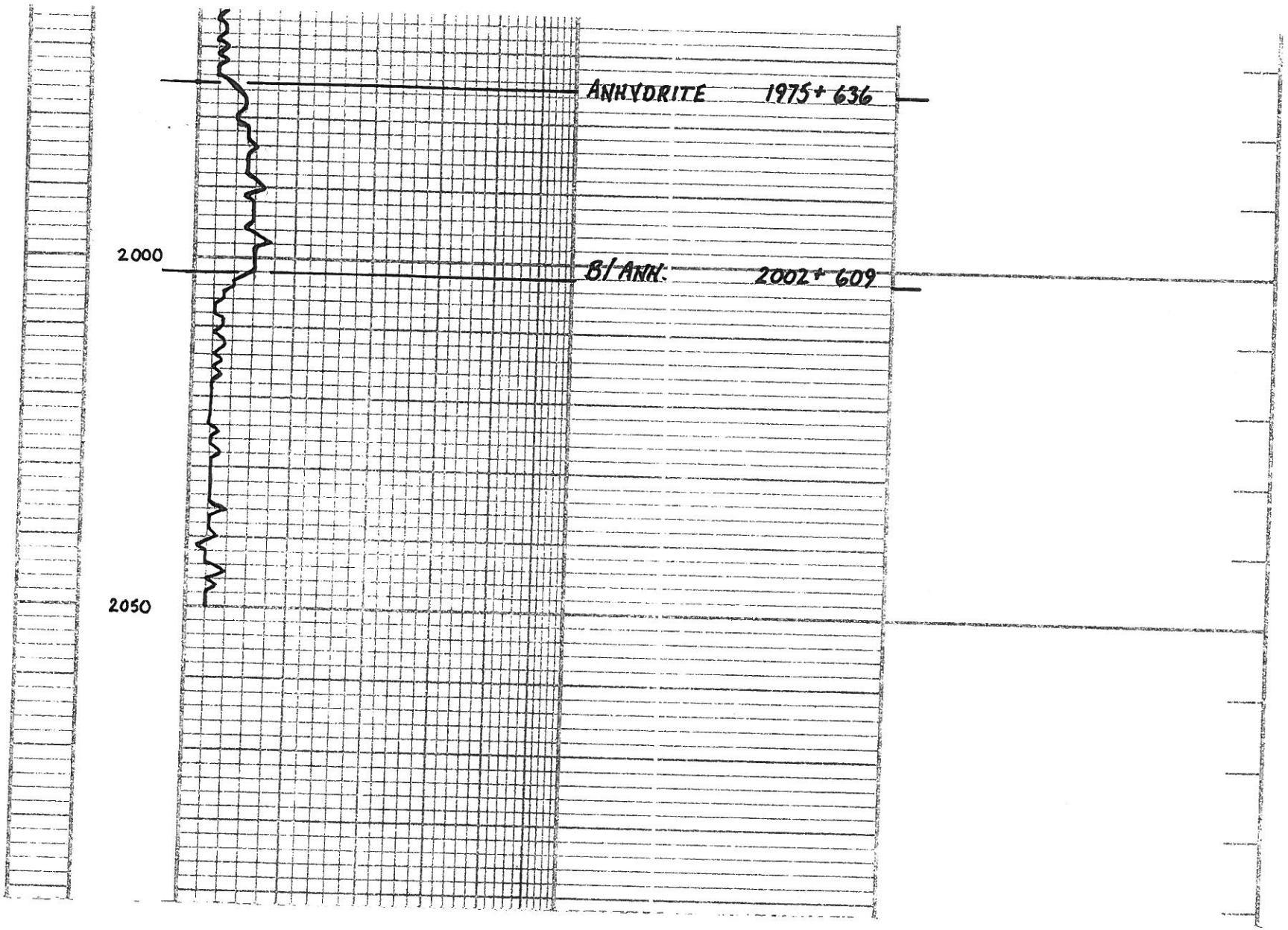
DEPTH
1950

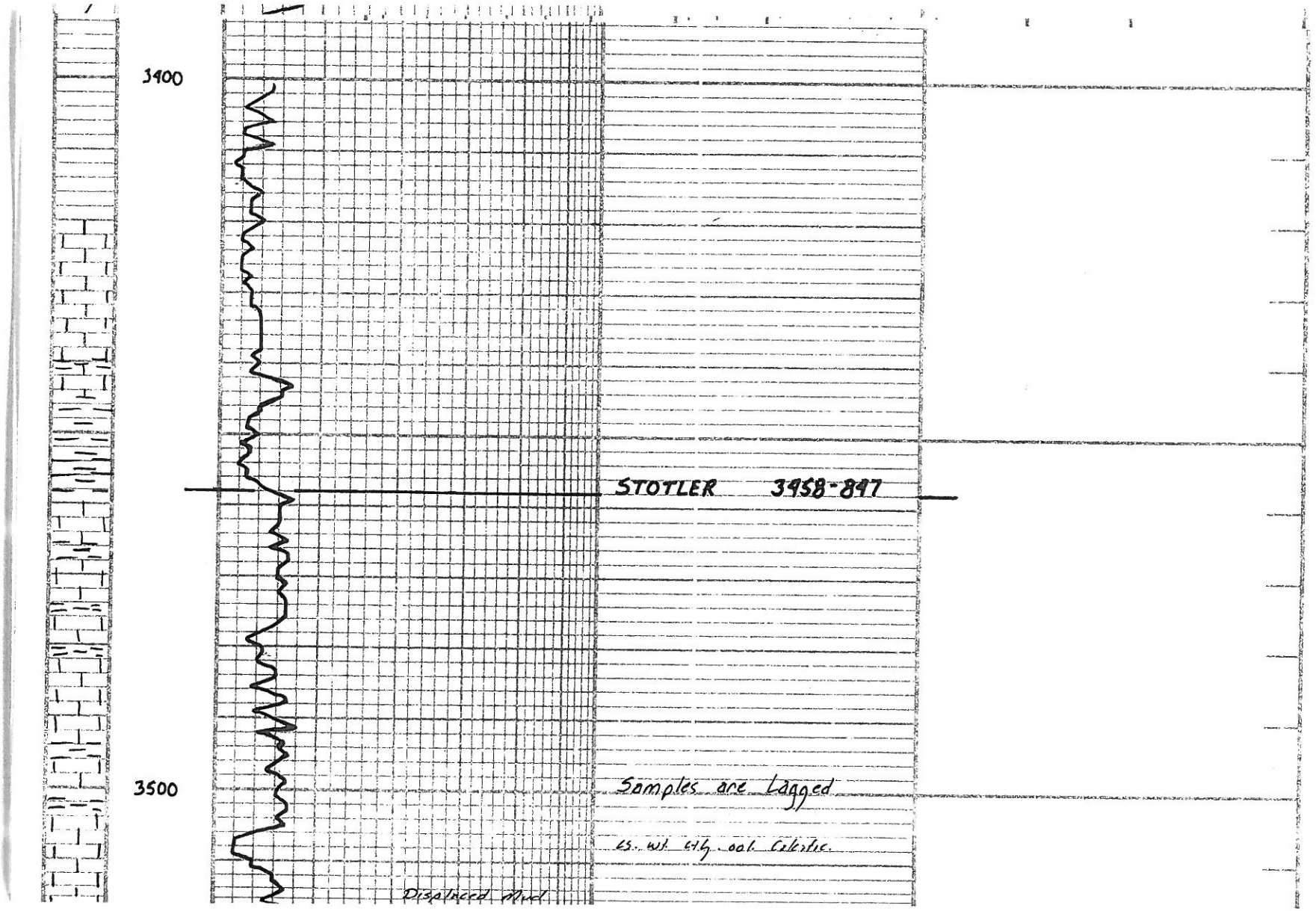
DRILLING TIME IN MINUTES PER FOOT
Rate of Penetration Increases

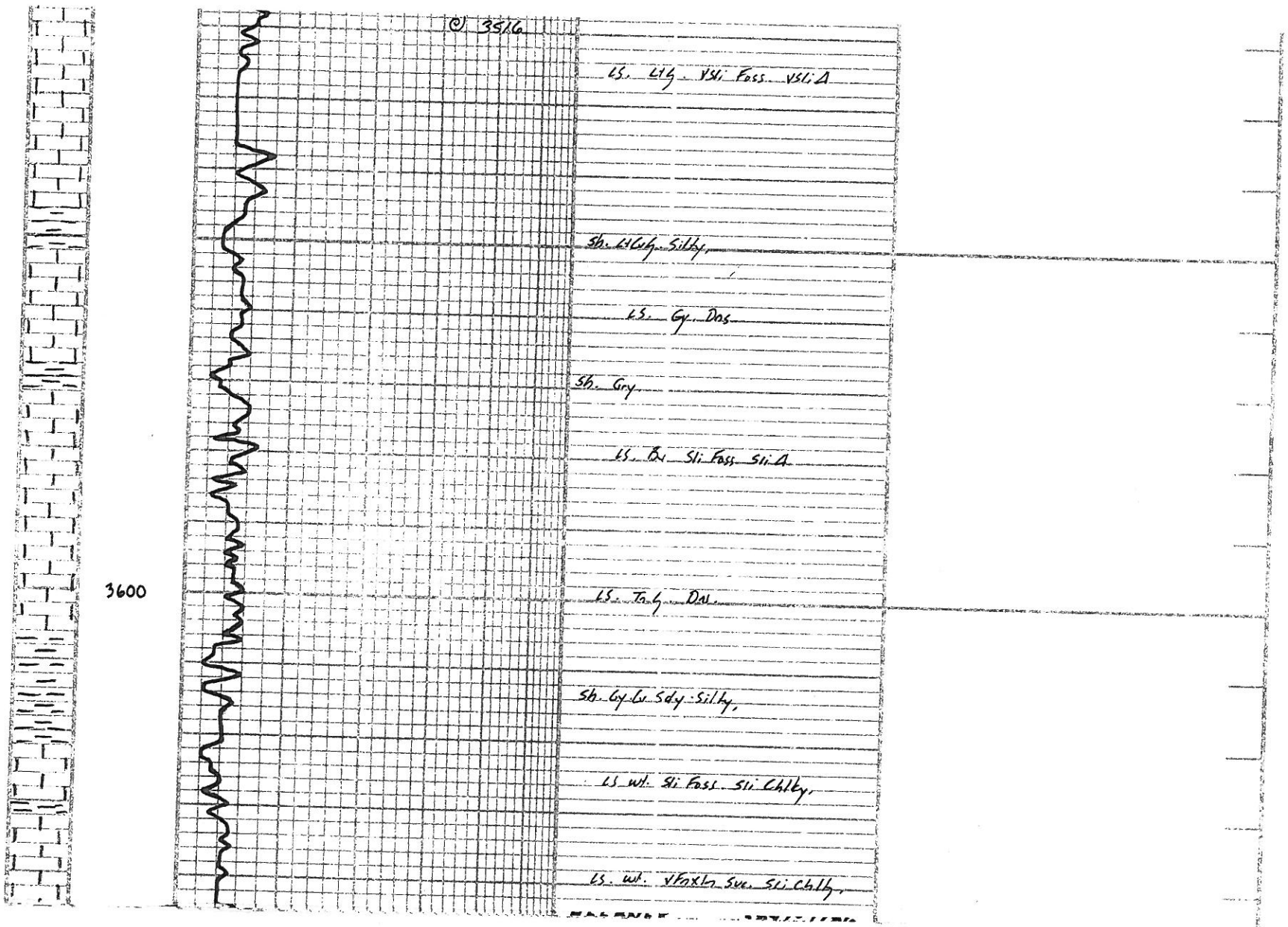
5" 10" 15" 20" 25"

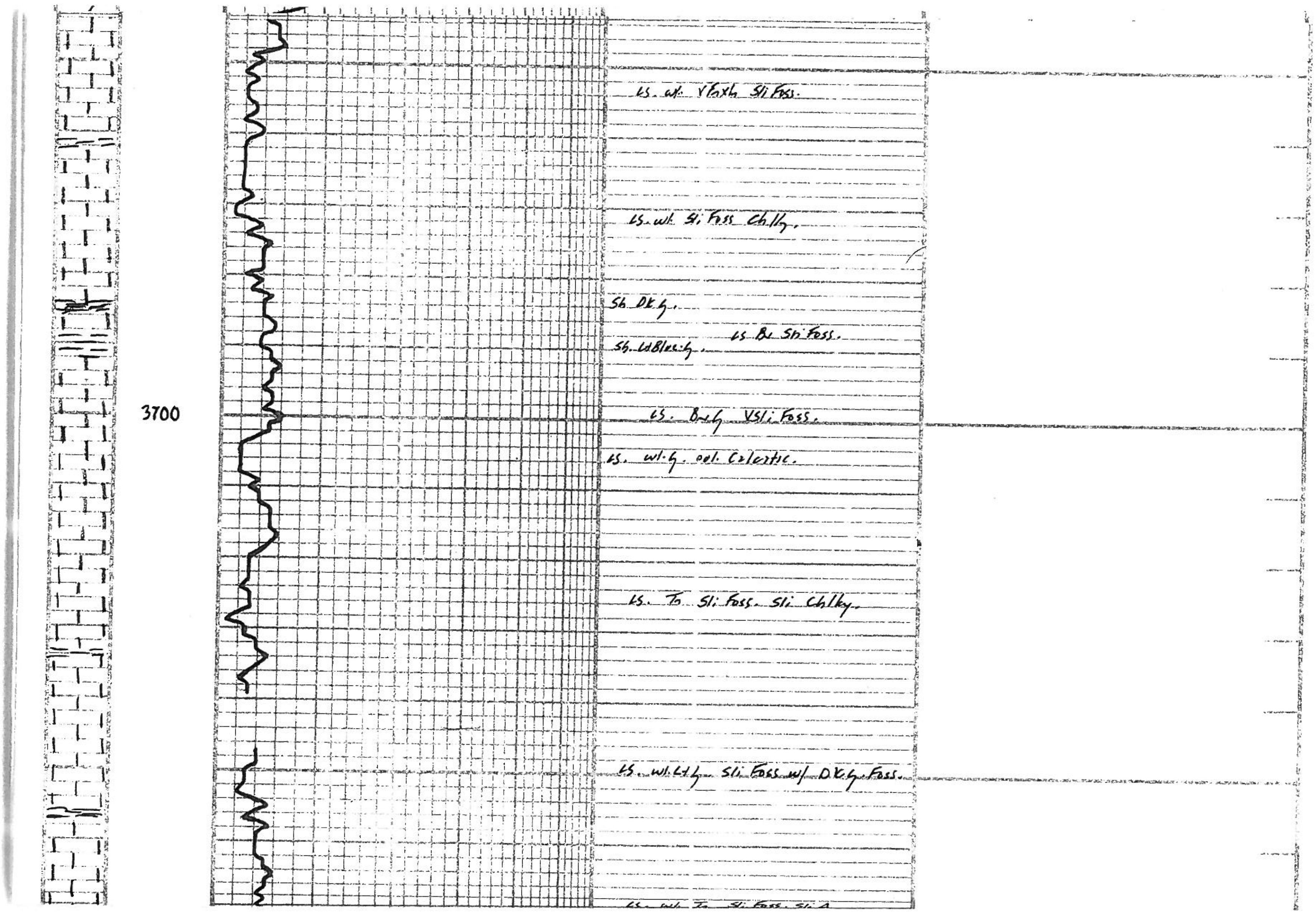
SAMPLE DESCRIPTIONS

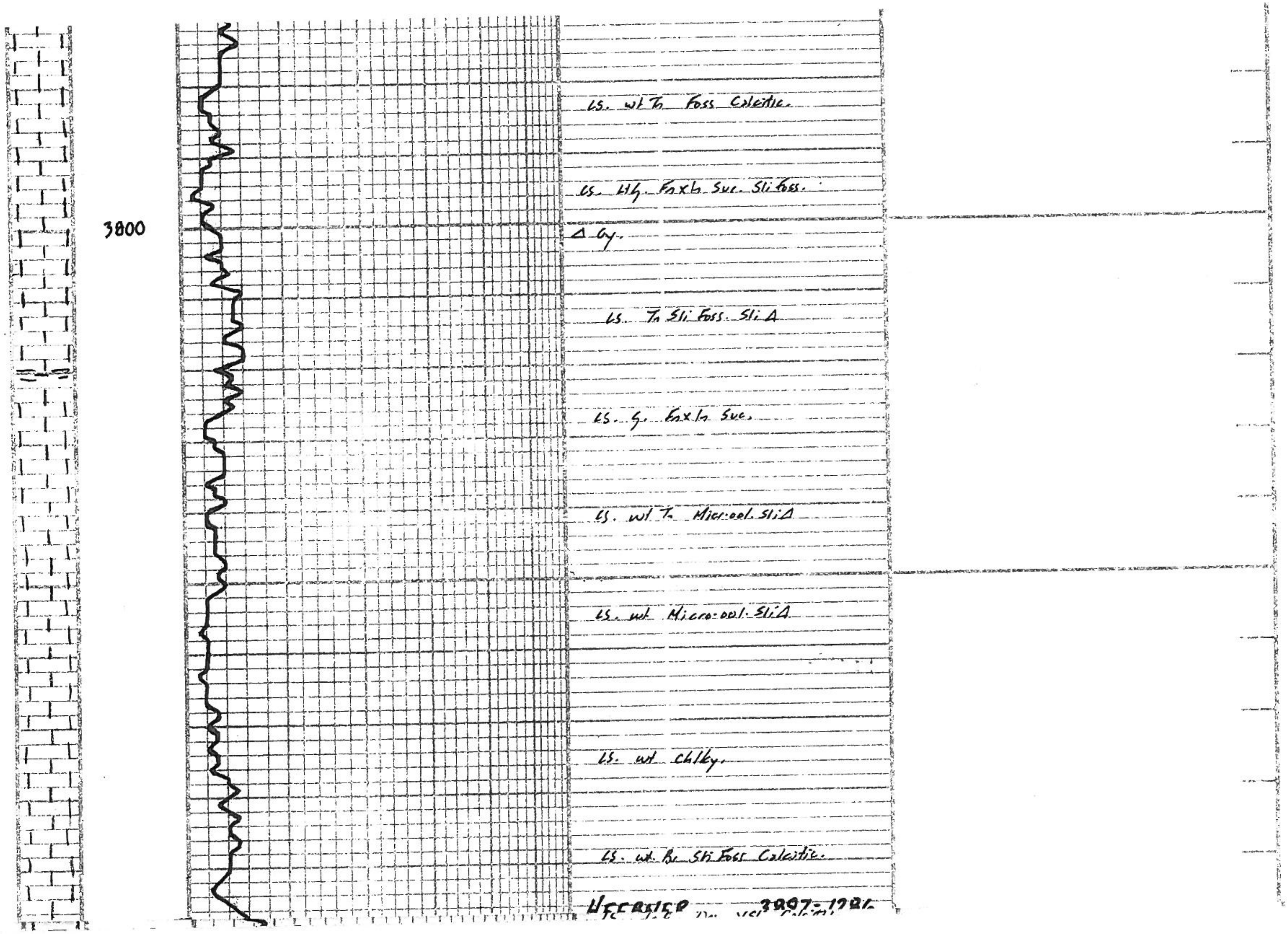
REMARKS

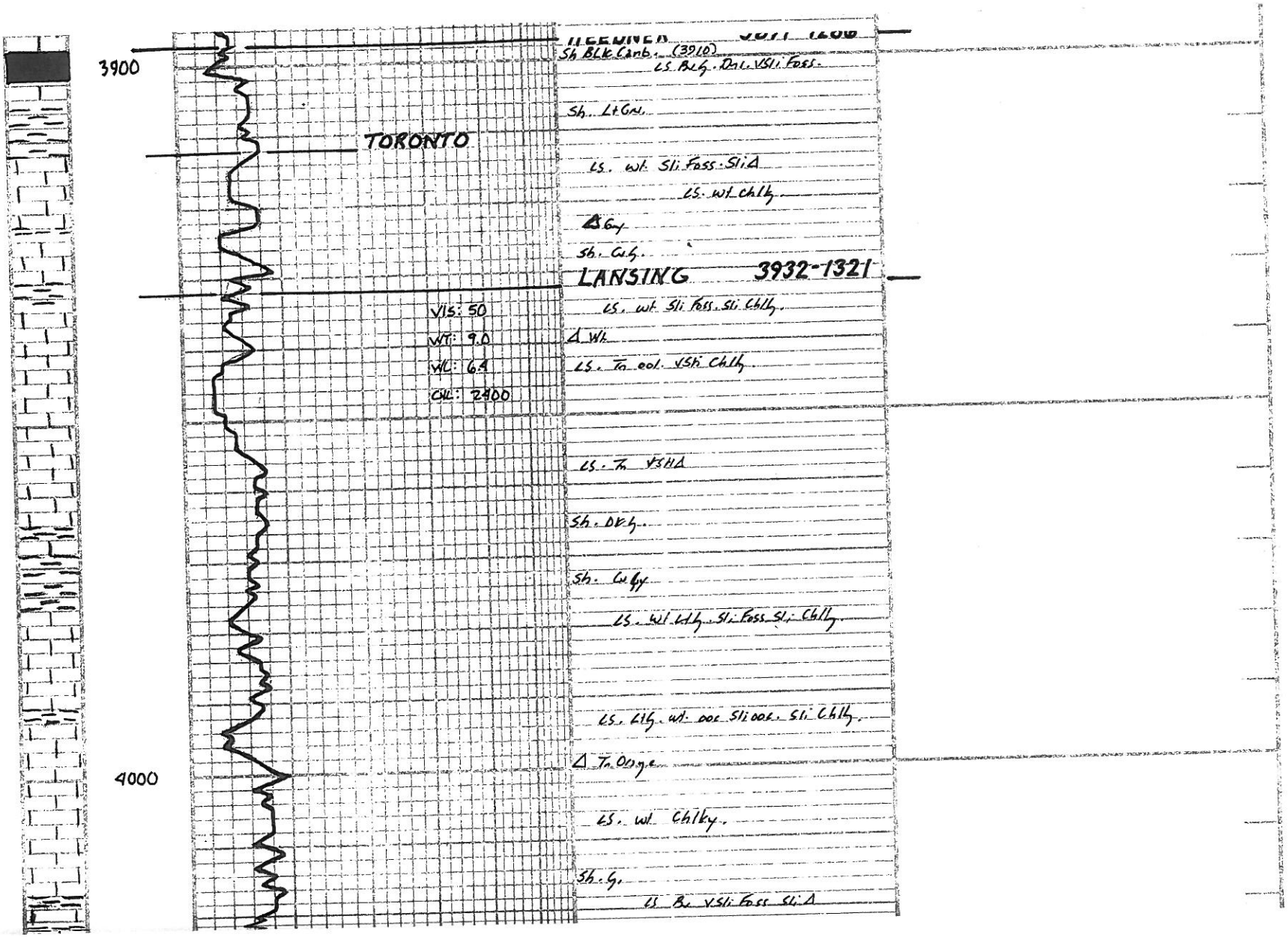

ANHYDRITE 1975+636
2000
B/ANH. 2002+609
2050

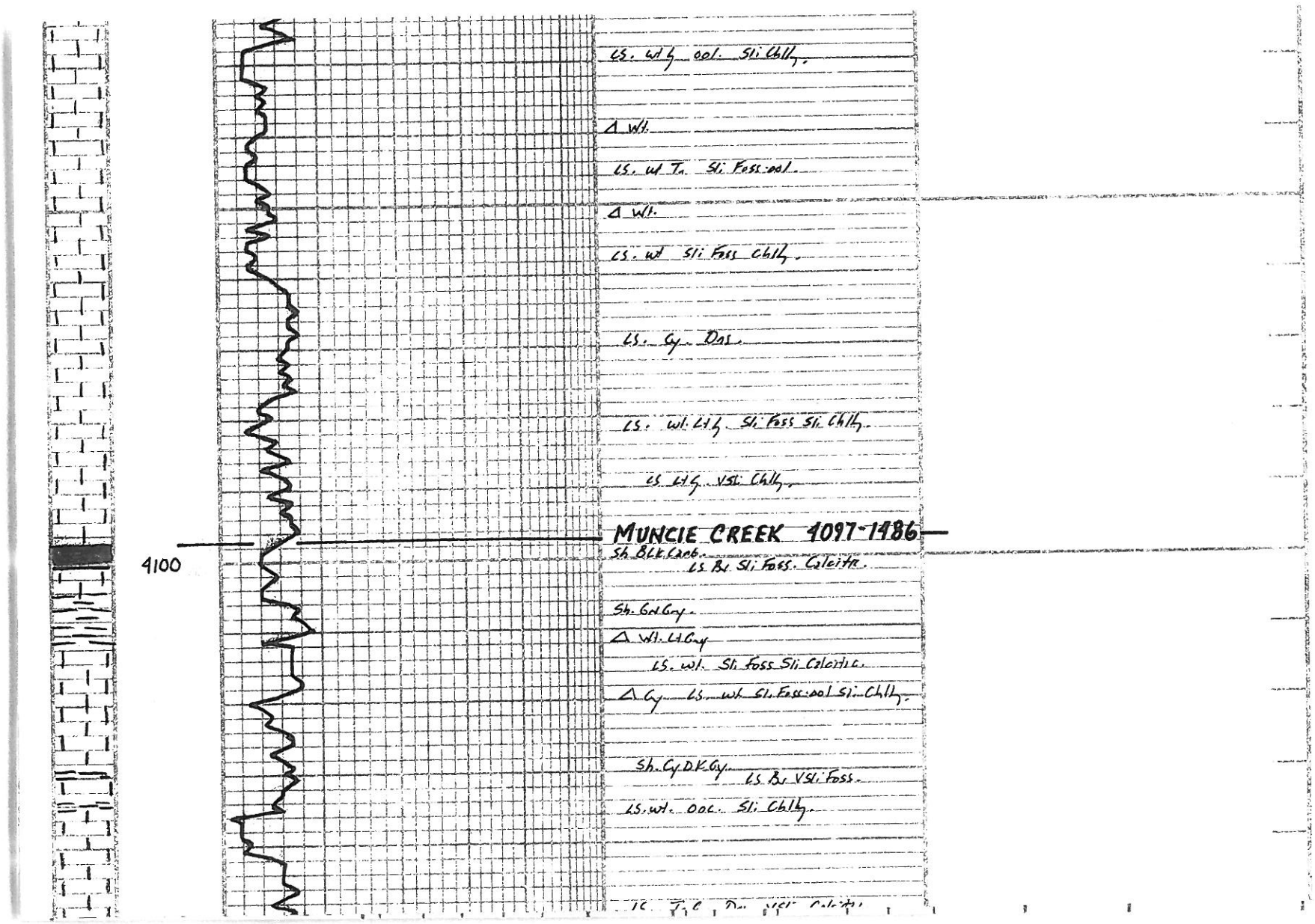

3400
3500
STOTLER 3958-847
Samples are Lagged
Displaced Mud

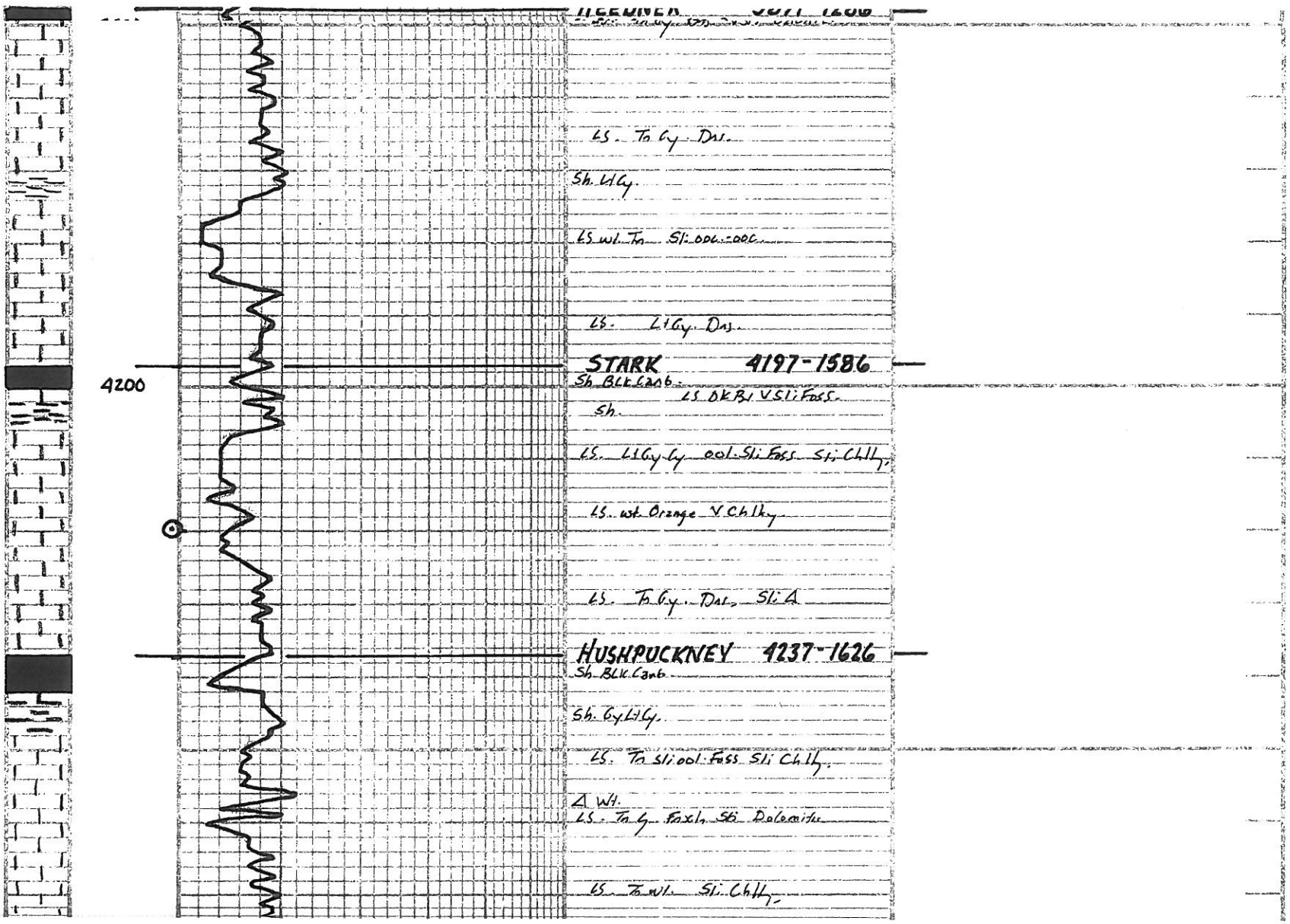

3600
3516
LS. Lt Gy. VSli Foss. VSli A
Sh. Lt Gy. Silty
LS. Gy. Dns
Sh. Gry
LS. Dk Sli Foss. Sli A
LS. Tn-Gy Dns.
Sh. Gy-Gn Sdy Silty,
LS wh. Sli Foss. Sli Chty,
LS. wh. VFoxln Sve. Sli Chty,

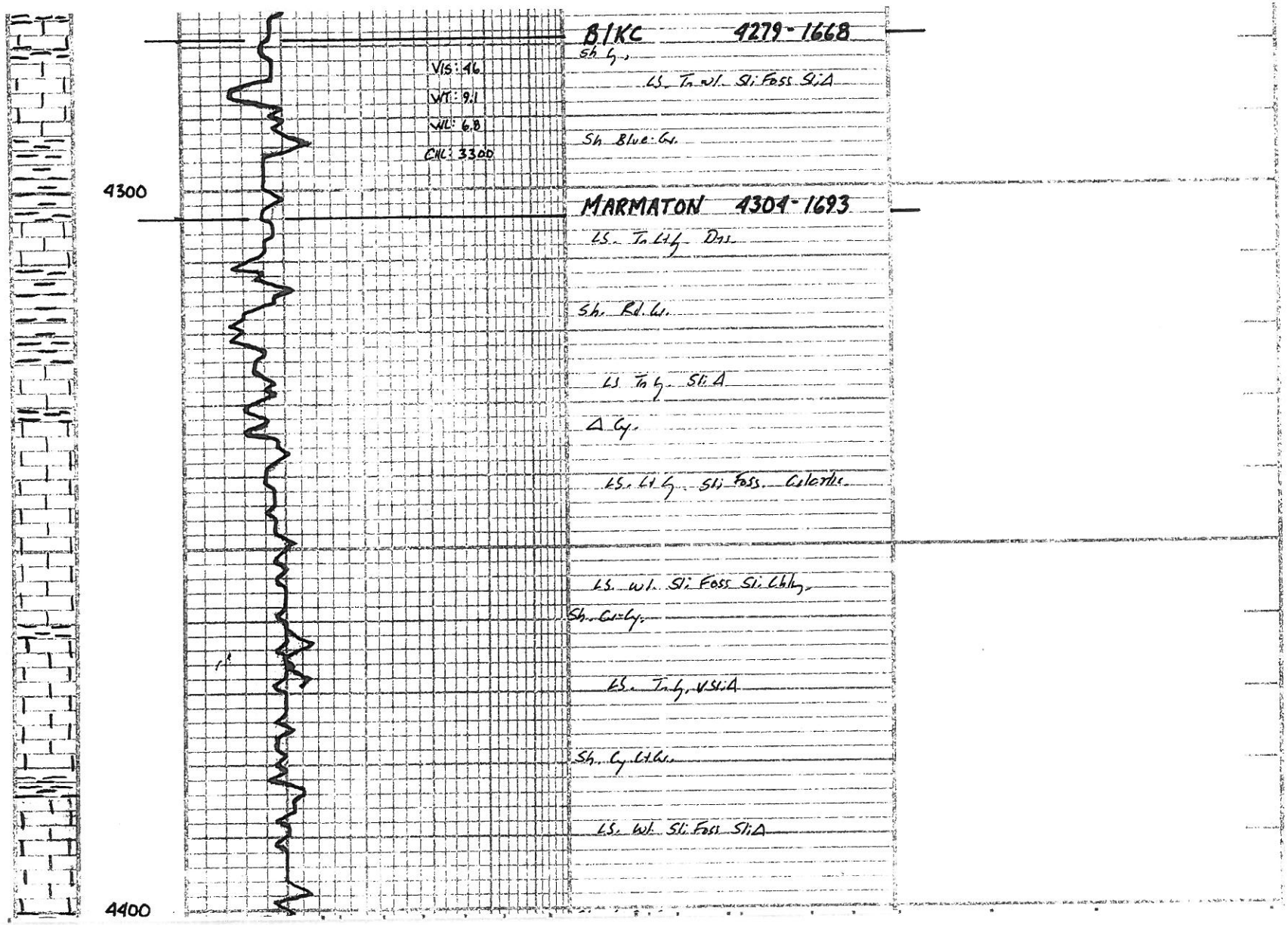

3700
Ls. w/. VFnXln Sli Foss.
Ls. w/. Sli Foss Chlky.
Sh Dk g.
Sh. LtBlue g.
Ls. Br Sli Foss.
Ls. Br g VSli Foss.
Ls. wl. g. ool. Calcitic.
Ls. Tn Sli Foss. Sli Chlky.
Ls. wl. Lt g. Sli Foss w/ Dk g. Foss.

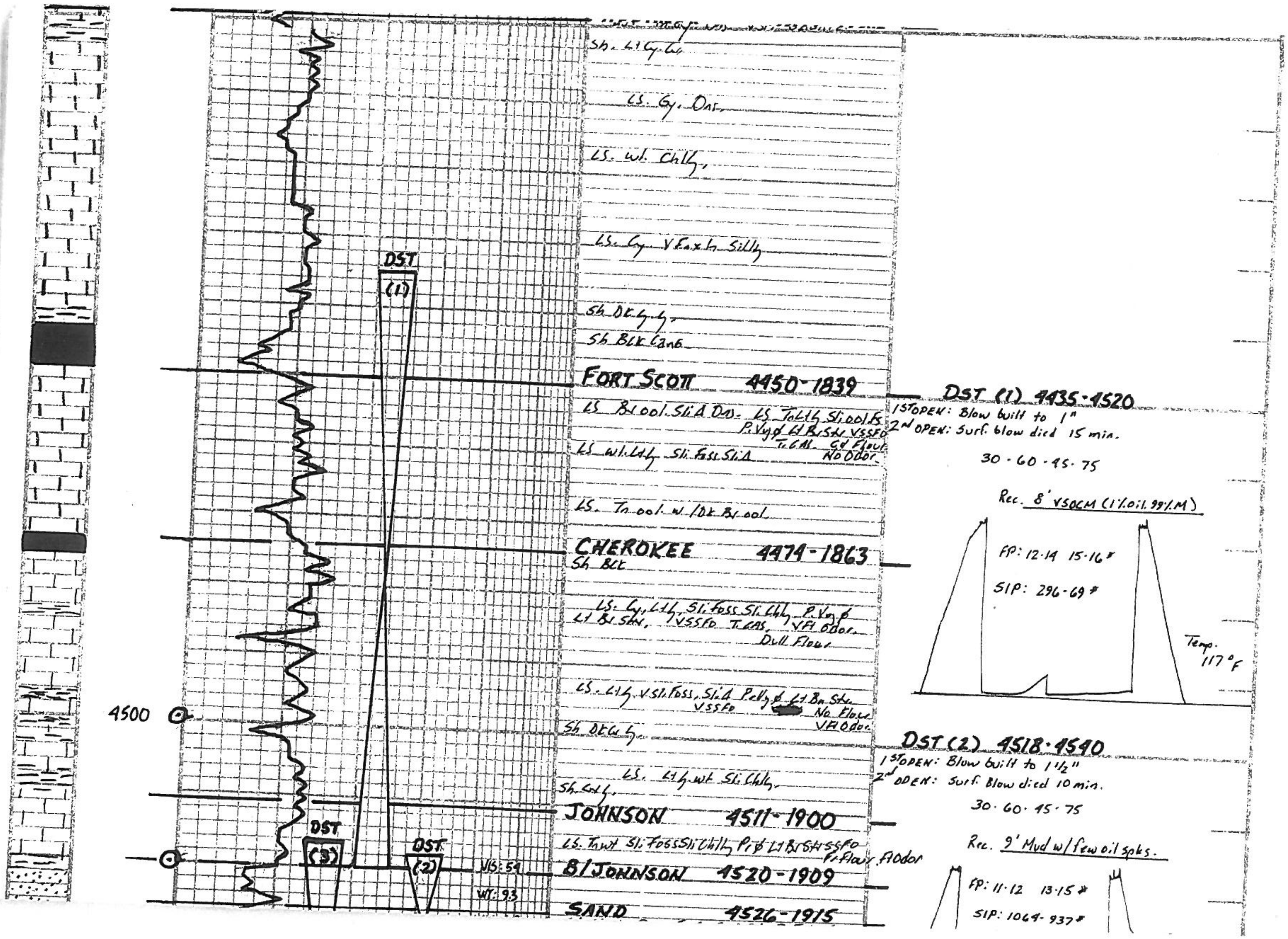

3800
LS. wt Tn Foss Calcitic.
LS. Ltg. Fnxln Suc. Sli foss.
Δ Gy.
LS. Tn Sli Foss. Sli Δ
LS. G. Fnxln Suc.
LS. wt Tn Micro-ool. Sli Δ
LS. wt Micro-ool. Sli Δ
LS. wt Chlky.
LS. wt Bc Sli Foss Calcitic.
[illegible] 3897-1981


3900
4000
TORONTO
LANSING 3932-1321
VIS: 50
WT: 9.0
WL: 6.4
CHL: 2400
Sh BLK Carb.. (3910)
Sh. Lt Gy.
Sh. Gy.
Sh. Dk Gy
Sh. Gy

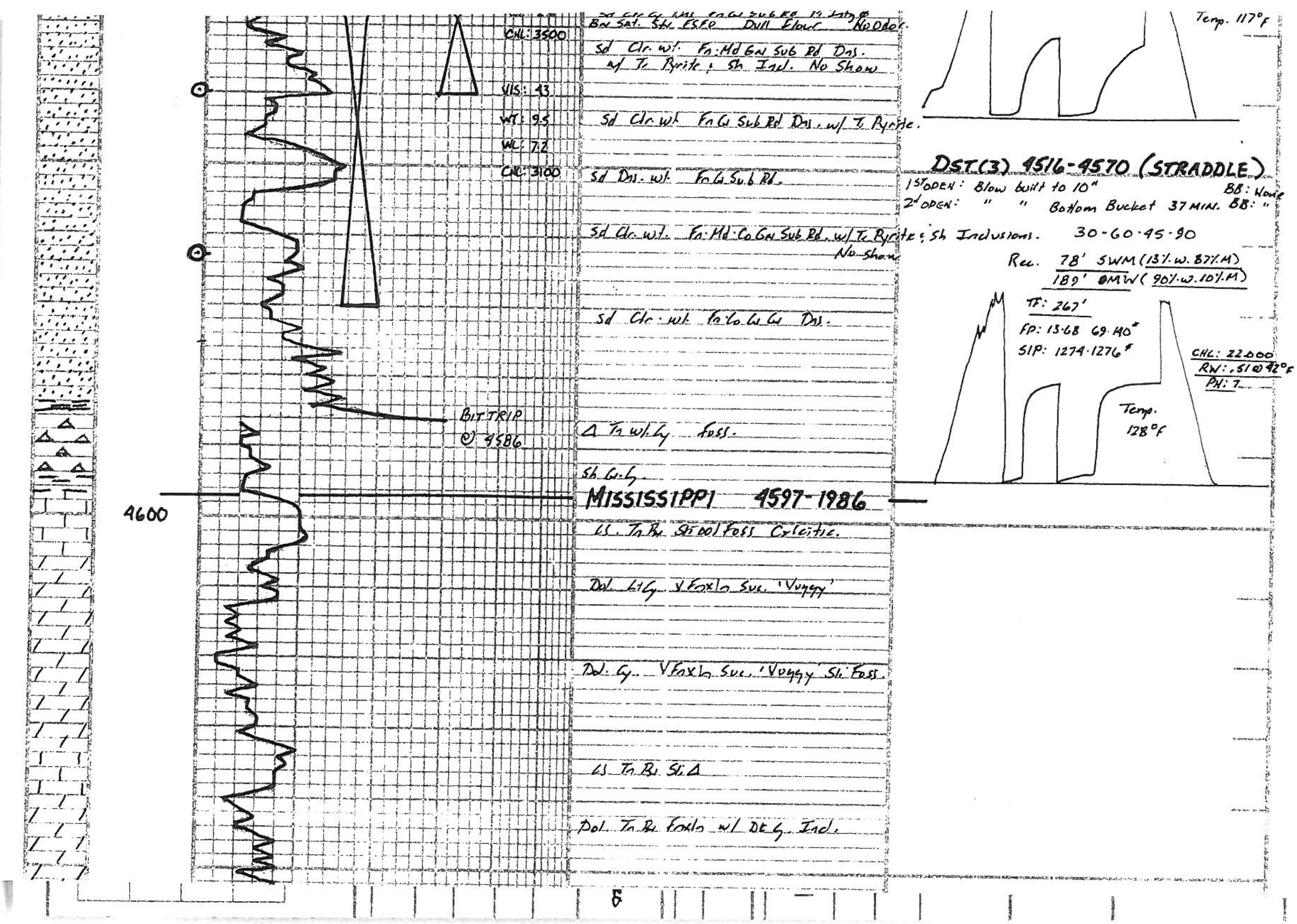

Ls. wh Gy ool. Sli Chlky.
Δ wh.
Ls. wh Tn. Sli Foss. ool.
Δ wh.
Ls. wh Sli Foss Chlky.
Ls. Gy. Das.
Ls. wh. Lt Gy. Sli Foss Sli Chlky.
Ls. Lt Gy. Vsl Chlky.
MUNCIE CREEK 1097-1486
Sh. Blk Carb.
Ls. Br. Sli Foss. Calcite.
Sh. Gn Gy.
Δ wh. Lt Gy
Ls. wh. Sli Foss Sli Calcitic.
Δ Gy Ls. wh. Sl. Foss. ool Sli. Chlky.
Sh. Gy. D.K. Gy.
Ls. Br. Vsl. Foss.
Ls. wh. ooc. Sli Chlky.
4100


4200
LS. Tn Gy. Dns.
Sh. Lt Gy.
LS wl. Tn Sli. ool. ooc.
LS. Lt Gy. Dns.
STARK 4197-1586
Sh. Blk Carb.
LS. DK Bn V Sli Foss.
Sh.
LS. Lt Gy-Gy ool. Sli Foss. Sli Chty.
LS. wh. Orange V Chty
LS. Tn Gy. Dns, Sli A
HUSHPUCKNEY 4237-1626
Sh. Blk Carb.
Sh. Gy Lt Gy.
LS. Tn sli ool. Foss Sli Chty.
A WH.
LS. Tn Gy. Foxl, Sli Dolomitic
LS. Tn wl. Sli. Chty.

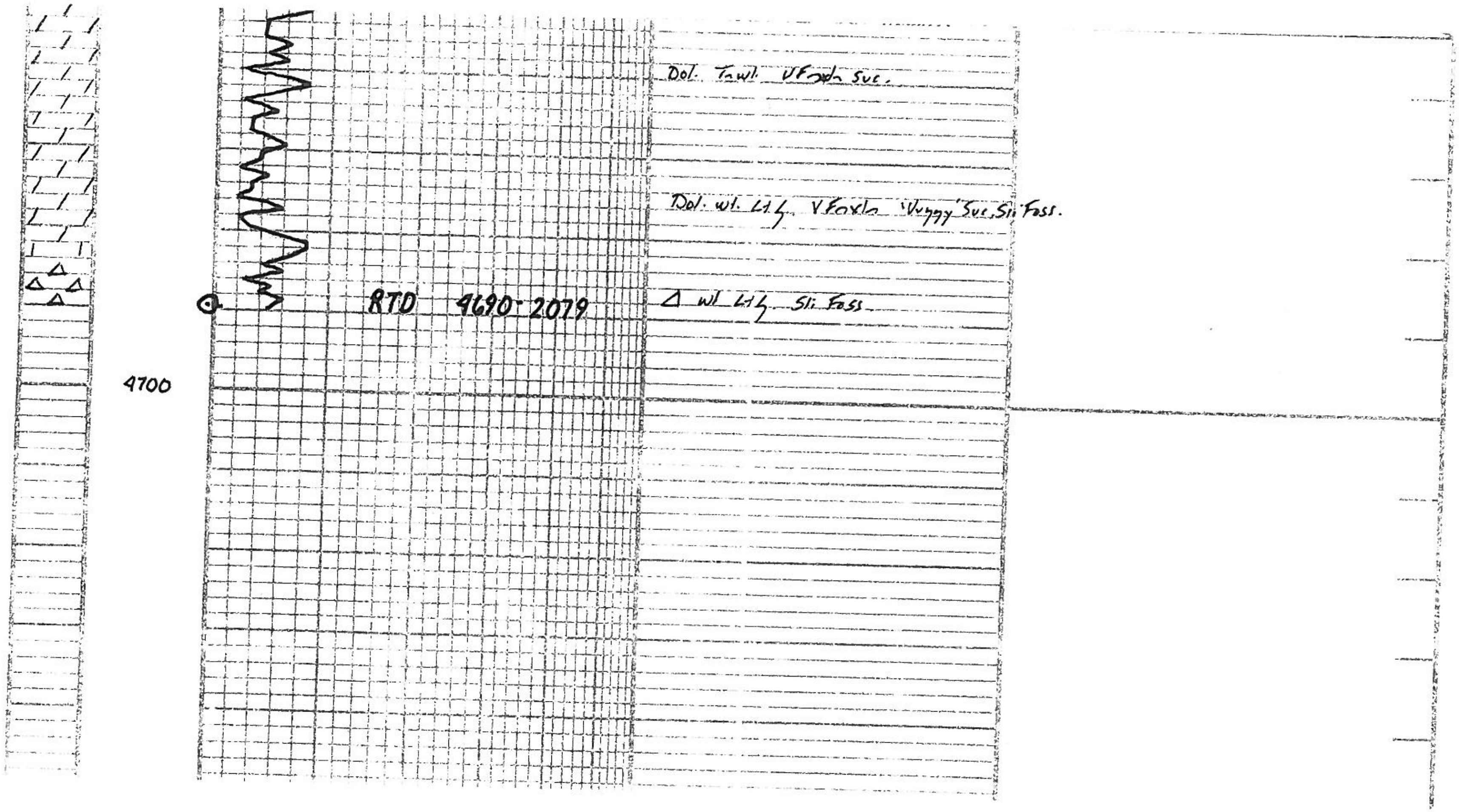

B/KC 9279 - 1668
Sh Gy.
LS. Tn wl. Sl. Foss Sl. Δ
Sh Blue Gy.
MARMATON 4304 - 1693
LS. Tn Lt Gy Dns.
Sh. Rd. Gy.
LS Tn Gy. Sl. Δ
Δ Gy.
LS. Lt Gy. Sli Foss. Celestite
LS. wl. Sl. Foss Sl. Chty.
Sh. Gy-Gy.
LS. Tn Gy. v Sl. Δ
Sh. Gy Lt Gy.
LS. wl. Sl. Foss. Sl. Δ
VIS: 46
WT: 9.1
WL: 6.8
CHL: 3300
4300
4400



Sh. Lt Gy. Lt
LS. Gy. Dns.
LS. Wt. Chlky,
LS. Gy. V Fxln Silty
Sh. Dk Gy.
Sh. Blk Carb.
FORT SCOTT 4450-1839
LS. Bf ool. Sli ϕ Dns. LS. Tn Lt Gy Sli ool fs P. Vug ϕ Lt Br Stn VSSFO Tr CAS. Gd Flour No Odor
LS. Wt Lt Gy Sli Foss Sli ϕ
LS. Tn ool. w/ Dk Bf ool.
CHEROKEE 4474-1863
Sh. Blk
LS. Gy. Lt Lt Sli Foss Sli Chlky P. Vug ϕ Lt Br Stn, VSSFO Tr CAS. VFt Odor. Dull Flour
LS. Lt Gy V Sli Foss, Sli ϕ Pelly ϕ Lt Br Stn VSSFO No Flour VFt Odor
Sh. Dk Gy.
LS. Lt Gy Wt Sli Chlky.
Sh. Gy.
JOHNSON 4511-1900
LS. Tn Wt Sli Foss Sli Chlky P ϕ Lt Br Stn SSFO Fr Flour, Ft Odor
B/JOHNSON 4520-1909
SAND 4526-1915
4500
DST (1)
DST (2)
DST (3)
VIS: 54
WT: 93
DST (1) 4435-4520
1st OPEN: Blow built to 1"
2nd OPEN: Surf. blow died 15 min.
30 - 60 - 45 - 75
Rec. 8' VSOCM (1% oil, 99% M)
FP: 12-14 15-16#
SIP: 296-69#
Temp. 117°F
DST (2) 4518-4540
1st OPEN: Blow built to 1 1/2"
2nd OPEN: Surf. Blow died 10 min.
30 - 60 - 45 - 75
Rec. 9' Mud w/ few oil spks.
FP: 11-12 13-15#
SIP: 1064-937#



Temp. 117°F
CHL: 3500
Bn Sat. Stn. ESFO Dull Flour. No Odor.
Sd Clr. w/ Fn:Md Gn Sub Rd Dns.
w/ Tr Pyrite; Sh Incl. No Show
VIS: 43
WT: 9.5
WL: 7.2
CHL: 3100
Sd Clr. w/ Fn Gn Sub Rd Dns. w/ Tr Pyrite.
DST(3) 4516-4570 (STRADDLE)
1st OPEN: Blow built to 10" BB: None
2nd OPEN: " " Bottom Bucket 37 MIN. BB: "
30-60-45-90
Sd Dns. w/ Fn Gn Sub Rd.
Sd Clr. w/ Fn:Md:Co Gn Sub Rd. w/ Tr Pyrite; Sh Inclusions.
No Show
Rec. 78' SWM (13% w. 87% M)
189' OMW (90% w. 10% M)
TF: 267'
FP: 13-68 69-140#
SIP: 1274-1276#
Sd Clr. w/ Fn Co Gn Gn Dns.
CHL: 22,000
RW: .51 @ 92°F
PH: 7
BIT TRIP @ 4586
Temp. 128°F
Δ Tr w/ Lt Gy Foss.
Sh Gr. Gy.
MISSISSIPPI 4597-1986
4600
LS. Tr Bu Sli Dol Foss Calcitic.
Dol. Lt Gy. V Fnxln Suc. 'Vuggy'
Dol. Gy. V Fnxln Suc. 'Vuggy' Sli Foss.
LS Tr Bu Sli Δ
Dol. Tr Bu Fnxln w/ Dk Gy Incl.


Dol. Tan-wh. VFxln Suc.
Dol. wt. Lt Ls. VFxln 'Vuggy' Suc. Sli Foss.
Δ wt. Lt Ls. Sli Foss.
RTD 4690 -2079
4700