Marc Downing

Consulting Petroleum Geologist
1411 Washington Circle
Hays, Ks 67601
Phone: 620-428-1356 (cell) 785-621-2286

GEOLOGIC REPORT LOG

COMPANY Downing-Nelson Oil Co. Inc.

WELL Tammy 'A' #1 Unit

FIELD Wakeeney

LOCATION 2370' FNL & 2225' FWL

SEC. 26 TWP. 11s RGE. 23w

COUNTY Trego

STATE Kansas

OPERATOR ONOCI

CONTRACTOR Discovery Drilling Rig #3

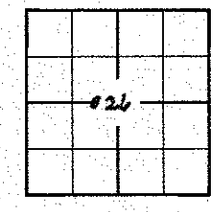
COMM: 3-15-13 COMP: 3-22-13

CASING RECORD

SURF: 8 5/8" @ 221' PROD: 5 1/2" @ 4149'

TOTAL DEPTH DRILLERS: 4150'

TOTAL DEPTH LOG: 4150'



PRODUCTION LKC

ELEVATION KB 2390'
DF
GL 2382'

Drilling Measured From: KB

Samples Saved From 3600 To: TD

Drilling Time From 3200 To: TD

Samples Examined From: 3600 To: TD

Geological Supervision From 3600 To Total Depth

Wellsite Geologist Ron Nelson

Electrical Surveys NABORS - DENSITY-NEUTRON, MICRO, DUAL IND., SONIC

FORMATION TOPS AND STRUCTURAL POSITION

FORMATION	SAMPLE TOP	ELECTRIC LOG TOP	SUB-SEA DATUM	STRUCTURAL POSITION
TOP ANHYDRITE	1838	1838	+552	-6
BASE ANHYDRITE	1877	1880	+510	-6
TOPEKA	3382	3380	-990	+12
HEEBNER	3598	3596	-1206	+13
TORONTO	3620	3618	-1228	+13
LKC	3633	3630	-1240	+13
BKC	3860	3862	-1472	+7
MARMATON	3972	3972	-1582	+2
CHEROKEE SHALE	4018	4017	-1627	+1
CHEROKEE SAND	4034	4034	-1644	+5
ARBUCKLE	4072	4072	-1682	+14

REFERENCE WELL FOR STRUCTURE Hount #1 (Mono Owwo) a dry hole @ SW-SW-NE Section 26-11s-23w

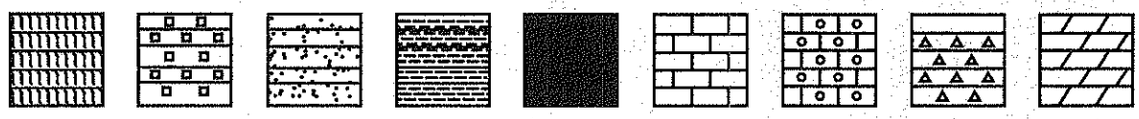
DRILL STEM TESTS

No.	Interval	IFP/Time	ISIP/Time	FFP/Time	FSIP/Time	IHP-FHP	RECOVERY

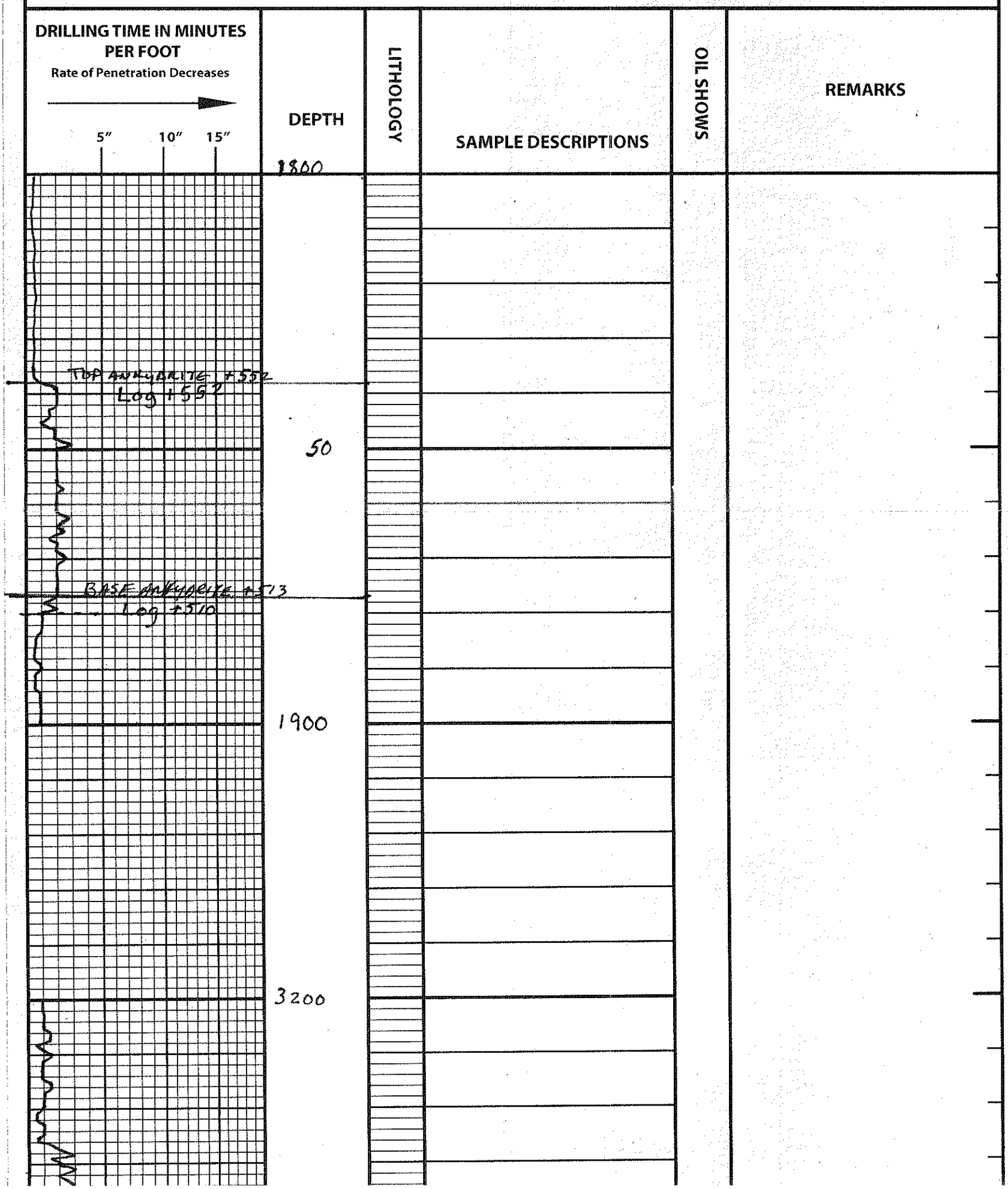
REMARKS AND RECOMMENDATIONS Based on samples shows, DST's, & Log, ran 5 1/2" Production pipe for multizone LKC completion.

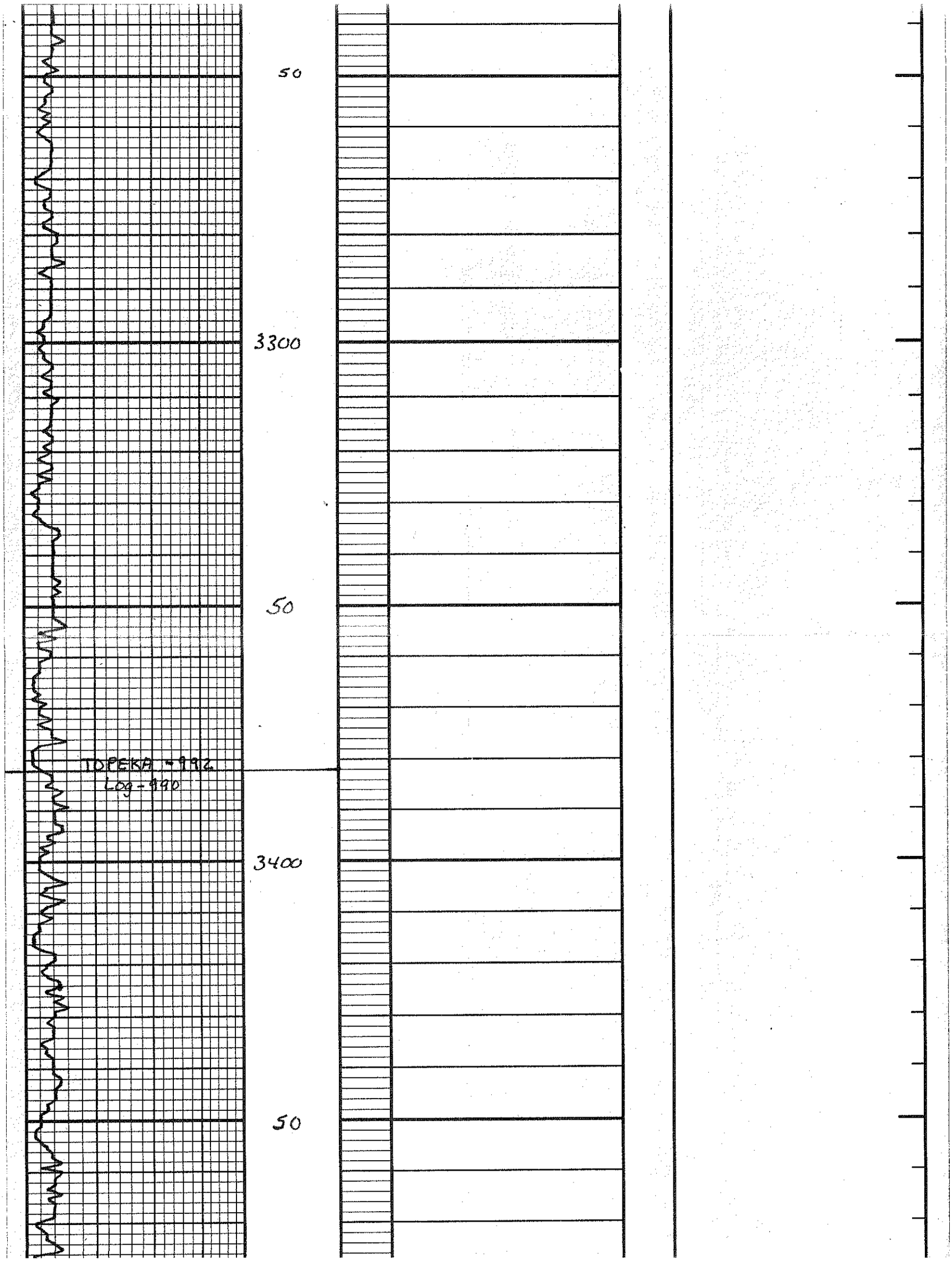
Ron Nelson

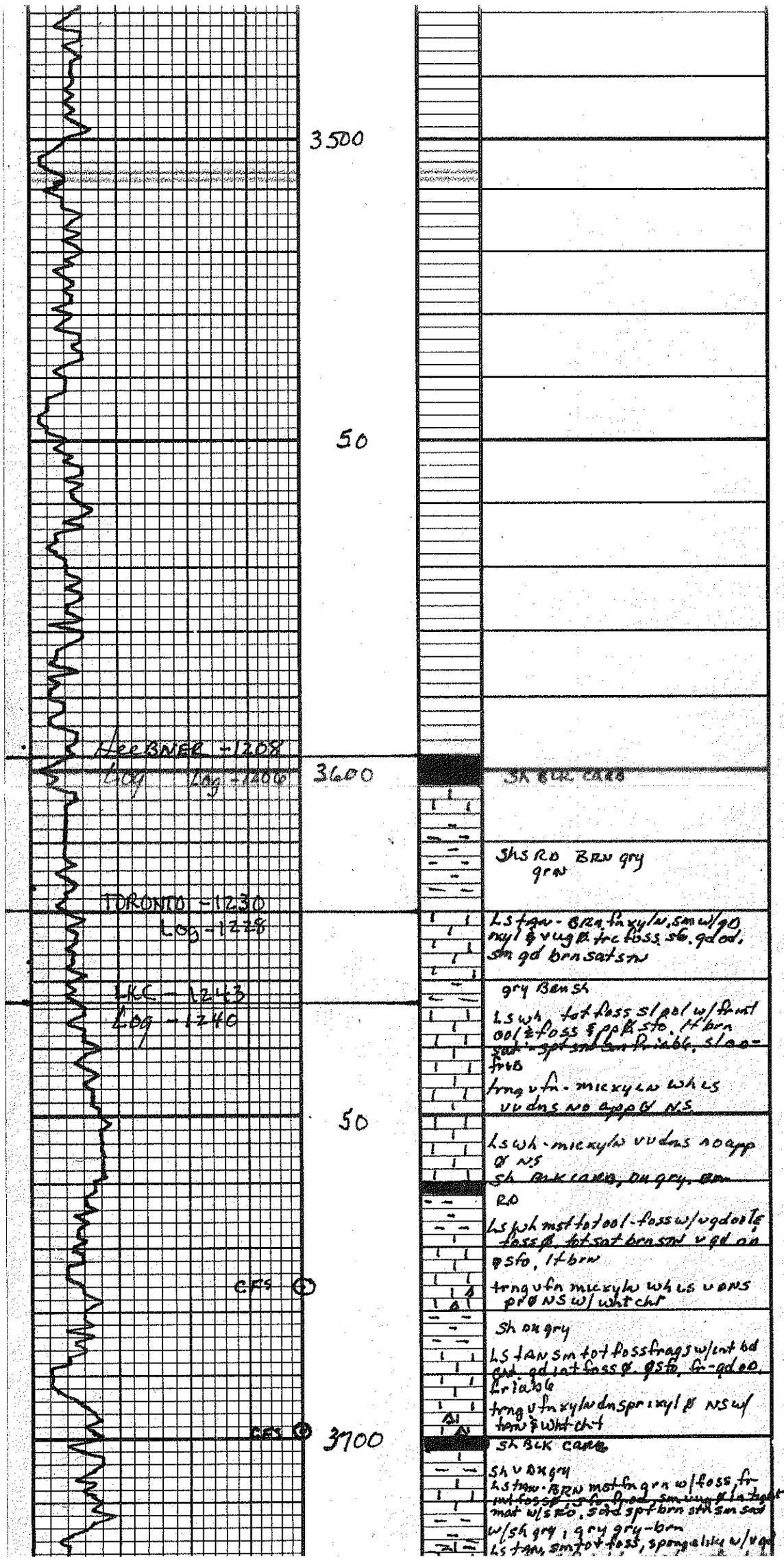
LEGEND



Anhydrite | Salt | Sandstone | Shale | Carb sh | Limestone | Ool.Lime | Chert | Dolomite




50
3300
50
TOPEKA -996
LOG-990
3400
50



DST #1
3655'-3676'
30"-45"-30"-45"
1st op BOB 2½"
3½" SI Blow
2nd op BOB 2"
BOB SI Blow in 12"
IFP 51-263
FFP 298-400
SIP 588-587
HP 1744-1609
REC: 700' GIP
40' GGO
210' GOMCW
15%g; 70%o: 20%m: 58%w
595' MCW
34° Gravity 125,000 chlor

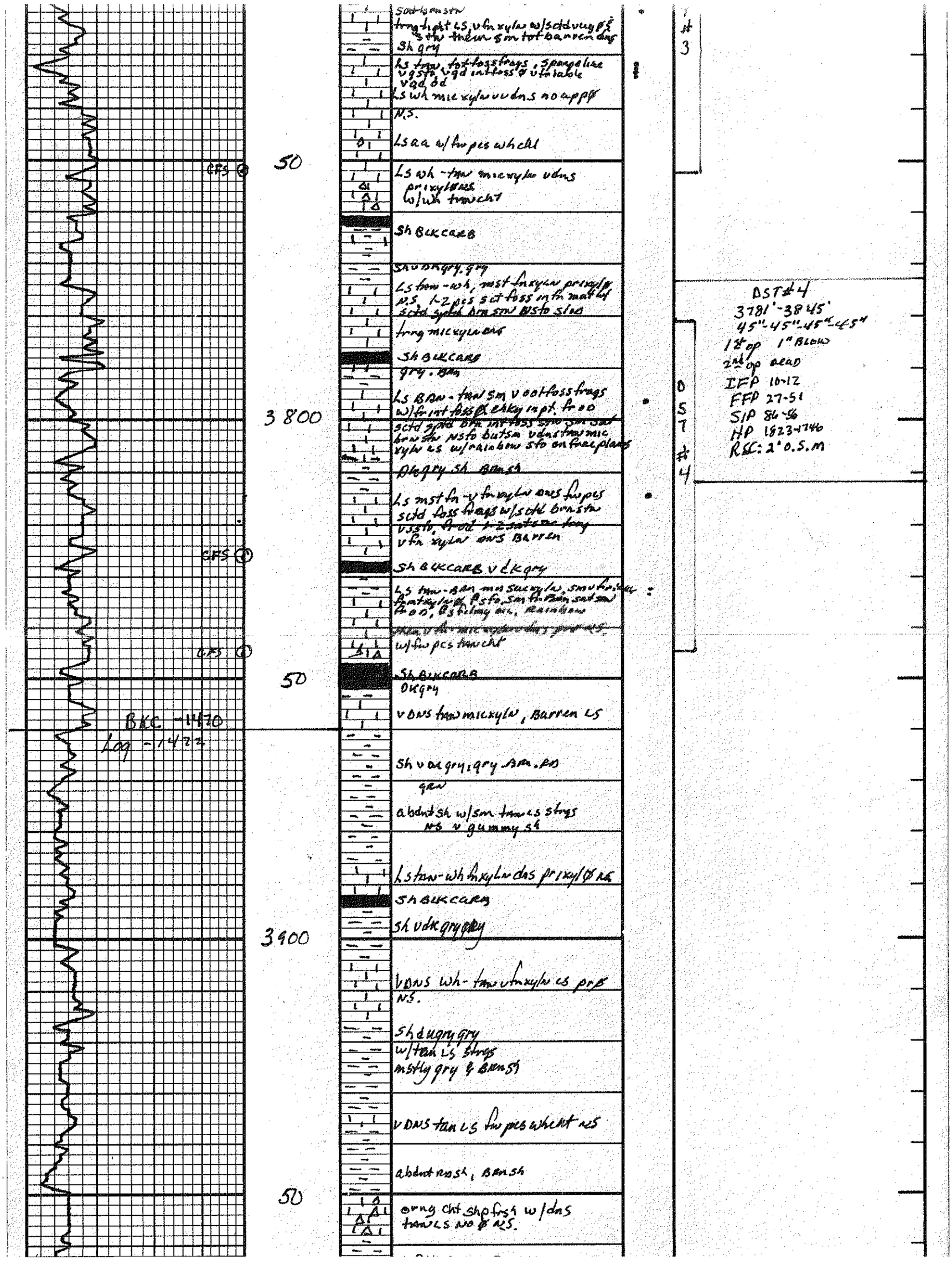
DST #2
3678'-3699'
30"-45"-30"-45"
1st op BOB 3"
5½" S.I. Blow
2nd op BOB 3"
BOB S.I. Blow in 1¼"
IFP 25-99
FFP 94-161
SIP 467-439
HP 1762-1674
REC 1217' gas
103' CGO
63' W&MCO
(70% oil, 10% w, 20% m)
189' MCW
Gravity 38° CHLOR 41,000

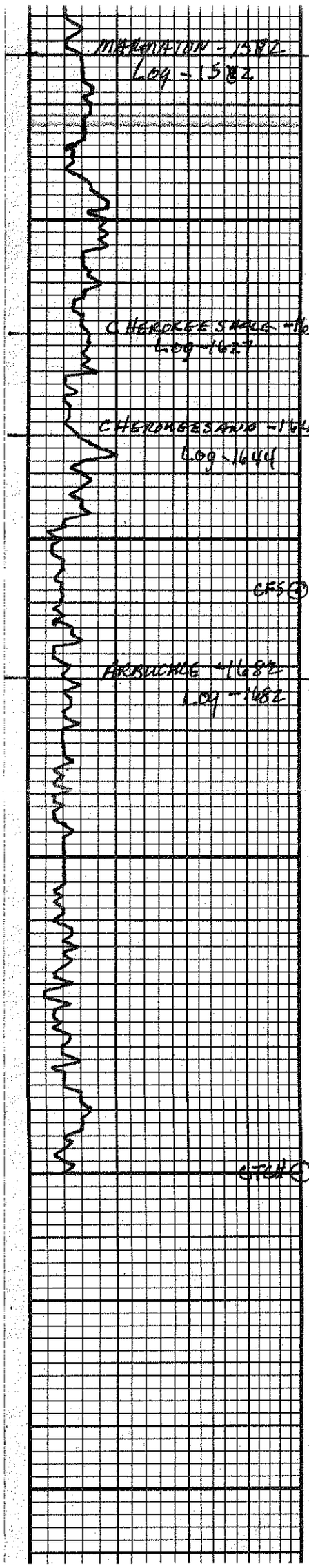
DST #3
3697'-3752'
30"-45"-30"-45"
1st op BOB 2"
SI BOB 6"
2nd op BOB 2" - GTS - TSTM
SI BOB 11"
IFP 71-275
FFP 285-435
SIP 633-625
HP 1776-1719
REC: GTS - TSTM
318' MCO (20%m: 80%o)
1036' GCO (20g: 80%o)
Gravity 38°

DST #1

DST #2

D


CFS
50
3800
CFS
CFS
50
BKC -1470
Log -1472
3900
50
Sh bk carb
Sh v dk gry gry
DST #4
3781'-3845'
45"-45"-45"-45"
1st op 1" blow
2nd op dead
IFP 10-12
FFP 27-51
SIP 86-96
HP 1823-1746
REC: 2' O.S.M
DST #4



MISSENATION - 1582
Log - 1582

LS tan-wh gry v fn-mic xyln v ons no app NS. w/ cht wh tan
Bp shp frsh

ABOVE shp frsh vari color cht w/ ons tan LS

4000

LS tan-gry-Brn v ons no app Ø NS.

LS aa ~~more gry-Brn~~ but w/ sl more cht tan wh shp frsh

CHEROKEE SHALE - 1628
Log - 1627

Sh Blk gry Brn RR

CHEROKEE SAND - 1644
Log - 1644

ABOVE SS clsts, sm fn gra sub rnd in v lmy matr, wh. dirty, sm Brn mat
Sm crs clr qtz grns - mo grn, rnd w/
~~Arkd. frgl clsts, sm fok sat bas stain~~
Sh, sm Not barren, sl od
w/ cht tan wh

50

mstly cht wh, ~~tan sp, shp frsh~~
NS
w/ int bd RD & mstly gry Sh

CFS

mstly cht & Sh aa

Sh gra gry

ARBUCKLE - 1682
Log - 1682

DOLO tan-ltgry, mst fn rhom xyls dns-mod dns
Sltd, xyl & ppd, tr pcs w/
Blk-Brn Sp bd stn sl od.
v ss to. mst Barren

~~Thin bed tan gry fn rhom~~
xyln ons prp
Barren No od

4100

DOLO gry mod ons fn int xyln Ø NS.

tang wh ons fn rhom xyln LS NS.

tr pcs mg-cgs rhom xyln DOLO w/ fn-gd int xyl Ø ns

aa

ons gry DOLO pr Ø ns

aa

CTH

50

Ronkelsu

5" 10" 15" DRILLING TIME Minutes/Foot → Rate of Penetration Decreases	DEPTH	LITHOLOGY	SAMPLE DESCRIPTIONS	OIL SHOWS	REMARKS

CONTRACTOR Discovery Drilling Rig#3

LEASE Tammy "A" #1 Unit IP LKC

ELEVATION 2390' KB RTD 4150'

LOCATION 2370' FNL & 2225' FWL

SEC 26 TWP 11S RNG 23W

COUNTY TREGO STATE KANSAS