

# Arden Ratzlaff

PETROLEUM GEOLOGIST

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107 N. Market 808 Bitting Bldg. Wichita, KS 67202

COMPANY CHIEFTAIN OIL CO., INC.

LEASE JAKE No. 3

FIELD TRAEFAS

LOCATION NW NE SE NE

SECTION 13 TOWNSHIP 33S RANGE 11W

COUNTY BARBER STATE KANSAS

CONTRACTOR FOSSIL DRILLING RIG NO. 2

COMMENCED DRILLING 7-19-11

COMPLETED DRILLING 7-30-11

RTD 5234 FEET LTD 5234 FEET

MUD UP AT 3100 FEET MUD TYPE CHEMICAL

## DRILLING TIME AND SAMPLE LOG

### ELEVATIONS

KB 1596

DF 1594

GL 1588

Measurements Are All  
From K. B.

### CASING

8 5/8" @ 332' W 250 SX

5 1/2" @ 5232' W 225 SX

### ELECTRICAL SURVEYS

**LOG-TECH - GAMMA RAY, DUAL  
INDUCTION, COMPENSATED NEUTRON  
& DENSITY, S. P. & CALIPER**

### FORMATION TOPS

### SAMPLE

### ELECTRIC LOG

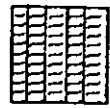
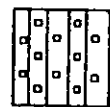



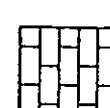
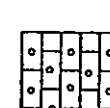
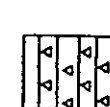
HEEDNER	3719 (-2123)	3719 (-2123)
LANSING	3928 (-2332)	3928 (-2332)
BASE KANSAS CITY	4409 (-2807)	4401 (-2805)
CHEROKEE	4594 (-2998)	4591 (-2995)
MISSISSIPPIAN	4609 (-3015)	4609 (-3013)
KINDERHOOK	4835 (-3239)	4835 (-3239)
VIOLE	4948 (-3152)	4947 (-3251)
SIMPSON	5042 (-3446)	5000 (-3444)
ARBUCKLE	5190 (-3594)	5191 (-3595)
TOTAL DEPTH	5234 (-3138)	5234 (-3638)

REMARKS AFTER ANALYZING ALL OF THE FEATURES FOR A PRODUCING WELL THE DECISION WAS MADE TO SET PRODUCTION CASING IN EXPECTANCE OF A GOOD PRODUCER.

*Arden Ratzlaff, Petroleum Geologist*

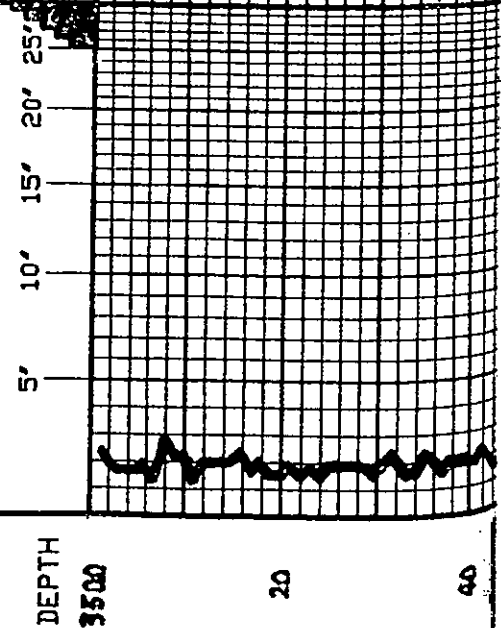
NOTE: NATIVE AMERICAN FURNISHED THE MUD - TRILOBIT THE DRILL STEM TESTS - SAMPLES DEPOSITED AT THE K.G.S. SURVEY

## LEGEND

	Anhydrite
	Salt
	Sandstone
	Shale
	Carb sh
	Limestone Dol. Lime
	Chert
	Dolomite

DRILLING TIME IN MINUTES  
PER FOOT

Rate of Penetration Increases



DEPTH  
3500

20

40

### SAMPLE DESCRIPTIONS

### REMARKS

SHARPENED GEL. GEL. CON. RED. TO HARD F.  
FOR DR. LOG. BY J. T. HANSEN  
V. N. DR. TO DENSE HARD L. M. T. P.  
R. G. L. L. L. M. T. P.

LITHOLOGY

60  
80  
3600  
20  
40  
60  
80  
3700  
20  
40  
60  
80

LM. CRM. BLUE GRAY & TAN. FN. YLN.  
SUB-CILKY & TO CILKY TO DENSE &  
HARD W. MED TO DK GRY. BLK. GRY-  
GRN. & RED SH.

SH. MED GRY. GRY-GRN. SM DK GRY &  
RED W. LM AS ABOVE

SH. MED TO DK GRY. GRY-GRN. V. SCOT  
BLK & RED W. CRM. BLUE & TAN. FN. YLN.  
SUB-CILKY TO DENSE. HARD LM. SCAT  
LT GRY W. SM BLK. SPKS. SILTY LM.

SH. AS ABOVE W. SILTY LM AS ABOVE  
PLUS GRY. TAN & BRN. FN. YLN. SUB-  
CILKY TO PRE-DENSE. HARD LM.

SH. MED GRY. GRN. GRY-GRN. SM BLK &  
RED W. LM. SILTY LM AS ABOVE

SH. AS ABOVE W. SILTY MICA & LT GRY.  
STILL RED. GRN. BLK. SH.

SH. MED GRY. GRY-GRN. SM. RED. SILTY &  
LM. IN PART W. SCOT. BLUE. TAN & BRN.  
FN. YLN. DENSE. HARD LM.

SAME W. SCAT. BLK. SH.

**HEBNER 3719**  
**-2123**

SH. BLK. CARB. (GAT. RUBBLES) PLUS SH  
AS ABOVE & BLUE. GRY. TAN & BRN.  
FN. YLN. PRE-DENSE. HARD LM.

LM. WIL. CRM. LT GRY (GRN. TINTED) BLUE  
& TAN. FN. YLN. PRE-DENSE & HARD.  
SM. SUB-CILKY & TO CILKY. SM. SH.  
AS ABOVE PLUS RED SH.

SAME AS ABOVE

SH. MED TO DK GRY. GRN. GRY-GRN.  
SCAT. BLK & RED PLUS LM AS ABOVE

3800

20

40

60

80

3900

20

40

60

80

4000

20

40

LM-BUFF GRV TAN & TR BRN EN XIN  
PRED DENSE & HARD W. SILTS ABOVE

LM & SILTS ABOVE

SH-GRV-GRN GRV & SCOT BLK V SCOT  
RED W. LT GRV SILTY SILT CL. DENSE  
HARD LM

SILT & SILT-LT GRV SILT-LT GRV W. SM  
TR BRN W. SILTS ABOVE & SCOT SILTY  
IN

SAME W. SCOT BUFF TAN & TR BRN EN  
XIN DENSE HARD LM

SILT-LT GRV BLK SP. PLUS MED TO  
DR GRV & BLK SW W. SCOT GRV BUFF  
TAN & BRN EN XIN PRED DENSE HARD LM

LANSING 3928  
-2332

LM-BUFF GRV TAN & BRN EN XIN  
PRED DENSE HARD W. MED TO DR GRV  
GRV-GRN GRV & TR BLK IN - STILL  
SCOT SILT

LM-CRM BUFF GRV TAN & BRN EN XIN  
SUB-CHLKY TO PRED DENSE & HARD  
PLUS CRM GRV & TAN EN TO TR CRTE  
OOD LM W. SPOTTY DULL FLOR. BRDR  
PAR? (PERTH?) - NO GAS OR OIL SHOW

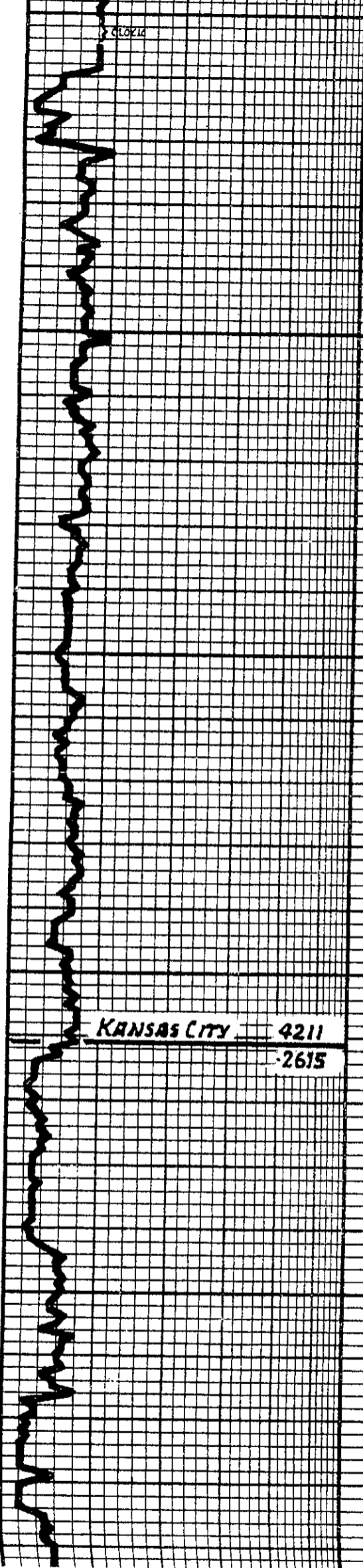
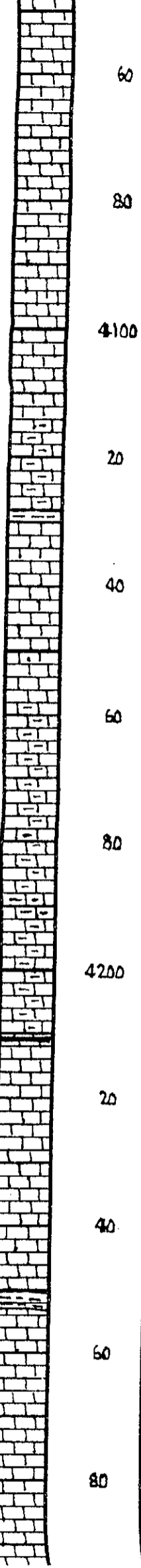
LM-CRM BUFF GRV TAN & BRN EN  
XIN SUB-CHLKY TO TR CHLKY TO PRED  
DENSE & HARD

LM AS ABOVE

LM-CRM BUFF GRV TAN & BRN EN  
XIN SUB-CHLKY TO PRED DENSE &  
HARD & TR INH. CHLKY LM

LM AS ABOVE

LM-BUFF GRV TAN EN XIN



**KANSAS CITY** — 4211  
— 2615

1 M. WH. CRM. BLUE GRN TAN & BRN EN  
YLN SUB-CHLKY & SCAT CHLKY TO DENSE  
& HARD

1 M. CRM. GRN TAN & BRN EN YLN  
SUB-CHLKY TO DENSE & HARD

1 M. CRM. BLUE GRN TAN & BRN EN YLN  
SUB-CHLKY TO DENSE & HARD

1 M. BLUE GRN TAN & BRN EN YLN  
SUB-CHLKY TO DENSE & HARD  
W/ SCAT MED TO DK GRN & BLK SH

1 M. & SH AS ABOVE W/ SILLING IN SH  
CONTENT & TO SHLY LT GRN SILT.

1 M. BLUE GRN TAN & BRN EN YLN  
DK GRN TO BLK (OR GRN) IN PART DENSE  
DENSE & HARD W/ CONS DK GRN/BLK SH

SAME W/ SCAT GRN-GRN & GRN SH

1 M. LT GRN BLUE TAN & BRN EN YLN  
SUB-CHLKY TO DENSE & HARD W/  
CONS DK BRN & DK GRN EN YLN OR GRN  
V. DENSE & HARD 1 M. & DK GRN & BLK &  
GRN-GRN SH

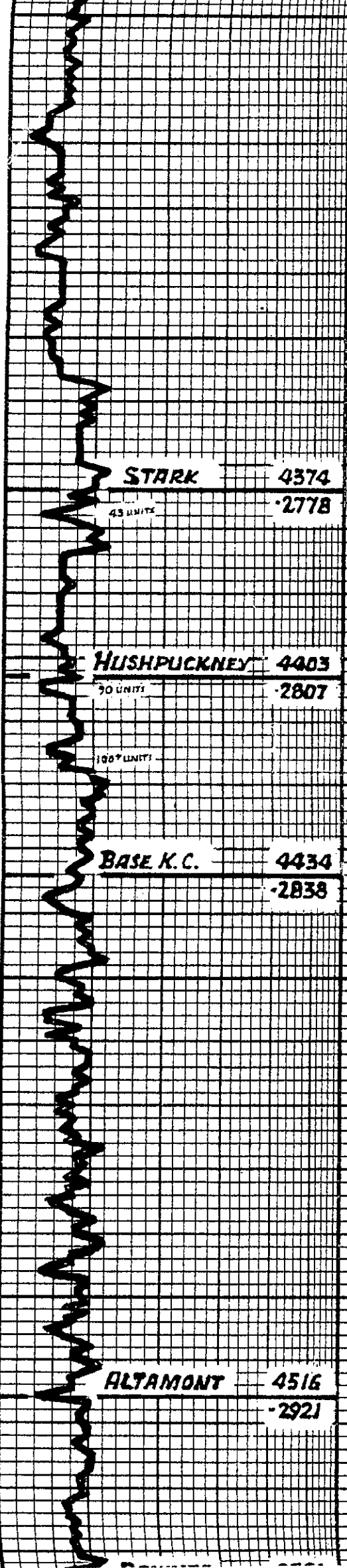
1 M. CRM. BLUE GRN TAN & BRN EN YLN  
SUB-CHLKY TO DENSE & HARD PLUS 1 M  
WH. CRM. CHLKY & SUB-CHLKY TO BLUE  
& GRN SILT CRM 1 M. W/ SPOTTY BRN  
OR M. YUG & INTER-XLN POR-N.S.

1 M. AS ABOVE W/ BRN 1 M. PLUS V. SCAT  
LT GRN FRESH SUB-TRANSL. CRYP

1 M. CRM. BLUE GRN TAN & BRN EN YLN  
SUB-CHLKY TO DENSE & HARD-PT CRYP  
AT ABOVE

1 M. WH. CRM. LT GRN BLUE TAN EN  
YLN SUB-CHLKY & 3 M. CHLKY TO DENSE  
HARD 1 M.

4300  
20  
40  
60  
80  
4400  
20  
40  
60  
80  
4500  
20  
40



**STARK** 4374  
4378

**HUSHPUCKNEY** 4403  
4407

**BASE K.C.** 4434  
4438

**ALTAMONT** 4516  
4521

1M. CRM. BLUE GRAY & TAN EN XIN SUB-CHILKY TO DENSE & HARD W/ SCOT MED TO DV GRAY & GRAY-GRN SH

1M AS ABOVE W/ BRN 1M BLUE V SCOT LT GRAY & BRN. FRESH SNRP. FOKS. SUB-TRAIL. CRT

1M L CRT AS ABOVE

1M LT GRAY BLUE TAN & BRN EN XIN DENSE HARD 1M IN CRT AS ABOVE

SH. BLK. V CARB (GAS BUBBLES) IN BLUE GRAY TAN & BRN EN XIN. PREP DENSE HARD 1M

SH. BLK. CARB & SCOT GRAY-GRN. PLUS CRM. BLUE LT GRAY & TAN EN XIN. SUB-CHILKY TO DENSE. HARD 1M

SH & 1M AS ABOVE PLUS BLUE EN XIN. PREP DENSE & HARD. SCOT PIECES IN TINY FLUIDS IN SECONDARY RE-XIN. BULKY SPATTY TO SAT W/ F. WIG (TR. BLIGHT) PREP. BOOR. PIP. GAS BUBBLES. WHEN BROKEN - FAIR GAS ODOR

0002 SCOT SHOWS PIECES AS ABOVE & 1M CHILKY 1M - W/ BK ODOR (60 MIN GRC) SH. MED TO DV GRAY GRAY-GRN. PLUS CRM. BLUE GRAY TAN & BRN EN XIN. SUB-CHILKY TO DENSE. HARD 1M

SH. BLK. CARB W/ TM MED TO DV GRAY GRAY-GRN PLUS LT GRAY BLUE TAN & BRN EN XIN. SUB-CHILKY TO DENSE. HARD 1M

SH. MED TO DV GRAY GRAY-GRN TO BLK W/ SCOT 1M AS ABOVE

1M GRN LT GRAY BLUE & TAN EN XIN. PREP DENSE & HARD W/ MED TO DV GRAY GRAY-GRN & TO BLK SH

1M GRN LT GRAY & BLUE EN XIN. PREP DENSE & HARD W/ SCOT SH AS ABOVE

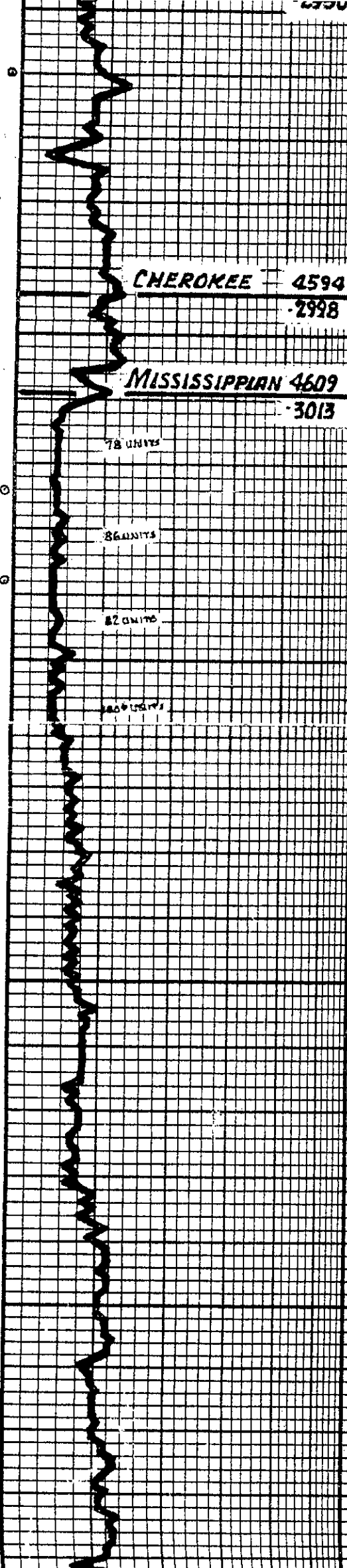
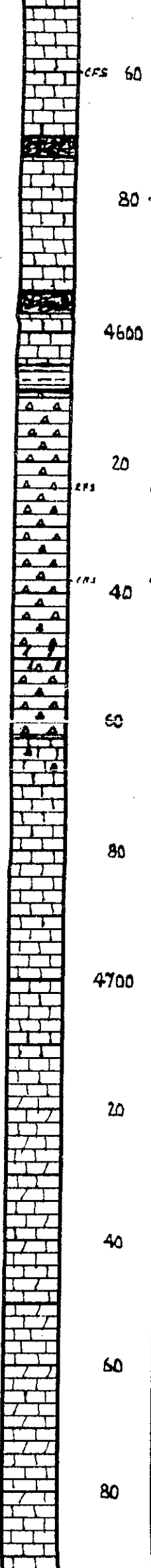
1M BLK CRM. BLUE GRAY & TAN EN XIN. SUB-CHILKY TO CHILKY TO DENSE & HARD W/ SCOT MED TO DV GRAY BLK. GRAY GRAY-GRN SH

1M AS ABOVE - PREP DENSE & HARD

**DST No 1(4401-4449)**

30-45-45-60  
WEAK BLOW TO 1 1/2" IN BUCKET (1st OPEN)  
WEAK 1" BLOW DIED IN 40 MIN (2nd OPEN)  
REC: 20' MUD W. OIL SPECKS IN THE TOOL.  
151P/44# FS1P/40#  
1FP/19-23# FFP/19-23#  
TEMP: 115°F.

STRAIGHT HOLE SURVEY AT  
4409 = 3/4"



GRY TAN LT BRN EN XIN SUB-CHILKY  
 TR CHILKY TO DENSE & HARD

LM. WH. CRM. BLUE. GRY. TAN & BRN.  
 EN YLN. SUB-CHILKY & TR. CHILKY TO  
 BRN DENSE & HARD

SH. BLK. CARB. & TR. GRY. BLUE. BRN.  
 LM. AS ABOVE

**CHEROKEE 4594 -2998**

LM. AS ABOVE IN BLK. CARB. MED TO  
 DR. GRY. CARB. GRY. - GRN. SH.

**MISSISSIPPIAN 4609 -3013**

(4670) CHRT. CRM. LT. GRY. & TR. BLUE. FRESH  
 SUB-TRANS. TO TR. DR. EN. YLN.  
 FRAC. IN TAN. STN. IN. DR. GAS. BUBBLES  
 & NEAR. CLEAR. OIL. DR. PLETS. BLUE. FEW  
 PIECES. LT. GRY. & TAN. CURT. & DR. MIXED  
 DR. V. S. SUCR. AL. TAN. STN. TR. GAS. BUBBLES  
 & TINY. OIL. DR. PLETS. GOOD. ODR.

(4675) CHRT. LT. GRY. BLUE & TR. TAN. FRESH. BRN.  
 SUB-TRANS. & SH. SPOTTY. TAN. FRAC.  
 IN TAN. STN. BLUE & DR. CARB. IN. DR.  
 DR. OIL. TAN. & BRN. STN. SPOTTY. TAN. FRAC.  
 & NEAR. CLEAR. OIL. DR. PLETS. GOOD. ODR.

CHRT. & CHRT. & DR. MIXED. IN. SCRT. TAN.  
 EN. YLN. V. S. SUCR. DR. W. SPOTTY. TAN. FRAC.  
 DR. EL. DR. TR. CLEAR. OIL. DR. PLETS.  
 WEAK. ODR.

CHRT. WH. & LT. GRY. FRESH. TR. DR. TAN.  
 BRN. SUB-TRANS. SUB. TR. DR. FRAC.  
 DR. BLUE. CURT. & DR. MIXED. PIECES  
 IN. DR. TAN. DR. & V. SCRT. BLUE. GRY.  
 & TAN. EN. YLN. BRN. HARD. LM. TR. OIL.  
 DR. PLETS. - GOOD. ODR.

LM. LT. DR. BLUE. GRY. TAN. & BRN.  
 BRN. TAN. DENSE & HARD. W. V. SCRT.  
 'SHOW' PIECES AS ABOVE - WEAK. ODR.

LM. & CHRT. AS ABOVE - FINE. ODR.

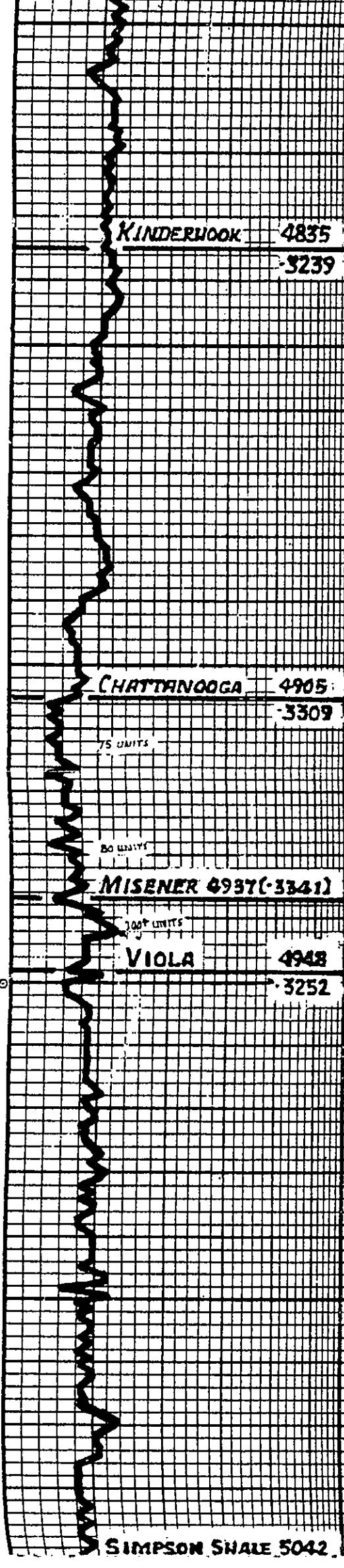
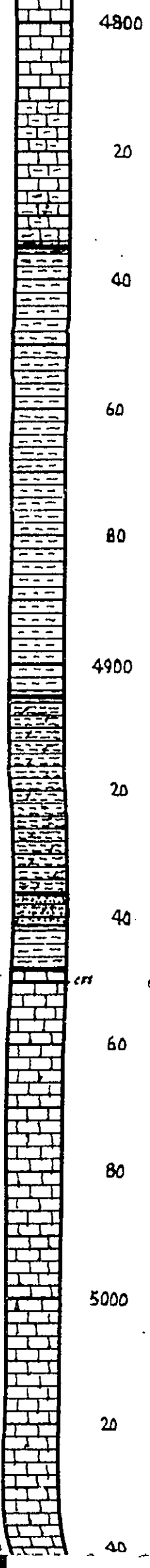
LM. AS ABOVE IN. DR. LT. GRY. & WH.  
 FRESH. BRN. SUB-TRANS. CHRT. &  
 FEW. SCRT. 'SHOW' PIECES AS ABOVE.  
 FINE. ODR.

LM. SH. DR. IN. PART. FAL. YLN. SUB-  
 CHILKY TO BRN. DENSE & HARD.

LM. DR. IN. PART. LT. & TR. GRY. TAN. &  
 BRN. EN. YLN. BRN. DENSE & HARD. W. TR.  
 LT. GRY. & TAN. EN. YLN. IN. TAN. CURT.  
 IN. DR.

LM. LT. & MED. GRY. BLUE. & TAN. EN. YLN. BRN.  
 DENSE & HARD. W. CRM. WH. & GRY. FRESH  
 SUB-TRANS. TO SUB-DR. CHRT.

LM. WH. CRM. BLUE. GRY. GRY. GRN. &  
 TAN. EN. YLN. CHILKY & SUB-CHILKY TO  
 DENSE & HARD. W. SCRT. MED TO DR. GRY.  
 GRY. GRN. & BLK. SH.



LIM. WH. CRD. LT. GR. BR. Y. IN. CH. UN. &  
 SUB-CH. IN. GRN. BLUE. TAN. & BRN.  
 FN. YLN. SUB-CH. TO DENSE. HARD  
 LIM. W. MED. GR. & BL. GR. L. BK. CR.  
 WASHES GR.

LIM. & SH. AS ABOVE - W. GR. UN.

**KINDERHOOK 4835**  
**3239**

SH. MED. TO DK. GR. GRN. GR. - GRN. BL. Y.  
 STILL LIM. AS ABOVE (W. CH. UN. & DENSE  
 HARD LIM.)

SH. AS ABOVE TO SOLICITARY

SH. MED. TO DK. GR. BL. Y. (W. CRD.) & GR. -  
 GRN. TO SOFT & W. UN. Y. GR. (W.)

**CHATTANOOGA 4905**  
**3309**

SH. BLK. (CRD.) DK. GR. SLI. DOL. &  
 SP. BEARING

75 UNITS

SH. BLK. & BRN. BL. Y. W. CRD. GAS  
 RUBBLES) SP. DOL. IN PART

80 UNITS

**MISENER 4937 (3341)**  
 9000' UNITS

**VIOLA 4948**  
**3252**

9000' UNITS

GRD. SP. LT. GR. & NEAR. WH. W. SOFT BLK. SPKS  
 EN. Y. EN. CR. UN. SUB. RND. TO W. L. -  
 RND. GR. UN. CLUSTERS II. HARD. BL. Y.  
 FAIR. EN. SP. TO SOFT. CR. UN. AND  
 BRN. CLUST. TE. ST. DILL. TRP.  
 BR. FLOR. SMALL L. UN. NEAR  
 CLEAR OIL DRAPETS, RAD. FLO. UN.  
 W. GR. CR.

LIM. WH. CRD. BLUE. GR. Y. TAN. EN. X. UN.  
 SUB-CH. TO DENSE. & HARD. W.  
 LT. GR. FRESH. SUB. TR. UN. L. RDN. DILL.  
 RDN. HARD. CR. UN.

LIM. AS ABOVE & CR. UN. AS ABOVE W. CR.  
 DILL. BR. UN. W. MICRO. ORGANISMS  
 IMBEDDED

LIM. AS ABOVE W. TAN. & BRN. CRD.  
 DILL. CRD. CR. UN. IN TINY BLK. ORGANISMS  
 IMBEDDED

LIM. & CR. UN. AS ABOVE W. MED. TO DK.  
 GR. CR. UN. (W. CR. UN. & GR. UN. W. CR. UN.)  
 CONS. LIM. & CR. UN. AS ABOVE

SH. GRN. GR. - GRN. MED. TO DK. GR. & TO  
 BL. W. LIM. & CR. UN. AS ABOVE

**DST No. 2 (4932-4950)**  
 30-45-60-60  
 WEAK BLOW BUILDING TO  
 12 INCHES 30 MIN (2" OPEN)  
 SLOW BLOW BUILDING TO  
 B.O.B IN 57 MIN (2" OPEN)  
 REG: 100' GAS IN PIPE & 100'  
 MUDDY WTR. W. SLI. OIL SPKS  
 IN TOOL (80% WTR & 20% MUD)  
 (CHLORIDES 7500 PPM)  
 151P/1312# P51P 1288#  
 1PP/19-39# FFP 44-83#  
 TEMP 128° F.

PIPE STRAP @ 4950'  
 STRAP 4924.95'  
 BOARD 4920.11'  
 STRAP LONG 4.24'

STRAIGHT HOLE SURVEY 4950'  
 DEVIATION = 3/4°

