CSO DAVIS "E" #1
C NE SE 25-5S-30W
DECATUR COUNTY, KANSAS

Contractor: Rains & Williams
Drilling commenced: 9/10/76
Drilling completed: 9/22/76

Elevation GL 2836
DF
RTD 4525 KB 2841
LTD 4521

Circulations
3860 - 30"
3875 - 30"
3896 - 15"
3960 - 90" DST 1, DST 2
3976 - 45" (clean out) 60" Core
4002 - 150" DST #3 (+ mud up)
4031 - 30"
4040 - 60"
4255 - 30"
4382 - 60"
4402 - 30"

TOPS

L	Davis	Koeperich	Schmall
SCRL	2575 (+266)	2575 (+265)	2581 (+278)
NEVA	3287 (-446)	3277 (-437)	3288 (-429)
FRKR		3393 (-553)	3403 (-534)
TOPK			
HBNR			
L-KC			
BKC			
FS			
CHRK			
MISS			
ABCK			

Bit Trip 2701
Smith F-2

Strap Board 2701.77
Strap 2699.1

1.67' Higher

2841
2575
266

?

① # Field Copies of Mud Log and to where

② KB-2841
GL-2836

Bit Trip 2701
Smith F-2
Strap 1.67' less footage

Morning Report (Monday)

Drilling @ 3115
Cimmaron Anhy. 2575 (+266) +1 Generally reddish ~~+2~~ Schmall
(Stone Corral)

Bit Trip - 2701
Strap 1.67' less than board

Frontier Mobil Rm 22
Rig phone #

2500-2575 Red & gray sh., lt. orange, f-g well sorted ss, minor amts. anhy.

Cimaron Anhydrite 2575 (+266)
2575-2610 wh. & pink anhy.

2610 - 2629 lt. gray f.g. calc. well sorted ss.

2629 - 2918 Varicolored sh and silty sh. + Red siltstones

Fort Riley 2918
lt. tan med. XLN sandy LS & cherty LS, SSDO in pinpoint Ø.

2955 lt. green chert
2972 wh. fxln dol. LS, V. minor Ø, NS.
3020 Dk. gray sh., sli. calc., platy.
3050 wh to pinkish wh. Vfxln shaly LS. (sh is red) No Ø, N.S.
3065 red sh. & silty sh.
3080 Dense Vfxln grayish wh. LS No Ø, N.S.

3090 - 3215 Red hematitic V.f.g. ss, + red siltstone, + red silty sh and sh.

Call J.D. @ 7130

Morning Report:
Drilling @ 3504
Neva LS 3287 (-446) -9

3213-3246 lt. tan to pinkish tan, fxln LS, sli sandy, No ∅, N.S.

Cottonwood LS 3246-53

lt. tan fxln LS, sli. fossiliferous

3255-58 Dense, red calcareous siltstone

3258 - ? Red non-calc. sh. & reddish orange vfg ss and siltstones + gray platy calc. sh.

Neva LS 3287 (-446)

Wh. med. XLN chalky LS, Fair to poor intercryst., sli foss., N.S.

3301 - lt gray tan v.f. XLN cherty LS, chert is wh. to lt. gray. No ∅ N.S.

3305 - dk gray to blk, shly LS and lmy sh., carbonaceous, v. foss,

3318 - lt. tan fxln LS, poor intercryst. ∅, N.S.

3328 - 3344 Varicolored calc. sh., gray, lt. green gray, and red.

3344 - 54 Red. v.fg. hematitic ss and siltstone, sli. calc., N.S.

Red Eagle LS 3360 (-519)

- wh. to lt. tan chalky fxln LS, poor ∅, N.S.
- dk gray v.fxln shaly LS, foss., NO ∅, N.S.
- 3380 tan f.g. silty LS, No ∅, N.S.

3388 - Dk gray, calc., shale, Foss. (small bra

Cont. T.D. @ 7:30

Foraker LS 3400 (-559)

3400-13 wh. to lt. tan MXLN chalky LS, fair to good ø (comoldic? in part) N.S.

3413-30 dk gray to blk v. shly LS and lm. sh., foss.

3430 lt. tan chlky f XLN LS fair to poor ø, N.S.

3436 Bedded chert, wh. to lt. gray,

3444 lt. gray f. XLN LS, NO ø, N.S.

3450 - lt. gray to greenish gray lmy sh

Indian Cave SS 3472 (-631)

3472 - Red silty sh. and Ufg hematitic SS,

3479 - lt. gray crypto crysf. LS, foss. (lge brac

- lt gray to gray M. XLN LS, fair to poor ø, N.S.

3500 wh. to tan wh. V fxln LS, No ø, N.S,

3542 lt gray v. fxln LS No ø, N.S.

TARKIO 3572(?) (3580-90 smpl.)

3572 - m. to c. xln pelletal LS. Black pellets in lt. tan sparry matrix. f. top. ø, N.S.

- lt. gray to gray f. M. xln LS, foss. NO ø, N.S.

Start wet and dry smpls @ 3670

3600 lt. tan f-m xln LS, foss. (fusulinids, brachs) chalky, poor ø, N.S.

3674-76 Soft wh. chalky LS

3684 - LS cg. in chlky shly matrix. sh. is red

Morning report Wed 9/15/76

Drilling @ 3820

Forraker: 3400 - (-559) -6 -25

SDO 3790-80
SDO 3810-20
} Florescence, No cut

3828 - 2 unit kick, SDO, good Flourescence, No Cut.

Circulate @ 3860 for 30 min, 30 min smpls.

Circulate @ 3870 for 30 min, 15 & 30 min smpls

Mud gelled up @ 3874 - 86
Viscosity est, 100
Lost circulation, drawn 24 min.
Regained circulation
100 unit methane kick 3886
(No wet gas)
[Shale gas accumulated during down time]

DST #1 3928-3960 (32' anchor)
Set pkr @ 3922
Alt. pkr. pt. 3919
Use dual pkrs.

Circ. catch 30 & 45 min smpls. Come off bottom 30'. Circ. til tester arrives. Back on bottom Circ. 45". Strap pipe on way out.
DST #1
Back on bottom. Drill to 3976, Circ. catch 30 & 45 min smpls

· TOPEKA 3691 (-850) -8
3690 wh. to lt. tan sl. chalky f-m XLN foss. LS, poor ø, N.

3732-36 LS cg in sh. matrix

3736? - H. tan med-coarse XLN chlky LS, fair ø, Ns

3742 Deer Crk. LS; lt. tan m. to c. XLN LS, chalky fair ø, SSDO
3750 Oread LS; lt tan m to c xln LS, foss, fair ø, N.S.

HEEBNER SHALE 3868 (-1067) -10
Dk, black, carbonaceous shale, sli. calcareous, brown streak

3873 Dense gray f to m XLN, foss LS
3880 Reddish orange non calcareous sh.

TORONTO LS 3900 (-1059)
wh. to lt. tan coarse xln, v. foss.,
→ Good SDO. v. poor ø.
Slight cut.

Lansing - KC 3914 (-1073) -9
"A" zone 3914- - wh., oolitic LS, ø/ sparite matrix. No ø, SSDO.
3936? - Reddish brown calcareous sh.

"B" zone 3940 wh to lt. tan c. xln LS, fair to poor intercryst. ø, show of free oil. 2½ unit methane & wet gas kick. Good cut.

21 —
22 —
23 —
24 —
25 —

4" Drilling blk 3950-54

9/16 Morning report
DST #1 3960
Tops: Topeka 3691 (-850) -8
Heebner 3868 (-1027) -10
Lansing 3914 (-1073) -9

Strap 1.07 < board
(3904-60)
DST #2 3928-60 (36' Anchor)
Dual packers
15-30-30-60
WB - SB 4mm
SG Throughout
Rec 1245' MOil 75% Oil
60' m o & wtr. Water Chlorides
ISIP 1325 FSIP 1317 27,000 ppm
1st op ~~IFR~~ 90-263
2nd op ~~FFR~~ 280-542

Core #1 3976-4002

9/17 Morning report
Coring @ 3980

3944-48 reddish brn sandy sh.
3948 - wh. c.xln LS, foss.
poss. frac. minor moldic ø, (oil stained)
SFO. Good cut.
3954 - wh. v.f xLN LS, NO ø, N.S.
3967 - Brown, grey, and green shales

"C" zone 3977.5 (see core Dex.

4002 LS, lt. tan to brown, c.xLN
foss., SSFO, SOS, poor ø.
4012 sh. maroon, calc.

"D" zone 4018
LS, wh. fxLN, chalky in part,
dense otherwize, Oil staining
on fractures
LS, wh. mxLN, oil staining on
fractures (?), fair intercryst.
SFO, good cut, 40 unit
gas kick (4033) over 30 unit
background

DST #3 3958-4005 (48' anchor)

Dual Pkrs.
set packer @ 3957
AH. packer pt @ 3956

Strap 7.84' < Board

1st WB-FB in 24 min
2nd SB throughout
Rec. 180' muddy oil
60' ocm
IFP 33/74 FFP 82/115
SIP 1349-1374

DST #4 4000-4040 (40' anchor)

Set packer @ 4000
AH packer pt. @ 3996
Strap - .96' < Board
No Blow, Flush Tool, No Blow throughout
Rec. 55' Drlg. M.
IFP 49/49 FFP 49/58
SIP - 1382 - 1374

Core #13 3976-4002 (26')
Rec. 25'

3976-77.5(?) green waxy calcareous shale

"C" 3977.5-83 lt. gray to lt. tan fossiliferous medium crystaline LS. Vertical fractures, moldic and small vugular (less than 3 mm), ø, bleeding oil. Stylolitic in part and with few green shale laminae. ø ≈ 10%

3983-85 lt. tan, fine crystalline, stylolitic LS, minor fractures and moldic ø (<5%) bleeding oil.

3985-85.5 green non-calc. laminated shale

3985.5-90 lt. tan fine crystalline, minor fracturing bleeding oil, otherwise tight

3990-94 lt. gray fossiliferous med. crystalline LS, stylolitic, few oil stained vertical fractures, otherwize tight.

3994-97 Greenish gray very fine crystalline, stylolitic, green shale laminae, few oil stained vertical fractures (partially calcite cemented) otherwize tight.

3997-4002 white to lt. tan very fine crystalline cherty LS, stylolitic, chert is fractured, otherwize tight.

10 Morning Report - Going back in Hole after DST #3
- DST #2 Corrections
SIP - 1325 - 1317
- Strap 5.07 < Board
- Mudlog on test 27,000 ppm
- DST #3 Results

DST #5 4034-74 (40' anchor)
Set pkr @ 4034
Alt. pkr pt.
1ST OP WB - FB / 20"
2ND OP WB / 30 sec. died
IFP 33/66 FFP 58/82
SIP 1284 / 1292
Rec. 30' FO (35° @ 74°F)
120' OCM

Back on bottom, circ. 60"
Core 4074 - 4098 (24' Core)
Reem out hole to 4098. Stop.

4036-52 Reds & gray sh. w/ minor amts. of blacksh.

"E" Zone 4052
4052-56 (drlg. brk) LS, wh to lt. tan, med. - cxln, foss. (forams) Good intercryst & moldic ø (≈15%) GSFO, Good cut.
4056-64 LS wh to lt. tan m-cxln, foss., fair to poor spotty moldic & intercryst. ø (≈5%) GSFO, Good cut.

4064 Reddish brown, gray & gray green shale.

"G" Zone 4078.5
(See Core description)

"H" Zone 4101
LS, lt. tan, M-FXLN, foss., No ø SSDO, NSFO

Bkc 4110 (-1269) (-4)

4110 - sh. red & gray, calc.
Some v. shly lm. & lmy. sh.

4122-30 red vfg. ss and siltstone, friable, [illegible], POOR ø, N.S.
4130-38 sh., gray, dense, non fissil

Morning Report 9/20

Drilling @ 4131
Core #2 4074-98 (Rec. 24')
BKC 4110 (-1269) -4

CORE #2 4074-98 (Rec. 24' core)

4074-78 Shale, brownish red, dense, calcareous, non fissile
78-78.3 Shale, grayish green, dense, calc., non fissile,
78.3-78.5 LS cg. in green, calc. sh. matrix
78.5-80.5 LS, FxlN lt. gray, mottled, few green sh. laminations, few vugs, otherwise tight N.S.
80.5-84 LS, FxlN lt. gray, sli. shly, sh. is red, No Ø, N.S.
84-87 LS, FxlN lt. gray, mottled, green shale lamination increasing downward, Sli. foss. No Ø, N.S.
87-90 LS, Hi tan, FxlN, stylolithic, sli. foss. w/ few green shale laminations - Sl. amt. of dead oil in small vugs @ 88.5, No Ø, N
90-92.8 as above but w/ more shale laminae. 4" dk green Lmy shale @ 91.5.
92.8-94 Sh, black, dense, calc.
94-98 Sh., dense, calc. red Non fissile
3" LS @ 94.2 is lt. tan, shly.

8' Vertical Fracture 81-92.8 No oil stain

Call Schlumberger

(1) Telecopier
(2) Dipmeter 3000 to T.D.
(3) 5"/100' surf. to TD.
(4) surface casing: 8 5/8 258
(5) Hole size: 7 7/8
(6) Chloride count 1000-2000

Call Tomy

(1) Dual Induction Laterolog ~~w/ Gamma Ray~~
(2) FDC, Gamma Ray w/ caliper.
(3) Borehole Compensated Integrated Sonic
(4) Dip Meter

~~SFL~~

(5) ~~Gamma Ray w/ Ind. Laterolog~~

4138 - LS, lt. tan, MxcLN, NØ N.S.

4143 - sh & silty sh., red & maroon calc.

4150 - LS, gray vfxcLN, NØ, N.S.

4154 - Red & gray shales, silty shales.

4173 LS, lt gray, vfxcLN, NO Ø, SSDO

4182 LS, gray, MxcLN, foss (fusul) NØ, N.S.

4185 sh, reddish gray, calc, waxy, non fissile

4206 sh., gray, calc, pyrite rich, foss. (crinoid & bryozoa)

FORT SCOTT 4216 (-1375) (41)

4216 LS, Lt. gray to tan f-MxcLN foss, NØ, SSDO (Poss Show FO - most probable shift)

4230 LS wh to lt. tan MxcLN foss. No Ø, SSDO

4252 LS, lt. tan vfxcLN, foss. No Ø, N.S.

Pump down 4285

Morning Report 9/21
Drilling @ 4358

Dip meter from 3000 down
5" - 100' grass roots to T.D.

4264 -
Sh. Gray to black, calcareous, fissile.

4268 - LS; lt. gray to tan, fxtn sli foss, NO Ø, N.S.

Cherokee 4280 (-1439) (-1)

4280-82 - chert, clear w/ orange hue

4282 - Sh. gray to black, calc., fissile

4294 LS - lt. tan, f-mxtn, sandy in part, Foss., NO Ø, N.S.

4320 - Lmy SS & Sandy LS, fg. quartz in sparry calcite cement No Ø, N.S.

4330 - Sh gray purple ~~turquoise~~, sli. sandy.

4350 - chert cg., unconsolidated, chert is white to milky

4364 - ss, f.g., quartz, red and white, calc., wellsorted, friable. N.S.

4380 Shly chert cg?

4390 - SS - WH - GRY. VF GRN, FRIABLE
WELL SRTD,
4395 - 10' UNIT "KICK" 35 BACKGRND
4402 Circulate out
10 15 CIRC — SD - CLR - WH -
F GRN, UNCONSOLIDATED TR -
LS - BRN, FXLN, FLOR SLI CUT.
30' CIRC - AS ABOVE - SS

Pump down 88 min,

4432 LS, dolomitic, wh. Non-foss.
MXLN, fair to poor ø, N.S.

Lost Circ. 4525 (3:30)
Add 12 Hulls
25 Gell
3 Cedar Fiber
1 Soda Ash
Regain Circ. @ 5:50
Lost Circ. @ 6:15
1 Soda Ash
5 Gell
3 Cedar Fiber
Regain Circ. @ 8:15

4390 - SS: wh to gry, VF gr; friable
well sorted.
4395 SS, clear to wh., f gr.
unconsolidated. NS. (10 unit gas
kick - above 35 background).

Basal Penn. Cong. 4406 (-1565)
Chert cong., chert is varicolored
yellow, cream, orange, clear,
minor amts of gray & red sh.

4438 - sh, and cherty sh.
red, gray, and black, calc.

MISSISSIPPI 4432 (-1591) (+1)
4445 LS, wh, f - mxln
foss., dense, no ø, N.S.
4458 LS, wh, packstone
in sparry calcite cement
(mostly crinoid fragments)
4476 LS, lt. tan, fxln, non foss.
NO ø, SSDO, No cut.

ARBUCKLE 4473 (-1632) (+1)
4473 - Dolomite, tan, fxln,
cherty (clear, yellow) poor ø, N.S.
4494 - as above w/ more ø, fair
SSDO.
4500 - Dolomite, pink to lt. red,
poor ø, hematite inclusions
TD 4525 (-1684) p. 52 Arbuckle

Morning Report 9/22

4525 Lost Circ.

Ft Scott	4216	(-1375) +1
Cherokee	4280	(-1439) -1
Miss	4431	(-1591) +1
Arbuckle	4473	(-1632) +14
RTD	4525	(-1684)

p. 52' Arb

LTD 4527
RTD 4525

	Smgl.	E-log		
Ca	2575	2577	(1268)	-1
NEVA	3286	3290	(-449)	-12
FRKR	3400	3402	(-561)	-8
TOPK	3691	3694	(-853)	-11
HBNR	3868	3866	(-1025)	-8
LAN (A)	3914	3914	(-1073)	-9
B	3940	3940		
C	3978	3979		
D	4018	4019		
E	4052	4054		
G	4078	4080		
H	4100	4100		
BKC	4110	4113	(-1272)	-7
FORT SCOTT	4216	4228	(-1387)	-11
CHRK	4280	4286	(-1445)	-7
MISS	4432	4448	(-1607)	-15
ARB	4473	4476	(-1635)	+11
LTD		4527	(-1686)	
RTD	4525			