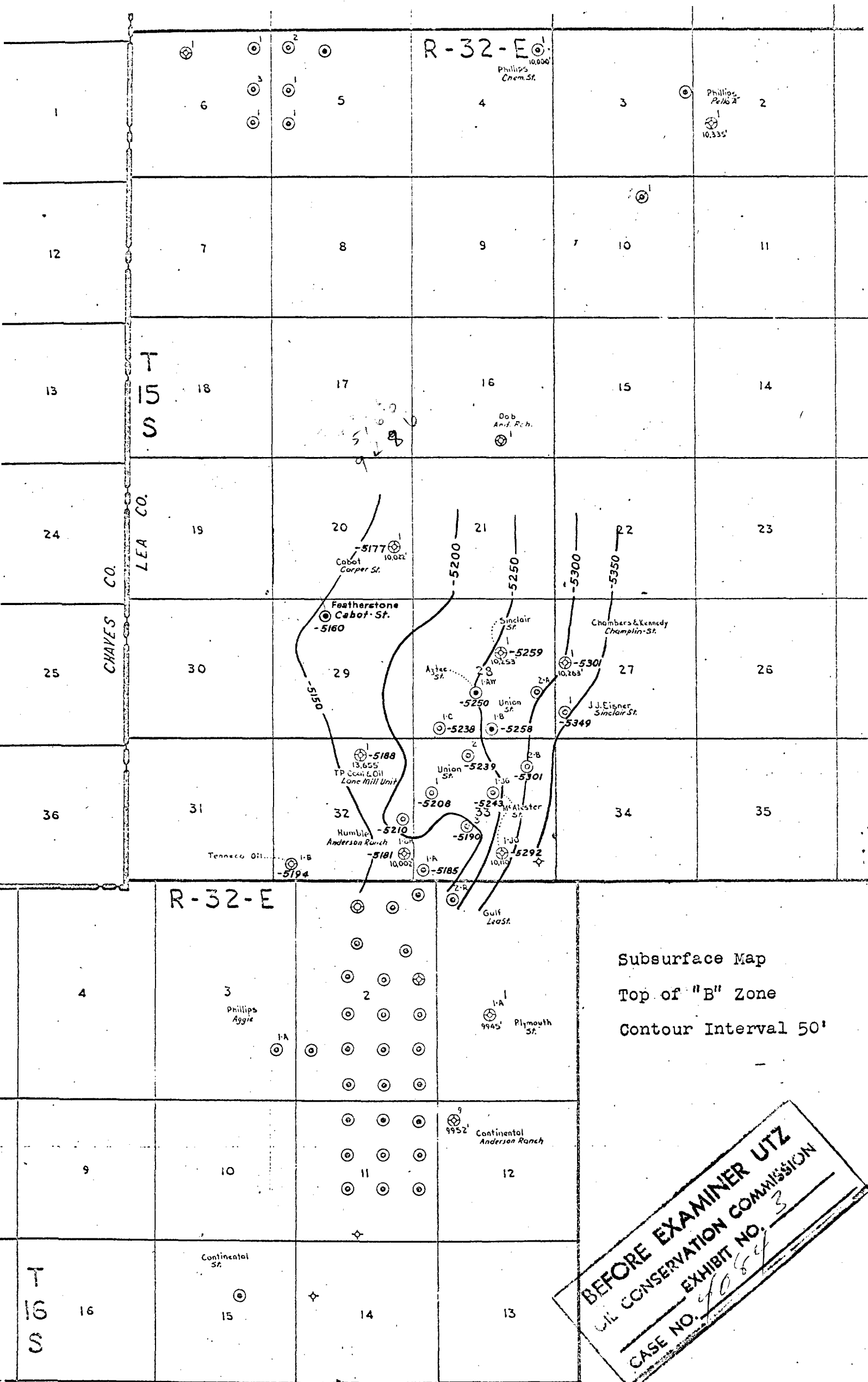
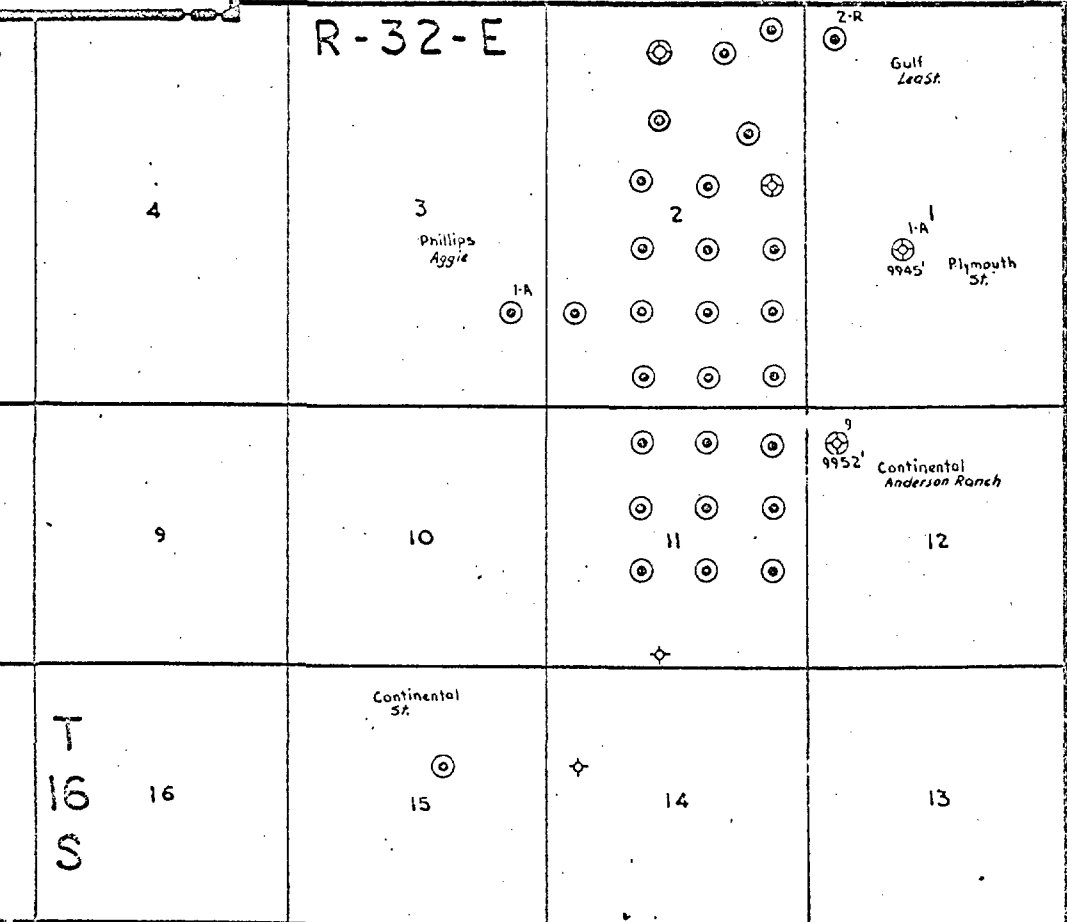
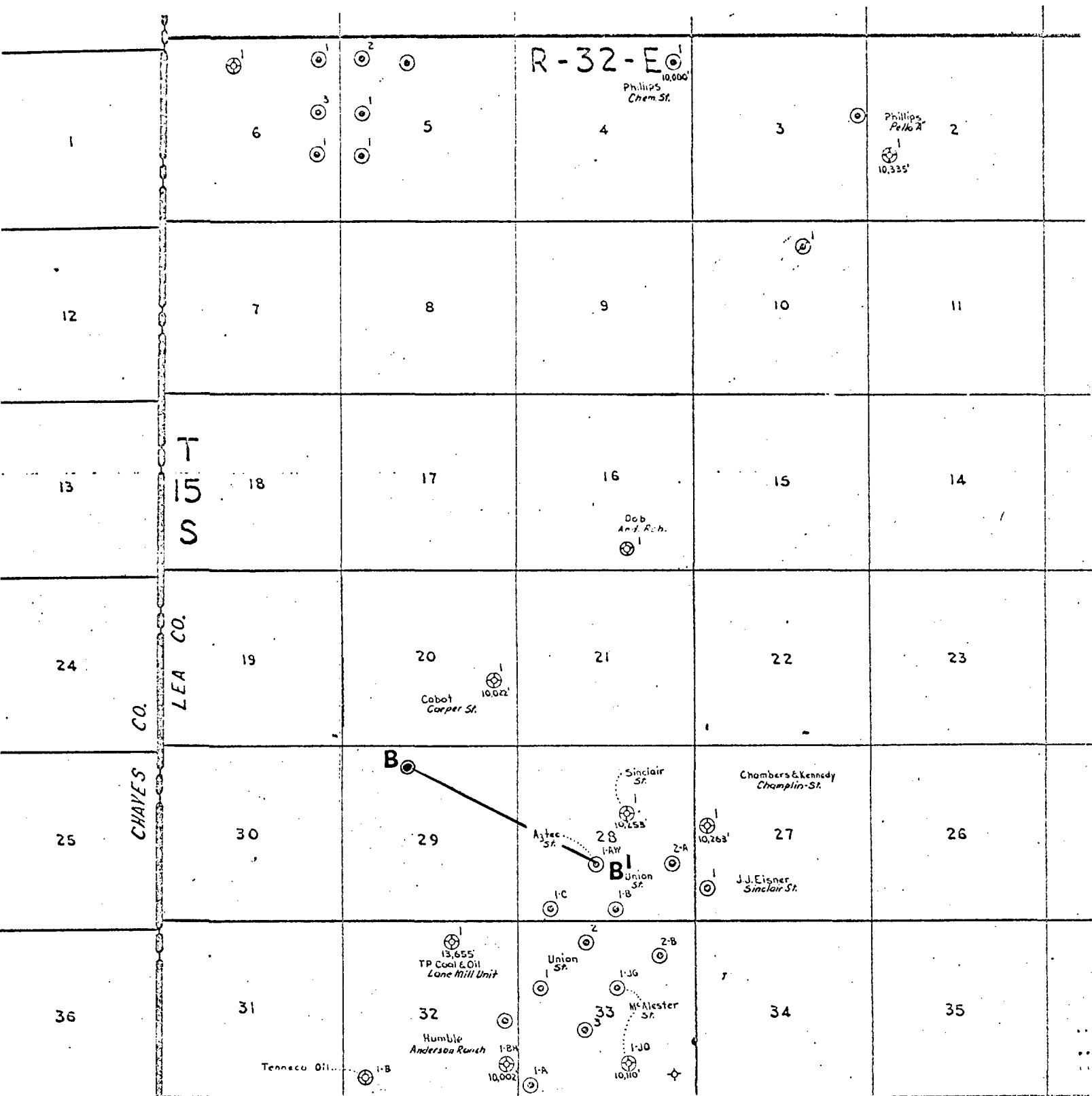
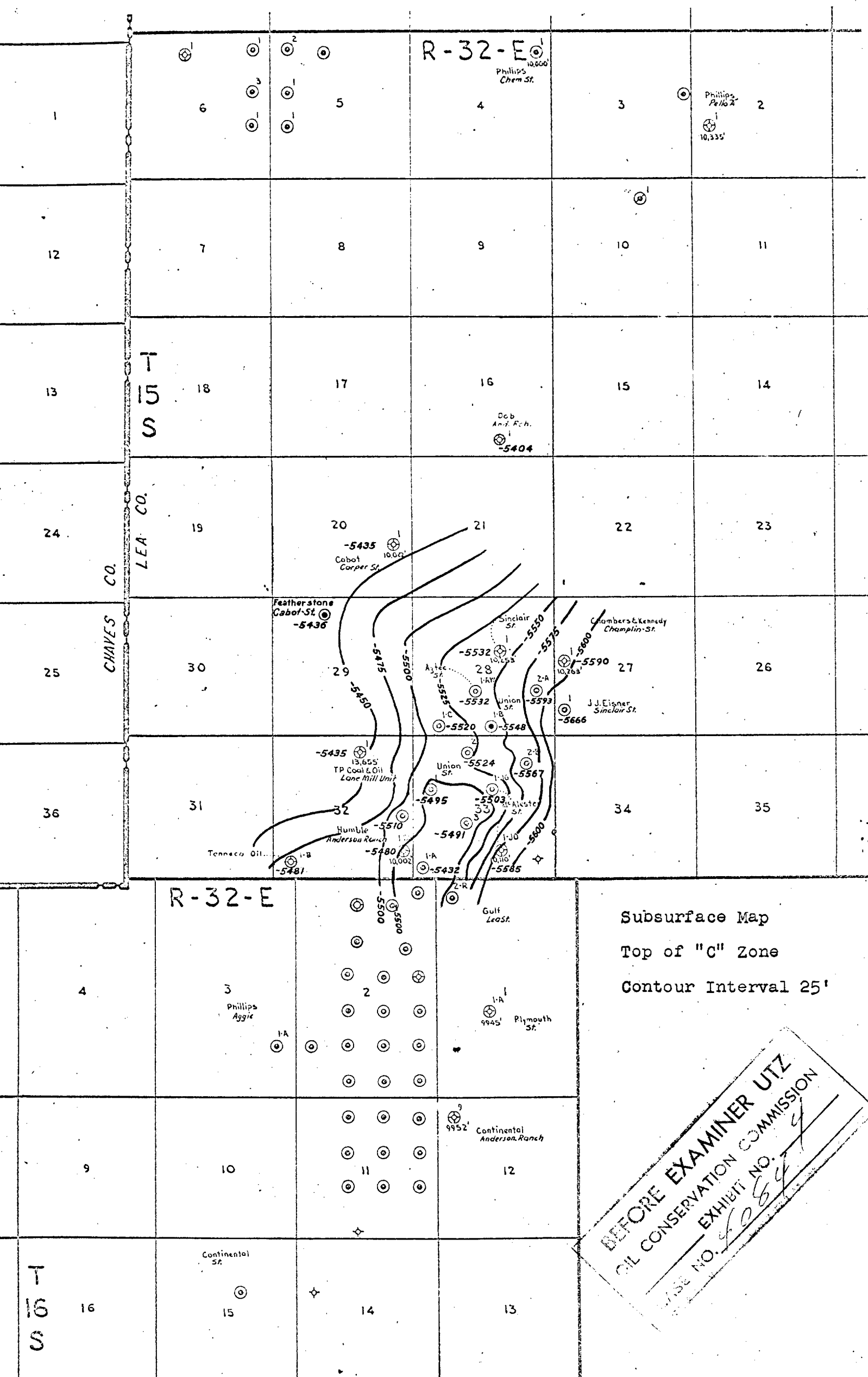


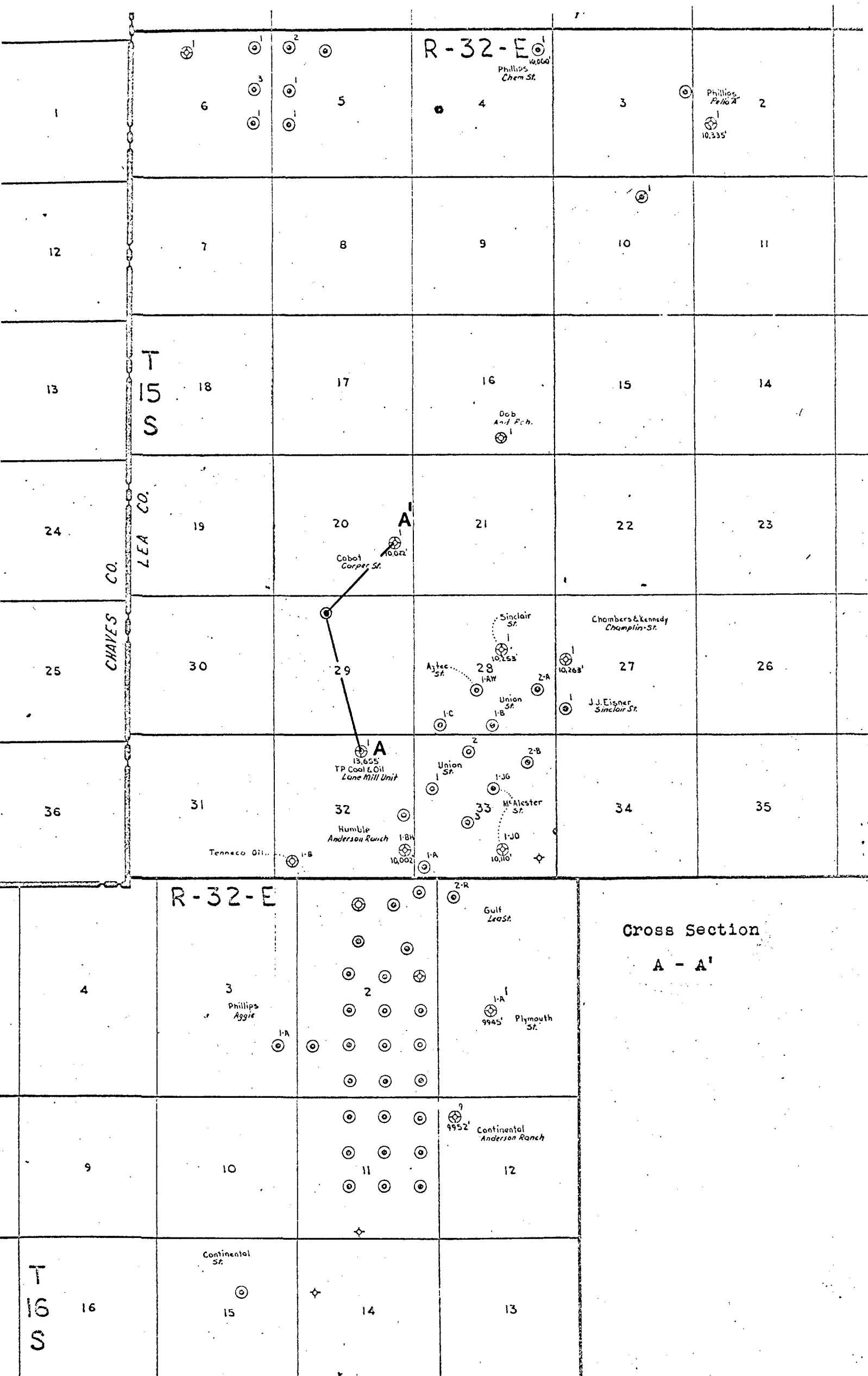




Cross Section

B - B'





OLEN F. FEATHERSTONE
No. 1 Cabot State
Sec. 29, T. 15S, R. 32E, N.M.P.M.,
Lea County, New Mexico

DRILL STEM TEST

Jan. 30, 1969 DST #1 - 9475' - 9552' 77" No Water Blanket.
Opened tool at 10:10 P.M.
Halliburton tester.
IF 15 min. - opened with good blow - good blow
throughout.
ISI 1 hr.
FF 2 hrs. - gas to surface in 2 min. - good blow -
increased to strong blow - gas very wet.
FSI 2 hrs.

IH 4290#
FH 4290#

PRESSURES

IF 144#
ISI 3380#
FF 288#
FSI 3357#

Temperature - 138°
Oil Gravity - 39°

Recovered: 120' Gas Cut Mud
1000' oil = 10.8 barrels
No Water

Prep to drill ahead.

T. Pay 4499

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. <u>5</u>
CASE NO. <u>4064</u>

OLEN F. FEATHERSTONE
NO. 1 CABOT STATE
Sec. 29, T 15S, R 32E, N.M.P.M.,
Lea County, New Mexico
Page Three

DAILY DRILLING REPORT

Feb. 1, 1969 Drilling - 9633' - lime.
Mud Wt. 8.7
Vis. 36
W.L. 11

Feb. 2, 1969 Drilling - 9745' - lime.
Mud Wt. 8.8
Vis. 40
W.L. 11

DST #2 - 9725' - 9778' 53' No Water Blanket
Open tool @ 9:50 P.M.
IF 15 min. - strong blow throughout
ISI 1 hr.
FF 1 hr. 30 min. - strong blow - GTS in 4 min.
FSI 2 hrs.
Recovery:
Oil - 5 barrels plus 120' O&GCM
Mud -
Water - None.
Temp.

IH 4548#
FH 4548#

Pressures

ISI 2395#
FSI 1649#

<u>15 min.</u>	<u>1 hr. 30 min.</u>
IF 115#	IF 207#
FF 138#	FF 277#

Feb. 3, 1969 Going back into hole to drill.
TD - 9778'.

Feb. 4, 1969 DST #3 - 9770' - 9869'. 99'
Tool open @ 11:40 P.M.
15 min. pre-flow.
1 hr. shut in - tool open 3 hrs.
Good blow throughout test - no gas.
Fhal shut in - 2 hrs.
Recovered 360' drilling mud.

IH - 4650#
FH - 4563#

IF 132#
FF 175#

ISI 833#
FSI 745#.

Feb. 5, 1969 Drilling - 9906' - lime and shale
Mud Wt. 8.9
Vis. 40
W.L. 10

OLEN F. FEATHERSTONE
NO. 1 CABOT STATE
Sec. 29, T 15S, R 32E, N.M.P.M.,
Lea County, New Mexico
Page Four

DAILY DRILLING REPORT

Feb. 6, 1969 DST #4 - 9940-10,030' - Failed to get test.

Feb. 7, 1969 DST #5 - 9940-10,030'
Open tool 8:45 P.M.
IF - 15"
ISI - 1'
FF - 1'
FSI - 1'

Recovered 90' drilling mud

Pressures:

IH - 4671#
FH - 4671#
IF - 65#
FF - 65#
ISI - 3069#
FSI - 1898#

Feb. 8, 1969 TD - 10,290' - circulating and running logs.

Feb. 9, 1969 DST #6 - 10,210' - 10,290' 80' No WB
Open tool @ 10:45 a.m.
IF - 15 min. - open weak - increased to good.
ISI - 1 hr.
FF - 1 hr. 15 min. - open strong; decreased to
end of test.
FSI - 1 hr.
Recovered: 8500' sulfur water.

Pressures:

IH 4822#
FH 4822#
15 min.
IF 548#
FF 2071

1 hr.

ISI 3850#
FSI 3850#

1 hr. 15 min.

IF 2136#
FF 3828#

Temp. - 140°

Feb. 10, 1969 Ran 9994' of 5-1/2" pipe - insert float @ 9961'
Plug down @ 6:00 P.M.
Cemented with 250 sxs 50-50- poz mix.

Feb. 11, 1969 WOC

OLEN F. FEATHERSTONE
NO. 1 CABOT STATE
Sec. 29, T 15S, R 32E, N.M.P.M.,
Lea County, New Mexico
Page Five

DAILY DRILLING REPORT

February 17, 1969 Running tubing today, will perf. and acidize tomorrow.

February 18, 1969 Treatment: Bough C - 9902 - 04, 9917 - 23
(Log Measurements)
Bridge Plug set at 9932, pulled up to 9387 (bottom of packer).
Perforated .21", 1 shot per foot: Schlumberger
HyperJet 9818' - 20'-22'
9902' - 03'-04'
9725' - 26'-27'
9499' - 9500' - 9501'
Ran tubing to 9918', spotted acid over perfs
9918' - 20' - 22, 9902' - 03' - 04'
Raised tubing and set packer @ 9878'.
Injected 500 gallons BDA acid, pumped in with oil,
1 BO flush (used 2 BO in front of acid),
Max. pressure 6500#.
Average injection pressure 6300#.
Immediate shut in pressure 5500#.
Shut in pressure 15 min. - 1800#.
Average injection rate 8/10ths barrel per minute.
Shut down for darkness.

February 19, 1969 255# pressure on tubing, commenced swabbing @
8:30 a.m.
Swabbed back 39 barrels oil, started swabbing back
sulphur water.
Fluid level stood @ 2,000' while swabbing.
Shut down for lunch and fluid level rose to
1400' from surface.
Unseated packer, picked up bridge plug, moved
up to 9735', and set bridge plug.

February 20, 1969 Treatment: Bough C 9725-27' (Log Measurements)
500 gallons BDA acid; plug set @ 9735'
Spotted acid over perforations 9725-26-27'.
Raised tubing and set packer @ 9685', started
injecting acid @ 8:15 A.M.
Formation broke @ 3000#; pressure continued to
rise while pumping acid.
Maximum pressure 5400#.
Average pressure 5250#.
Final pressure 5400#.
Immediate shut in pressure 5400#.
15 min. shut in pressure 5000#.
Stopped pumping @ 9:51 A.M.
Total fluid injected 13 barrels.
Started swabbing 10:15, swabbed until 4:00 P.M.,
last swab pulled off bottom; recovered a total
of 55 barrels oil with only a trace of acid water
and very little acid gas.
39 barrels oil pumped behind acid.
55 barrels oil minus 39 barrels oil - 16 barrels
oil in approx. 6 hours. 16 barrels new oil in
6 hours swabbing. This indicates formation gave
up fluid at approximately 2-1/2 barrels per hour
or 60 barrels per day. Well making fair amount
of gas.

Second treatment - same zone: 500 gal. BDA acid.

OLEN F. FEATHERSTONE
NO. 1 CABOT STATE
Sec. 29, T 15S, R 32E, N.M.P.M.,
Lea County, New Mexico

February 20, 1969 TREATMENT: Bough C - 9725'-27' (log measurement)
500 gallons BDA; plug set @ 9735'.
Spotted acid over perforations 9725'-26'-27'.
Raised tubing and set packer @ 9685'.
Started injecting acid @ 8:15 a.m.
Formation broke @ 3000#.
Pressure continued to rise while pumping acid.
Maximum pressure 5400#.
Average pressure 5250#.
Final pressure 5400#.
Immediate shut in pressure 5400#.
15 min. shut in pressure 5000#.
Stopped pumping @ 9:51 a.m.
Total fluid injected 13 barrels.
Started swabbing 10:15 a.m., swabbed
until 4:00 p.m.
Last swab pulled off bottom.
Recovered a total of 55 barrels oil
with only a trace of acid water and
very little acid gas.
39 barrels oil pumped behind acid.
55 barrels oil minus 39 barrels oil - 16 barrels
oil in approx. 6 hours.
- 16 barrels new oil in 6 hours swabbing.
This indicates formation gave up fluid
at approximately 2-1/2 barrels per hour
or 60 barrels per day.
Well making fair amount of gas.

SECOND TREATMENT Same zone: 500 gal. BDA.
With packer set as above started injecting
500 gallons BDA followed by oil.
When 39 barrels total fluid injected,
well began to pressure up.
Formation broke at 3000#.
Average pressure 4400#.
Maximum pressure 4600#.
Final pressure 4600#.
Immediate shut in pressure 400#.
Average injection rate 1.7 barrels per min.
Total fluid injected - 12 barrels acid and
42 barrels oil.
Started swabbing back. Swabbed back 15
barrels and shut in due to darkness.

OLEN F. FEATHERSTONE
NO. 1 CABOT STATE
Sec. 29, T 15S, R 32E, N.M.P.M.,
Lea County, New Mexico

February 21, 1969 Well on vacuum. Fluid level 6,000' to 6,500'
from surface. Swabbed until noon and recovered
31 barrels oil with no sign of acid water,
acid gas or gas. Fluid level at 8,000'.

At 12:00 noon had swabbed 31 BO - no sign
of acid water, acid gas and no gas.

Fluid standing at 7,000'.

Well beginning to make fluid.

4:45 p.m. swabbed back 50 BO.

Swabbing off bottom about 1" per swab.

Last three pulls had a little acid water.

Swab rates:

1:45 to 3:15 - 2" - 5.5 BO

3:15 to 4:30 - 2" - 5.5 BO

Total - 2-3/4 hr. - 11 BO

Average 4 BO per hr = 96 BOPD rate.

OLEN F. FEATHERSTONE
NO. 1 CABOT STATE
Sec. 29, T 15S, R 32E, N.M.P.M.,
Lea County, New Mexico

February 22, 1969 Treatment - Bough 'B' (log measurement)
Perforations to treat - 9499'-9500'-01'
1 shot per foot .21" Hyperjet
Set BP at 9686'
Raised tubing to 9507'
Spotted acid - raised tubing to 9475'
and set packer.
Injected 500 gallons BDA -
Started taking acid at 2900#.
Maximum pressure 3150#.
Average pressure 3000#.
Final pressure 3000#.
Immediate shut in - 3000#.
15 min. shut in - 1400#.
Average injection rate - 6 GPM.
Injected fluids as follows:
2 BO
12 B Acid
38 BO
Started swabbing 12:00 noon.
At 4:15 p.m. had swabbed back 30 BO
followed by 12 barrels acid water.
At 4:55 p.m. had recovered 45.4 BO.
Shut in for darkness.

February 23, 1969 775 # tubing pressure.
Opened to flow on 14/64" choke @ 7:30 a.m.
7:30 a.m. to 9:15 a.m. - flowed 11 BO.
9:15 a.m. to 9:45 a.m. - flowed 5-1/2 BO.
9:45 a.m. to 10:15 a.m. - flowed 2-3/4 BO (240# TP)
10:15 a.m. to 11:45 a.m. - flowed
11:45 a.m. - 4:45 p.m. - flowed (5 hr) 16.55 BO -
(3.31 BOPH - 160# TP)
4:45 p.m. to 5:15 p.m. - approximately 3 BOPH rate.
Left well flowing overnight.

February 24, 1969 7:45 a.m. (22-1/2 hrs.) well flowed 23.44 BO.
Decided to re-treat with 1000 gallons
regular acid - 20%.

Field.....

State Mississippi County LeeCompany Union CorporationFarm Corpus-State Well No. 1Sec. 30 Blk. 153 Survey 323fr N. 660' fr E. 1930' fr S. fr W

of

Contractor A. M. Thompson, Inc.

Remarks

Date Loc. Comm. 9-13-62 Comp. 11-23-62Elev. T. D. 10,020 P. B.

Pay

Shot to & to

Acid I. P.

Casing Record: 13-3/8 @ 619' 720 10 516 8 4 1/2" @ 991610-17 Drilg. @ 9365 li. & sand. Dev. @ 9275, 2-3/4°.10-18 9432 li. Making trip. Dev. @ 9402, 1 1/4°.10-19 9575 li. DST #1. 9485-9575. Packer failed.
Making trip to reset packer 150' higher.10-20 Drilg. @ 9576 li. DST #2: 9425-9575. Tool
open 2 hrs. GTS 33 min. Rec. 240' @ 90°
500' HOSCOX. TSIP 1118, FP 219-217,
TSIP 657, Eyd. 1538, 1325.10-21 Drilg. @ 9732. Dev. @ 9658, 1-3/4°.10-22 9831 li. Making trip. Dev. @ 9831', 1-3/4°.10-23 9833 li. Dev. 1-3/4°. On bottom w/DST #2.
9820-88. Tool open at 5:15 a. m. Gas 10 min.10-24 DST #2. 9820-9833. Open 2 1/2 hrs. GTS 10 min.
Initially 400 MCFPM. declined to ESTM.Rec. 2800' Free oil. 11' grav. 270' Salt wtr
FP 237-872, 30 min. TSIP 3120, 30 min FSIP
2516. Drilg. @ 9916 li. making trip to ream.DST #3: Failed to get tool on bottom.10-25 DST #3 9889-9916. Open 1 1/2 hrs. Rec. 180'
9040CSW. 11.3' SCOSW. FP 624-1959. 30 min.
TSIP 3390, 10 min. TSIP 2657. Drilg. ahead.10-26 10,020 li. Prep to log.10-27 10010-28 10,020 li. running casing10-29 10,020 TD 100. Set 314 jts 4 1/2" csg @ 9916w/150 ex Kocrix 2, 20 11:15 a. m. 10-28-62.
Top of cnt, 9455.10-30 Moving off rotary10-31 Moving off location. rig released 2:00 p. m.11-1 no report11-2 Tearing down derrick.11-5 Moving in completion rig.11-6 Moved in and rigged up pulling unit. Picked
up 2" tbg. displaced hole w/oil. Now prep
to log and perf.11-7 Ran correlation log, perf 9879'-9886' (G.M.)
w/2 holes per foot. Ran tbg and packer, swbd
down to 6500', well began flowing and unloaded
tubing. Went back to bottom w/swab, getting
good gas blow, very little fluid, no water,
prep to wash w/mud acid.11-8 Treated w/500 gal. mud acid. Max. press.
5600#, broke to 4300#. Swabbed to flowing.
Well flowed 56 bbls. and died. Now swbg.11-9 Swbd and flowed 60 bbls. fluid in 10 hrs.
10% wtr. Swbd tbg dry, left shut in overnight.
STIP 150# today. prep to acidize.

BEFORE EXAMINER UTZ

OIL CONSERVATION COMMISSION

EXHIBIT NO. 6CASE NO. 4084

11-10 Treated w/1000 gal. retarded acid and 1500 gal. regular acid. Max tr press. 5600#. Average injection rate 1.6 B/L. Swabbing acid water and load oil.

11-11 Swabbed back acid water, now getting formation fluid out 30%-50% water. Swabbed dry, well shut in overnight.

11-12 Ran swab twice after being shut in, well began flowing. Flowed 200 b.f. in 2 1/2 hrs. 30% - 50% wtr. Well dead this a.m. Prep to swab.

11-13 Swabbed 1 hr. well began flowing. Flowed 76 bbl. fluid. Dead. water 25%-35%.

11-14 Well flowed 100 bbl. in 1 1/2 hrs. 10% wtr. swab 2 hrs. well kicked off and flowed 6 hrs. swab 1 1/2 hrs. Now swabbing 2 bbls. per hr. at 9877' bottom.

11-15 On 2 1/2 hr. test lower zone swabbed and flowed 132 bbl. at 7 1/2 p.o. Last 18 hrs. of test well swabbed 2 b.f. per hr out 10-50% wtr. pulled up, set bridge plug at 9877'.

Perforated 9865'-6" and 9869-76. ran the and packer, began swabbing. Fluid level 1500' from surface, unable to lower below 2000' from surface, swabbing 25 bbls. per hr. 99% water.

11-19 On a 2 1/2 hr. swabbing test, swabbed 73 b.o. and 111 b.w. Last 1 1/2 hrs. of test swabbed 5 b.f. per hr. 80% wtr.

11-20 Prep to treat w/3000 gal. acid.

11-21 Treated 2/3000 gal. acid, max. press 4600# at 6 B/L. Now swabbing.

11-22 Swabbed well 2 1/2 hrs. swabbing formation water w/trace of oil FL 3000' from surface.

11-23 Shut down during test 2 1/2 hrs.

11-24 Swabbing formation water w/slight trace of oil. FL 3000' to fluid. Swabbing 28 b.f. per hr.

11-25 Swabbing 26 b.f. per hr. slight trace of oil, 3000' to fluid.

11-26 Swabbing 26 b.f. per hour, slight trace of oil, 3000' to fluid.

11-27 Shut down. Waiting on release.

11-28 Prep to test. Final report.

Wildcat, UNION OIL CO. OF CALIF. #1-33 Union-State

NEW OIL DISCOVERY

Location: NW/part county, 7 mi NE/Maljamara; Sec 33-15S-32E, 1980' ENL 660' FWL Sec; 5 mi W of S/Saunders Fld, 1/2 mi SE of 13,655' dry hole, 1-1/2 mi N of Anderson Ranch Fld

Spud: 3-26-60; **Comp:** 7-16-60; **Elev:** 4325' DF; **TD:** 13,502; **PB:** 10,227

Casing: 13-3/8" 801/700 sx, 9-5/8" 4175/700 sx, 5-1/2" 10,227/390 sx

Prod. Zone: (Wolfcamp) T/Pay 9823, Prod thru perms 9952-80

IPF: 1,223.7 BOPD thru 30/64" ch, Grav 40, GOR 1550-1, TP 800#, CP pkr

Comp. Info: DST 9482-9555, op 2 hrs, rec 180' O&GCM, 240' MCO, FP 90-165#, SIP 1930#/30 min; DST 9742-80, op 30 min, rec 10' mud, FP 25#, SIP 40#/30 min; DST 9798-9856, op 2 hrs & 10 min, gas in 5 min, mud in 51 min oil in 53 min, flwd est 20 BOPH/1 hr & 20 min, rev out full string oil, FP 435-1305#, SIP 3315#/90 min; Crd 9856-9903' rec 38-1/2' li; Crd 9910-45' rec 21' white pore li, bldg O&G; DST 9862-9945, op 95 min, gas in 5 min, est 6,000,000 CFCGP, flwd 18 BO/30 min, rev out 98 BO, FP 2670-3320#, SIP 3590#/90 min; Crd 9945-88 rec 42-1/2' li, bldg O&G; DST 9948-88, op 2-1/2 hrs, flwd 64 BO/1 hr & 55 min thru 24/64" ch, rev out full string oil, rec 90' MCO, FP 1000-1135#, SIP 3640#/30 min; Crd 9988-10,039 rec 19' li & 30' dark gray sh; DST 9988-10,039, op 2 hrs, rev out 36 BO & 12 BSW, FP 1344-2444#, SIP 2747#/90 min; DST 10,148-161, op 2 hrs, rec 150' muddy SW, FP 100#, SIP 160#/90 min; DST 10,906-11,012, op 2 hrs, rec 40' HO&GCM, FP 715#, SIP 1285#/30 min; DST 11,276-312, op 2 hrs, rec 10' mud, FP 620-1000#, SIP 1000#/90 min; Crd 13,470-502, rec 15' sh & 13' dolo; DST 13,482-502, op 4 hrs, rec 250' G&SWCM & 6600' SW, FP 1249-3000#, SIP 4623#/1 hr; A/1,000 gals

Tops: (EL) Anhy. 1320, Yates 2505, Queen 3345, San And. 4093, Glor. 4692, Chk 6269, Tubb 6928, Abo 7635, Hueco 8966, Canyon 10,594, Chester 12,328, Miss. 12,710, Wdld. 13,402, Dev. 13,480.

[illegible]

NEW MEXICO
OIL CONSERVATION COMMISSION

BOX 1980
HOBBS, NEW MEXICO

March 1969

147

NO. _____

SUPPLEMENT TO THE OIL PRORATION SCHEDULE

DATE March 17, 1969

PURPOSE: ALLOWABLE ASSIGNMENT FOR A NEW WELL

Effective March 1, 1969, an allowable of 168 barrels of oil per day or a total of 5208 barrels for the month is hereby assigned to the Olen F. Featherstone, Cabot State, 1-C, 29-15-32, Undesignated Lea Group 6-A.

NORTH ANDERSON RANCH WOLFCAMP EXTENSION.

80A c.

JDR/eb

Olen F. Featherstone

Permian

OIL CONSERVATION COMMISSION

SUPERVISOR, DISTRICT NO. _____

OPERATOR'S COPY

B.T. Gauge Numbers		89	91	Ticket Number	149830
Initial Hydrostatic		PRESSURE	PRESSURE	Elevation	- ft.
		4328	4338		
Final Hydrostatic		4323	4329	1st Flow	- bbls. day
1st Flow	Initial	-----	147	Indicated Production	
	Final	15	125	Total Flow	55.0 bbls. day
		147	158		
Initial Closed In Pressure		60	3390	Drill Collar Length	569 ft.
			3394	Drill Collar I.D.	2.5 in.
2nd Flow	Initial	-----	216	Drill Pipe Factor $4\frac{1}{2}"$ 4"	0.01422 bbls. ft.
	Final	120	337	Hole Size	7.875 in.
			350		
Final Closed In Pressure		120	3348	Footage Tested	77 ft.
			3349		
Extrapolated Static Pressure		Initial	-	Mud Weight	8.7 lbs. gal.
		Final	3474	Viscosity, Oil or Water	1.8 cp
Slope psi/cycle		Initial	-	Oil API Gravity	40°
P-10		Final	3080	Water Specific Gravity	-
			3086		

Remarks: RESULTS AS SHOWN ARE COMPUTER CALCULATED...

SUMMARY		Gauge No. 91/ Depth 9542'		Gauge No. 89/ Depth 9549'		
Product	Equation	Initial	Final	Initial	Final	Units
Production	$Q = \frac{1440 R}{t}$		52.		55.	bbls. day
Transmissability	$\frac{Kh}{\mu} = \frac{162.6 Q}{m}$		21.55		22.17	md. ft. cp
Indicated Flow Capacity	$Kh = \frac{Kh}{\mu} \mu$		38.79		40.89	md. ft.
Average Effective Permeability	$K = \frac{Kh}{h} \quad h = 4'$		9.698 0.504		<u>10.223</u> 0.531	md.
Permeability	$K_i = \frac{Kh}{h_i}$		-		-	md.
Damage Ratio	$DR = .183 \frac{P_s - P_f}{m}$		1.46		1.45	-
Theoretical Potential w/Damage Removed	$Q_1 = Q DR$		76.0		80.0	bbls. day
Approx. Radius of Investigation	$b \approx \sqrt{Kt} \text{ or } \sqrt{Kt_0}$		8.25		8.5	ft.
	$b_1 \approx \sqrt{K_1 t} \text{ or } \sqrt{K_1 t_0}$		-		-	ft.
Potentiometric Surface *	Pot. = EI - GD + 2.319 Ps		-1486		-1479	ft.

NOTICE. These calculations are based upon information furnished by you and taken from Drill Stem Test pressure charts, and are furnished you for your information. In furnishing such calculations and evaluations based thereon, Halliburton is merely expressing its opinion. You agree that Halliburton makes no warranty express or implied as to the accuracy of such calculations or opinions, and that Halliburton shall not be liable for any loss or damage, whether due to negligence or otherwise, in connection with such calculations and opinions.

DST 9725-9778'
Liquid Production

Olen F. Featherstone
No. 1 Cabot State

B.T. Gauge Numbers			1516	1496	Ticket Number	060190
Initial Hydrostatic			PRESSURE	PRESSURE	Elevation	4326 ft.
			4525	4529		
Final Hydrostatic			4513	4520	Indicated Production	1st Flow - bbls. day
1st Flow	Initial	Time -----	104	104		Total Flow 35 bbls. day
	Final	15	141	169	Drill Collar Length	590 ft.
Initial Closed In Pressure		60	2379	2386	Drill Collar I.D.	2.75 in.
2nd Flow	Initial	-----	126	134	Drill Pipe Factor	0.01084 bbls. ft.
	Final	90	259	266	Hole Size	7.875 in.
Final Closed In Pressure		120	1636	1642	Footage Tested	4** ft.
Extrapolated Static Pressure	Initial	-	-	-	Mud Weight	8.8 lbs. gal.
	Final	2020	2028	2028	Viscosity, Oil or Water	1.5 cp
Slope per cycle P10	Initial	-	-	-	Oil API Gravity	41°* —
	Final	606	614	614	Water Specific Gravity	-

Remarks: *This gravity was reported when calculation service was requested.
**4' Net pay as reported by Mr. Hicks in Roswell, New Mexico.

SUMMARY		Gauge No. Depth 1516/9770'		Gauge No. Depth 1496/9774'		
Product	Equation	Initial	Final	Initial	Final	Units
Production	$Q = \frac{1440 R}{t}$		34		35	bbls. day
Transmissability	$\frac{Kh}{\mu} = \frac{162.6 Q}{m}$		3.91		4.03	md. ft. cp
Indicated Flow Capacity	$Kh = \frac{Kh}{\mu} \mu$		5.86		6.04	md. ft.
Average Effective Permeability	$K = \frac{Kh}{h}$		-		-	md.
	$K_i = \frac{Kh}{h_i}$		1.465		1.511	md.
Damage Ratio	$DR = .183 \frac{P_s - P_f}{m}$		0.3		0.3	-
Theoretical Potential w/Damage Removed	$Q_1 = Q DR$		34		35	bbls. day
Approx. Radius of Investigation	$b \approx \sqrt{Kt}$ or $\sqrt{Kt_0}$		-		-	ft.
	$b_1 \approx \sqrt{K_1 t}$ or $\sqrt{K_1 t_0}$		12.4		12.6	ft.
Potentiometric Surface *	Pot. = EI - GD + 2.319 Ps		-759		-745	ft.

NOTICE: These calculations are based upon information furnished by you and taken from Drill Stem Test pressure charts, and are furnished you for your information. In furnishing such calculations and evaluations based thereon, Halliburton is merely expressing its opinion. You agree that Halliburton makes no warranty express or implied as to the accuracy of such calculations or opinions, and that Halliburton shall not be liable for any loss or damage, whether due to negligence or otherwise, in connection with such calculations and opinions.

OLEN F. FEATHERSTONE
CABOT STATE NO. 1
Sec. 29, T15S-R32E - NMPM
Lea County, New Mexico

RESERVE CALCULATIONS

I. Zone 1. - 9498' - 9502'

h: 5' Microlog Oil Gr.: 39° API measured
Ø: 12% Neutron GOR: 600 assumed
SW: 25% Dual Induction Gas Gr.: 0.95 assumed
BHT: 128°F measured FVF: 1.375 calculated

Stock Tank Oil-in-place is:

$$N = 7758 \cdot 0.12 \cdot \frac{(1.00-0.25)}{1.375} \cdot 5 \\ = 2,539 \text{ bbls/acre}$$

Assuming a recovery factor of 25% for this reservoir,
recoveries for various spacings will be:

a) At 40 acres: 25,388 bbls.
b) At 80 acres: 50,776 bbls.
c) At 160 acres: 101,552 bbls. @ 1.60

II. Zone 2. - 9726' - 9728'

h: 2' Microlog Oil Gr.: 39° API measured
Ø: 7% Neutron GOR: 600 assumed
SW: 26% Dual Induction Gas Gr.: 0.95 assumed
BHT: 129°F measured FVF: 1.375 calculated

Stock Tank Oil-in-place is:

$$N = 7758 \cdot 0.07 \cdot \frac{(1.00-0.26)}{1.375} \cdot 2' = 585 \text{ bbls/acre}$$

Assuming recovery factor of 25%, recoveries will be:

a) At 40 acres: 5,850 bbls.
b) At 80 acres: 11,700 bbls.
c) At 160 acres: 23,400 bbls. @ 1.60

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
CASE NO. 4084
EXHIBIT NO. 8

Proposed Unit Area
Featherstone #1 Cabot State

R32E

Champion
2-24-67
15³⁰

Case 4084

Lease and Fee Information
Posted to 9-24-67

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February 20, 1969 TREATMENT: Bough C - 9725'-27' (log measurement)
500 gallons BDA; plug set @ 9735'.
Spotted acid over perforations 9725'-26'-27'.
Raised tubing and set packer @ 9685'.
Started injecting acid @ 8:15 a.m.
Formation broke @ 3000#.
Pressure continued to rise while pumping acid.
Maximum pressure 5400#.
Average pressure 5250#.
Final pressure 5400#.
Immediate shut in pressure 5400#.
15 min. shut in pressure 5000#.
Stopped pumping @ 9:51 a.m.
Total fluid injected 13 barrels.
Started swabbing 10:15 a.m., swabbed
until 4:00 p.m.
Last swab pulled off bottom.
Recovered a total of 55 barrels oil
with only a trace of acid water and
very little acid gas.
39 barrels oil pumped behind acid.
55 barrels oil minus 39 barrels oil = 16 barrels
oil in approx. 6 hours.
16 barrels new oil in 6 hours swabbing.
This indicates formation gave up fluid
at approximately 2-1/2 barrels per hour
or 60 barrels per day.
Well making fair amount of gas.

SECOND TREATMENT

Same zone: 500 gal. BDA.
With packer set as above started injecting
500 gallons BDA followed by oil.
When 39 barrels total fluid injected,
well began to pressure up.
Formation broke at 3000#.
Average pressure 4400#.
Maximum pressure 4600#.
Final pressure 4600#.
Immediate shut in pressure 400#.
Average injection rate 1.7 barrels per min.
Total fluid injected - 12 barrels acid and
42 barrels oil.
Started swabbing back. Swabbed back 15
barrels and shut in due to darkness.

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February 21, 1969 Well on vacuum. Fluid level 6,000' to 6,500'
from surface. Swabbed until noon and recovered
31 barrels oil with no sign of acid water,
acid gas or gas. Fluid level at 8,000'.

At 12:00 noon had swabbed 31 BO - no sign
of acid water, acid gas and no gas. ,
Fluid standing at 7,000'.

Well beginning to make fluid.

4:45 p.m. swabbed back 50 BO.

Swabbing off bottom about 1" per swab.

Last three pulls had a little acid water.

Swab rates:

1:45 to 3:15 - 2" - 5.5 BO

3:15 to 4:30 - 2" - 5.5 BO

Total - 2-3/4 hr. - 11 BO

Average 4 BO per hr - 96 BOPD rate.

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February 22, 1969 Treatment - Bough 'B' (log measurement)
Perforations to treat - 9499'-9500'-01'
1 shot per foot .21" Hyperjet
Set BP at 9686'
Raised tubing to 9507'
Spotted acid - raised tubing to 9475'
and set packer.
Injected 500 gallons BDA -
Started taking acid at 2900#.
Maximum pressure 3150#.
Average pressure 3000#.
Final pressure 3000#.
Immediate shut in - 3000#.
15 min. shut in - 1400#.
Average injection rate - 6 GPM.
Injected fluids as follows:
2 BO
12 B Acid
38 BO
Started swabbing 12:00 noon.
At 4:15 p.m. had swabbed back 30 BO
followed by 12 barrels acid water.
At 4:55 p.m. had recovered 45.4 BO.
Shut in for darkness.

February 23, 1969 775 # tubing pressure.
Opened to flow on 14/64" choke @ 7:30 a.m.
7:30 a.m. to 9:15 a.m. - flowed 11 BO.
9:15 a.m. to 9:45 a.m. - flowed 5-1/2 BO.
9:45 a.m. to 10:15 a.m. - flowed 2-3/4 BO (240# TP)
10:15 a.m. to 11:45 a.m. - flowed
11:45 a.m. - 4:45 p.m. - flowed (5 hr) 16.55 BO -
(3.31 BOPH - 160# TP)
4:45 p.m. to 5:15 p.m. - approximately 3 BOPH rate.
Left well flowing overnight.

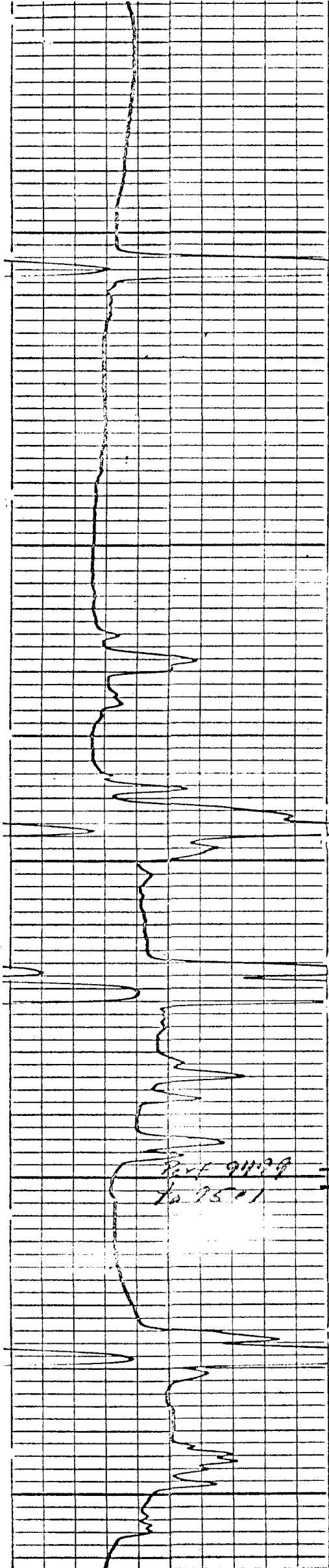
February 24, 1969 7:45 a.m. (22-1/2 hrs.) well flowed 23.44 BO.
Decided to re-treat with 1000 gallons
regular acid - 20%.


SCHLUMBERGER
MICROLOG
WELL LOGGING

 SCHLUMBERGER WELL SURVEYING CORPORATION
 HOUSTON, TEXAS

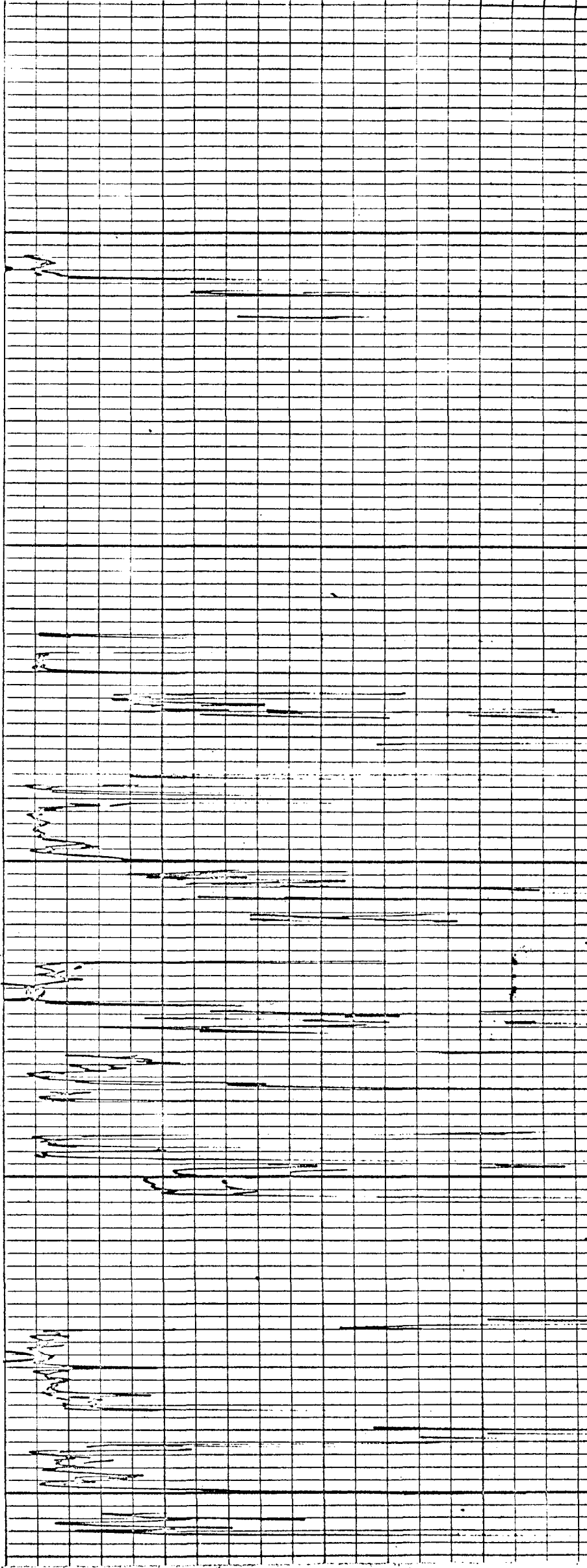
COUNTY FIELD LOCATION WELL COMPANY	OFF		
	COMPANY <u>OLEN FEATHERSTONE</u>		
	WELL <u>CAROL STATE #1</u>		
	FIELD <u>ANDERSON (PENN)</u>		
	COUNTY <u>LEA</u> STATE <u>NEW MEXICO</u>		
LOCATION <u>1980 FWL + 660 FNL</u>		Other Services: <u>SUP-CR</u> <u>DIL</u>	
Sec. <u>29</u> Twp. <u>158</u> Rge. <u>32 E</u>			
Permanent Datum: <u>G.L.</u> , Elev. _____		Elev.: K.B. <u>4337</u>	
Log Measured From <u>K.B.</u> , _____ Ft. Above Perm. Datum		D.F. _____	
Drilling Measured From <u>K.B.</u>		G.L. _____	
Date	<u>2/9/69</u>		
Run No.	<u>ONE</u>		
Depth—Driller	<u>10290</u>		
Depth—Logger	<u>10291</u>		
Btm. Log Interval	<u>10289</u>		
Top Log Interval	<u>8800</u>		
Casing—Driller	<u>8 5/8 @ 4105</u>	@	@
Casing—Logger	<u>4105</u>		
Bit Size	<u>7 7/8</u>		
Type Fluid in Hole	<u>FRESH GEL</u>		
Dens.	<u>9.0</u>	<u>52</u>	
pH	<u>9.5</u>	<u>8.2 ml</u>	ml
Fluid Loss			ml
Source of Sample	<u>CIRCULATED</u>		
R _m @ Meas. Temp.	<u>1.14 @ 61 °F</u>	@ °F	@ °F
R _{mf} @ Meas. Temp.	<u>.88 @ 61 °F</u>	@ °F	@ °F
R _{mc} @ Meas. Temp.	<u>1.43 @ 61 °F</u>	@ °F	@ °F
Source: R _{mf} R _{mc}	<u>m m</u>		
R _m @ BHT	<u>.56 @ 132 °F</u>	@ °F	@ °F
Time Since Circ.	<u>7 HR</u>		
Max. Rec. Temp.	<u>132 °F</u>	°F	°F
Equip. Location	<u>3722 HOODS</u>		
Recorded By	<u>BECK</u>		
Witnessed By	<u>MR. BAINHILL & MR. HILKS</u>		

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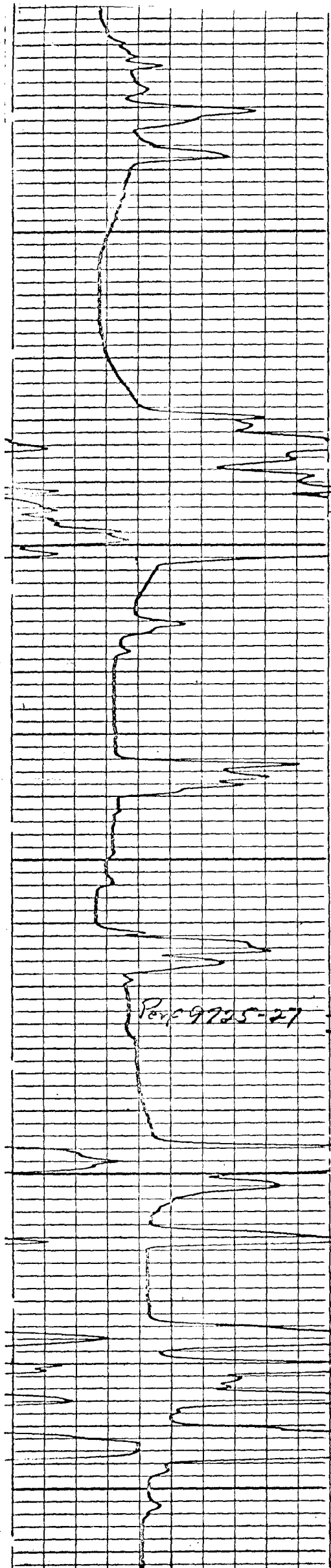


9400

9500



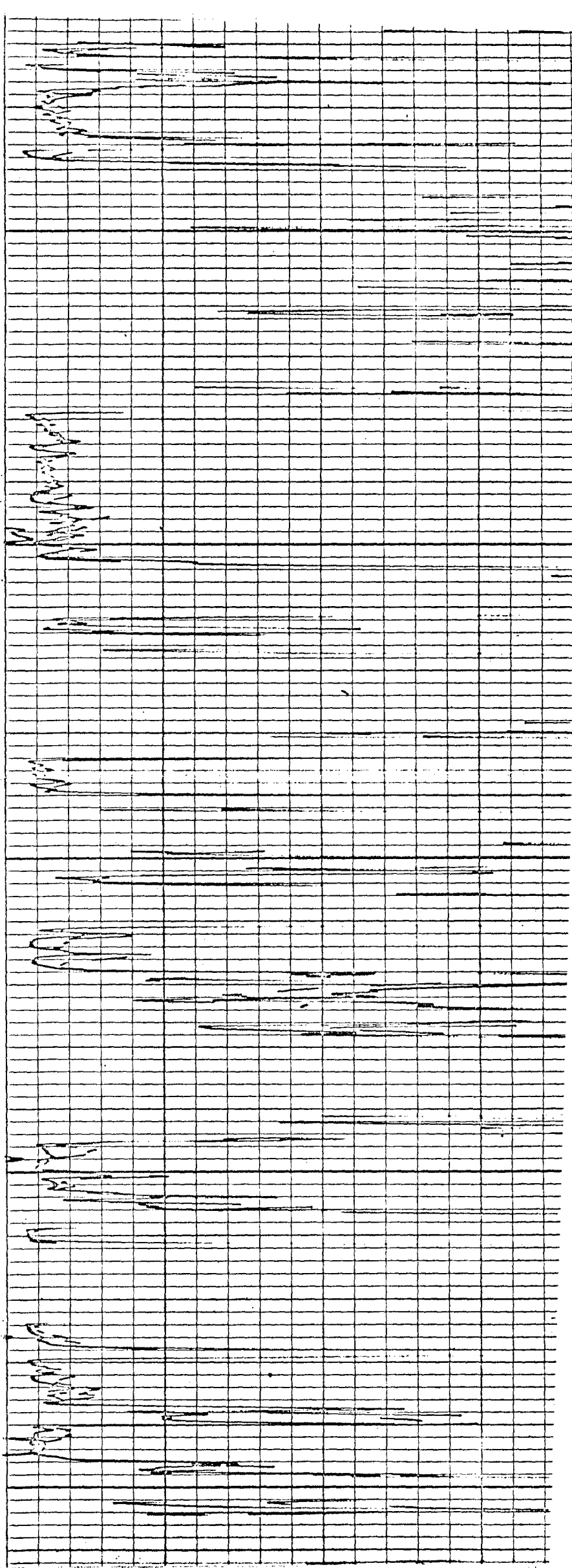
Case 4084



9600

9700

9800



Case 4084