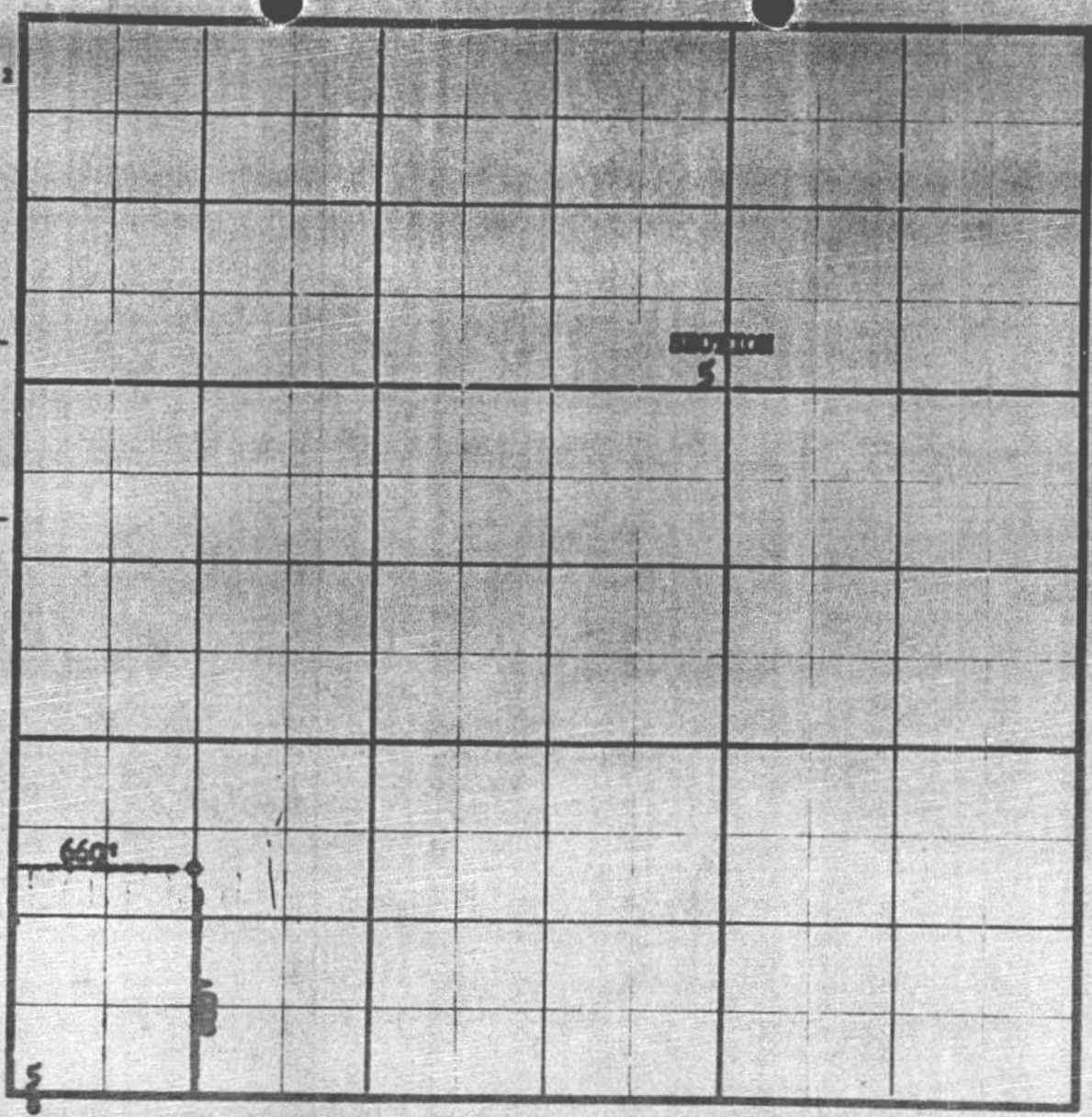
Form No. 2
File at
Billings
or Shelby

Locate
Well
Correctly




Sec. Cor.

Form No. 2
File at
Billings
or Shelby

Locate
Well
Correctly

**THE NOTICE OF INTENTION TO DRILL THIS WELL IS APPROVED SUBJECT TO THE FOLLOWING CONDITIONS:**

1. Any person, before commencing the drilling of any oil or gas well, shall secure from the commission a drilling permit and shall pay to the commission therefor the following amounts: for each well whose estimated depth is thirty-five hundred (3500) feet or less; twenty-five dollars ($25.00); from thirty-five hundred and one (3501) feet to seven thousand (7000) feet, seventy-five dollars ($75.00); seven thousand (7000) feet and deeper, one hundred fifty dollars ($150.00).
2. No well is to be spudded in unless the proper surety drilling bond has been posted and approved by the Oil and Gas Conservation Commission of the State of Montana.
3. Cable tool operators must construct an adequate sump to contain all mud and water bailed from the hole.
4. Surface or conductor casing must be properly cemented by an approved method to act as a tie in case an unexpected flow of oil, gas, or water should be encountered, unless special permission has been granted for formation shut-off.
5. Any contemplated change in status of a well such as to plug and abandon, deepen, plug back, redrill, alter casing, etc., must be presented on Sundry Notices and Report of Wells form for approval by agent prior to commencement of work.
6. All substantial showings of oil or gas must be tested for commercial possibilities before drilling ahead. Each such showing must be adequately protected by casing, mud or cement, as drilling progresses.
7. The production string must be cemented unless a formation shut-off or packer is approved by the agent. Sufficient cement must be used to protect the casing and possible productive formation exposed in the process of drilling not otherwise protected.
8. All production strings of casing must be tested by bailing or pressure to determine if there is a tight bond with the formation or possible leaks in the casing. The results of the test must be reported on Sundry Notices and Report of Wells form, said report to include the size, weight, thread and length of casing, amount of cement used, and date work is done. If test shows failure, the defect must be corrected before any drilling operations are resumed.
9. A satisfactory drilling record must be kept for each tour, showing top and thickness of each and all formations drilled and all other information of value, one copy of which is to be kept at the rig while drilling is in progress for examination when an agent visits the well.
10. All producing wells must be marked with name of the operator, number of the well, and location, using reasonable precautions to preserve these markings at all times.
11. Copies of all directional surveys, electrical logs, or tops from electrical log if electric survey is run, formation tests, and cementing record, as furnished by the cementing company, etc., must be filed with the State agent of the district together with four copies of the log, upon completion of the well.
12. All work must be done in conformity with the regulations of the Oil & Gas Conservation Commission of the State of Montana, as contained in "General Rules and Regulations," and amendments thereto, as well as regulations prescribed in lieu thereof.

24

Form No. 2
GENERAL RULES
201, 207, 211,
216, 219, 233.1

COMM. OFFICE, Billings

(SUBMIT IN QUADRUPLICATE)
TO
OIL AND GAS CONSERVATION COMMISSION
OF THE STATE OF MONTANA
BILLINGS OR SHELBY

NOTICE
THIS FORM BECOMES A PERMIT WHEN STAMPED APPROVED BY AN AGENT OF THE COMMISSION.

MAR 31 1965

# SUNDRY NOTICES AND REPORT OF WELLS

| | |
|---|---|
| Notice of Intention to Drill | Subsequent Report of Water Shut-off |
| Notice of Intention to Change Plans | Subsequent Report of Shooting, Acidizing, Cementing |
| Notice of Intention to Test Water Shut-off | Subsequent Report of Altering Casing |
| Notice of Intention to Redrill or Repair Well | Subsequent Report of Redrilling or Repair |
| Notice of Intention to Shoot, Acidize, or Cement | Subsequent Report of Abandonment |
| Notice of Intention to Pull or Alter Casing | Supplementary Well History |
| Notice of Intention to Abandon Well | Report of Fracturing |
| **Notice of Change of Operator** X | |

(Indicate Above by Check Mark Nature of Report, Notice, or Other Data)

March 25, 1965

Following is a 'notice of intention to do work' 'report of work done' on land 'owned' 'leased' described as follows:

LEASE Mary Ann Scout

MONTANA (State) Roosevelt (County) Field

Well No. 1 5 (Sec.) 29N (Township) 50E (Range) MPM (Meridian)

The well is located 660 ft. from 'N' 'S' line and 660 ft. from 'W' line of Sec. 5

LOCATE ACCURATELY ON PLAT ON BACK OF THIS FORM THE WELL LOCATION AND SHOW LEASE BOUNDARY

The elevation of the derrick floor above the sea level is no record to date

READ CAREFULLY — DETAILS OF PLAN OF WORK — READ CAREFULLY

State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work; particularly all details of all Shooting, Acidizing, Fracturing, etc.

DETAILS OF WORK
RESULT

This form filed as notice of change of operator from Humble Oil & Refining Company to Phillips Petroleum Company. Lease name to be changed from Mary Ann Scout to Scout "A". (40 Acres - SW/4, SW/4 of Section 5-29N-50E).

NOTE: This Sundry Notice of Change of Operator is being approved pending approval by the United States Geological Survey inasmuch as it is a Ft. Peck Tribal lease, and approval or disapproval should first be made by the U.S.G.S.

Approved subject to conditions on reverse of form

Date April 1, 1965

By James F. Kelly, District Office Agent

Exec. Sec'y.

Company Phillips Petroleum Company

By [signature]

Title Area Superintendent

Address Box 938, Cut Bank, Montana

NOTE: Reports on this Form to be submitted to the District Agent for Approval in Quadruplicate

WHEN USED AS PERMIT TO DRILL, THIS EXPIRES ___ DAYS FROM DATE OF APPROVAL

25

Form No. 2
GENERAL RULES
201, 202, 213,
216, 219, 233.1

(SUBMIT IN TRIPLICATE)

TO

# OIL AND GAS CONSERVATION COMMISSION OF THE STATE OF MONTANA

BILLINGS OR SHELBY

NOTICE!
THIS FORM BECOMES A PERMIT WHEN STAMPED APPROVED BY AN AGENT OF THE COMMISSION.

## SUNDRY NOTICES AND REPORT OF WELLS

| | | | |
|---|---|---|---|
| Notice of Intention to Drill | | Subsequent Report of Water Shut-off | |
| Notice of Intention to Change Plans | | Subsequent Report of Shooting, Acidizing, Cementing | X |
| Notice of Intention to Test Water Shut-off | | Subsequent Report of Altering Casing | |
| Notice of Intention to Redrill or Repair Well | | Subsequent Report of Redrilling or Repair | |
| Notice of Intention to Shoot, Acidize, or Cement | | Subsequent Report of Abandonment | |
| Notice of Intention to Pull or Alter Casing | | Supplementary Well History | |
| Notice of Intention to Abandon Well | | Report of Fracturing | |

(Indicate Above by Check Mark Nature of Report, Notice, or Other Data)

January 23, 1956

Following is a [redacted] report of work done on land [redacted] leased described as follows:

LEASE West Poplar Unit

MONTANA (State) Roosevelt (County) West Poplar (Field)

Well No. 4 SW SW Section 5 (m. sec.) 29N (Township) 50E (Range) Meridian)

The well is located 860 ft. N. of S line and 660 ft. E. of W line of Sec. 5

The elevation of the derrick floor above the sea level is 2635'

READ CAREFULLY DETAILS OF PLAN OF WORK READ CAREFULLY

(State names of and expected depths to objective sands; show size, weights, and lengths of proposed casings, indicate mudding jobs, cementing points, and all other important proposed work, particularly all details results Shooting, Acidizing, Fracturing)

DETAILS OF WORK
RESULT

Pulled rods and pump to stratafrac Charles "C" zone thru perforations 6450'-6468' w/5000 gals Jel X500. Jel entered formation at 500 psig at rate of 2 bbls/min., increased rate to 5½ bbls/min with progressive increase in pressure to maximum of 2400 psig when all Jel had been injected. Treating materials were displaced with 40 bbls lease crude at 2500 psig and 5½ bbls/min. No sand was used in treatment. Ran rods and pump. Job complete 12/15/55.

Prior to treatment, well was averaging 25 BO and 5 BW per day. First 10-day average following treatment was 51 BO, 28 BW per day. The well is currently producing at a rate of 36 BO & 18 per day.

Verbal approval for above received from Mr. M. P. Antry.

Approved 1/26/56 (Date)

John R. Haug

Title Supv.

District Office Agent

Company THE CARTER OIL COMPANY

By J. Roy Dorrough

Title Division Production Manager

Address P. O. Box 1[illegible], Billings, Montana

COPY ORIGINAL SIGNED BY J. ROY DORROUGH

RECEIVED

NOTE.—Reports on this Form to be submitted to the District Agent for Approval in Triplicate.

OVER

OIL AND GAS CONSERVATION COMMISSION OF THE STATE OF MONTANA BILLINGS

26

Form No. 2
File at
Billings
or Shelby

Locate
Well
Correctly

Form No. 2
File at
Billings
or Shelby

Locate
Well
Correctly

swabbed off load oil & acid water. In 4 hrs swabbed 32 bbls fluid, 50% BS&W. 6-hr swab test rec 74 bbls fluid - 38 BO, 23 bbls emulsion, 13 bbls free wtr. 24-hr swab test recovered 174 bbls fluid - 120 BO, 40 bbls emulsion, 14 BW. 20-hr swab test rec 102 bbls fluid - 70 BO, 18 bbls BS, 14 BW. 20-hr swab test rec 117 bbls fluid - 88 BO, 20 bbls emulsion, 9 BW. Acid-fraced perf 6450'-6468' w/500 gals Jel X500, followed by 1000 gals etching acid; pumped in @ max pump capacity of 3 bbls/min; max pressure 1700#, standing pressure 1150#; swabbed load oil & spent acid. 3-hr swab test rec 32 bbls new fluid - 23 BO, 6 bbls emulsion, 3 BW. 16-hr swab test rec 165 bbls fluid - 112 BO, 28 bbls BS, 25 BW; fluid level stabilized @ 4500'.

Set 6450' of 2-7/8" OD 6.5# tubing, with 6' perf nipple below packer, and seating nipple @ 6345'. To run rods & install pumping equipment.

casing and possible productive formations exposed to the process of drilling and completion.

8 All production strings of casing must be tested by bailing or pressure to determine if there is a tight bond with the formation or possible leaks in the casing. The results of the test must be reported on Sundry Notices and Report of Wells form, said report to include the size, weight, thread and length of casing, amount of cement used, and date work is done. If test shows failure, the defect must be corrected before any drilling operations are resumed.

9 A satisfactory drilling record must be kept for each tour, showing top and thickness of each and all formations drilled and all other information of value, one copy of which is to be kept at the rig while drilling is in progress for examination when an agent visits the well.

10 All producing wells must be marked with name of the operator, number of the well, and location, using reasonable precautions to preserve these markings at all times.

11 Copies of all directional surveys, electrical logs, or tops from electrical log if electric survey is run, formation tests, and cementing record, as furnished by the cementing company, etc., must be filed with the State agent of the district together with four copies of the log, upon completion of the well.

12 All work must be done in conformity with the regulations of the Oil & Gas Conservation Commission of the State of Montana, as contained in "General Rules and Regulations," and amendments thereto, as well as regulations prescribed in lieu thereof.

27

Form No. 2

GENERAL RULES
201, 202, 213,
216, 219, 233.1

(SUBMIT IN TRIPLICATE)

TO

OIL AND GAS CONSERVATION COMMISSION
OF THE STATE OF MONTANA
BILLINGS OR SHELBY

NOTICE!
THIS FORM BECOMES A PERMIT WHEN STAMPED APPROVED BY AN AGENT OF THE COMMISSION.

# SUNDRY NOTICES AND REPORT OF WELLS

| | | | |
|---|---|---|---|
| Notice of Intention to Drill | | Subsequent Report of Water Shut-off | |
| Notice of Intention to Change Plans | | Subsequent Report of Shooting, Acidizing, Cementing | X |
| Notice of Intention to Test Water Shut-off | | Subsequent Report of Altering Casing | |
| Notice of Intention to Redrill or Repair Well | | Subsequent Report of Redrilling or Repair | |
| Notice of Intention to Shoot, Acidize, or Cement | | Subsequent Report of Abandonment | |
| Notice of Intention to Pull or Alter Casing | | Supplementary Well History | |
| Notice of Intention to Abandon Well | | Report of Fracturing | X |
| | | Report of testing | X |

(Indicate Above by Check Mark Nature of Report, Notice, or Other Data)

October 25 19 54

Following is a { [redacted] / report of work done } on land { [redacted] / leased } described as follows:

LEASE Ft. Peck Tribal

MONTANA (State) Roosevelt (County) W Poplar WC (Field)

Well No. 4 SW SW Section 5 (m. sec.) 29N (Township) 50E (Range) Meridian

The well is located 860 ft. { N. / S. } of S line and 660 ft. { E. / W. } of W line of Sec 5

The elevation of the derrick floor above the sea level is 2635

RECEIVED
OCT 30 1954
OIL AND GAS CONSERVATION COMMISSION
OF THE STATE OF MONTANA - BILLINGS

READ CAREFULLY DETAILS OF PLAN OF WORK READ CAREFULLY

(State names of and expected depths to objective sands; show size, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work, particularly all details results Shooting, Acidizing, Fracturing)

DETAILS OF WORK
RESULT

TD 6565'; PBTD 6470'; drld cement & conditioned hole to 6513'. DST of perforations 6471'-6478' w/packer set @ 6465'; open 4 hrs, weak blow which died after 3 minutes & remained dead for remainder of test; rec 130' salt wtr w/trace of oil; IFP 0, FFP 0, 20-min SIP 0, HP 3060#. Set Baker retainer @ 6470'. Perforated w/4 jet shots/ft 6450'-6468'; displaced 500 gals etching acid opposite perforations - pressured up to 5100# - no break; reperforated 6450'-6468' w/4 15/32" A-2 bullets; set packer @ 6436'; acidized w/500 gals etching acid; max press 4300#, broke to 2400#; standing pressure 1900#, bled off gradually. Recovered load oil & swabbed 4 bbls new oil/hr for 2 hrs - fluid level @ 4000', no gas. Next 2 swab runs recovered 4.5 bbls oil w/.5% BS, and 4.5 bbls oil w/30% BS, respectively. 8-hr swab test rec 38 bbls fluid - 29 BO w/1% BSW, 9 bbls tight emulsion. 10-hr swab test recovered 66 bbls fluid - 50 BO w/2% BSW, 16 Bbls BSW, 75% wtr. 6-hr swab test rec 54 bbls fluid - 46 BO, 3% BSW, 8 bbls BSW. Reacidized 6450'-6468' w/1000 gals X100 acid;

(OVER)

APPROVED SUBJECT TO CONDITIONS SHOWN ON REVERSE.

Approved 11-1-54 (Date)

Mark P. Hurley

Title Geologist-Engineer

Approved 11-1-54 George L. Bostrom, Acting Dist. Engr. USGS

Company THE CARTER OIL COMPANY

By COPY ORIGINAL SIGNED R. C. CURTIS
R. C. Curtis

Title Division Production Manager

Address P. O. Box 318, Billings, Montana

NOTE:—Reports on this Form to be submitted to the District Agent for Approval in Triplicate

28

Exhibit IX

NAME AND DEPTH OF USDWS
AND GEOLOGICAL DATA ON
INJECTION AND CONFINING ZONES
Vickers #6-15 SWDW

1. GEOLOGIC NAME OF SURFACE FORMATION

Tongue River Glacial Till

2. ESTIMATED TOPS OF IMPORTANT GEOLOGIC MARKERS

Judith River: 1010'
Dakota: 3657'

**Schlumberger**

SIMULTANEOUS
**DUAL LATEROLOG MICRO-SFL**

COMPANY CENTURY OIL AND GAS CORPORATION

WELL VICKERS NO. 6-15

FIELD WILDCAT

COUNTY ROOSEVELT STATE MONTANA

LOCATION: SW/SE 660 FSL 2130 FEL; SEC 6; TWP 29N; RANGE 50E; API SERIAL NO

Other Services: FDC/CNL/GR

COUNTY ROOSEVELT
FIELD WILDCAT
LOCATION SEC.6-29N-50E
WELL VICKERS NO. 6-15
COMPANY CENTURY OIL AND GAS CORPORATION

Permanent Datum: G.L. Elev.: 2546
Log Measured From K.B. 11 Ft. Above Perm. Datum
Drilling Measured From K.B.

Elev.: K.B. 2557
D.F. -
G.L. 2546

| | | | | | |
|---|---|---|---|---|---|
| Date | 7-6-81 | | | | |
| Run No. | ONE | | | | |
| Depth—Driller | 6500 | | | | |
| Depth—Logger (Schl.) | 6505 | | | | |
| Log Interval | 6504 | | | | |
| Top Log Interval | 420 | | | | |
| Casing—Driller | 8-5/8@ 403 | @ | @ | @ | @ |
| Casing—Logger | 420 | | | | |
| Bit Size | 7-7/8 | | | | |
| Type Fluid in Hole | SALT-STARCH | | | | |
| Dens. / Visc. | 10.4 / 38 | | | | |
| pH / Fluid Loss | 6 / 9 ml | ml | ml | ml | ml |
| Source of Sample | MUD TANK | | | | |
| Rm @ Meas. Temp. | .050 @ 68 °F | @ °F | @ °F | @ °F | @ °F |
| Rmf @ Meas. Temp. | .043 @ 68 °F | @ °F | @ °F | @ °F | @ °F |
| Rmc @ Meas. Temp. | .075 @ 68 °F | @ °F | @ °F | @ °F | @ °F |
| Source: Rmf / Rmc | M / C | | | | |
| Rm @ BHT | .023 @ 159 °F | @ °F | @ °F | @ °F | @ °F |
| TIME: Circulation Stopped | 0215 : 7-6 | | | | |
| TIME: Logger on Bottom | 0630 : 7-6 | | | | |

RE The well name, location and borehole reference data were furnished by the customer.

| | | | | |
|---|---|---|---|---|
| | ONE | | | |
| der No. | 223412 | | | |
| | FULL | | | |
| M CL. | 200,000 | | | |
| NT DATA | | | | |
| | DLM-B-752 | | | |
| | MRM-AB-2710 | | | |
| DLC) | DLC-BB-1751 | | | |
| SRE) | SRE-B-1928 | | | |
| ) | DLS-D-885 | | | |
| ) | SRS-D-713 | | | |
| rode (DLE) | - | | | |
| Panel | CPU-CBB-1409 | | | |
| der (TTR) | MTU-D-2775 | | | |
| der (DRE) | OMU-CBA-1001 | | | |
| heel (CPW) | IDW-B-1972 | | | |
| Type | CMEZ-CALIPER | | | |
| No. | 2 | | | |
| one S. O. Inches | - | | | |
| ION DATA | | | | |
| BKG. API | 43 | | | |
| Source API | 199 | | | |
| G DATA | | | | |
| Sensitivity | 100/200 | | | |
| Scale -100 Div. | 0-100/0-200 | | | |
| D.C. FT. | 1 | | | |
| | 60 | | | |
| HOLE TEMPERATURE | | | | |
| ng Hole | 0515 : 7-6 | | | |
| n Reached | 0600 : 7-6 | | | |
| Off Bottom | 0630 : 7-6 | | | |
| f Hole | 0900 : 7-6 | | | |
| to Therm. | 38 | | | |
| ter #1 | 159 °F | °F | °F | °F |
| ter #2 | - °F | °F | °F | F |
| ter #3 | - °F | °F | °F | F |
| DRILL STEM TEST | | | | |
| @ 100 °F | - ΩM | ΩM | ΩM | ΩM |
| @ 100 °F | - ΩM | ΩM | ΩM | ΩM |

SCALE CHANGES

| Type Log | Depth | Scale Up Hole | Scale Down Hole |
|---|---|---|---|
| GR | 5430 | 0-200 | 0-100 |
| GR | 420 | 0-100 | 0-200 |

REMARKS:

TENSION MEASURE POINT -7"

LR CALIPER AND MSFL @ 3200'

SP PRESENTED AT CLIENT'S REQUEST.

MSFL AND CALIPER ON 5" ONLY.

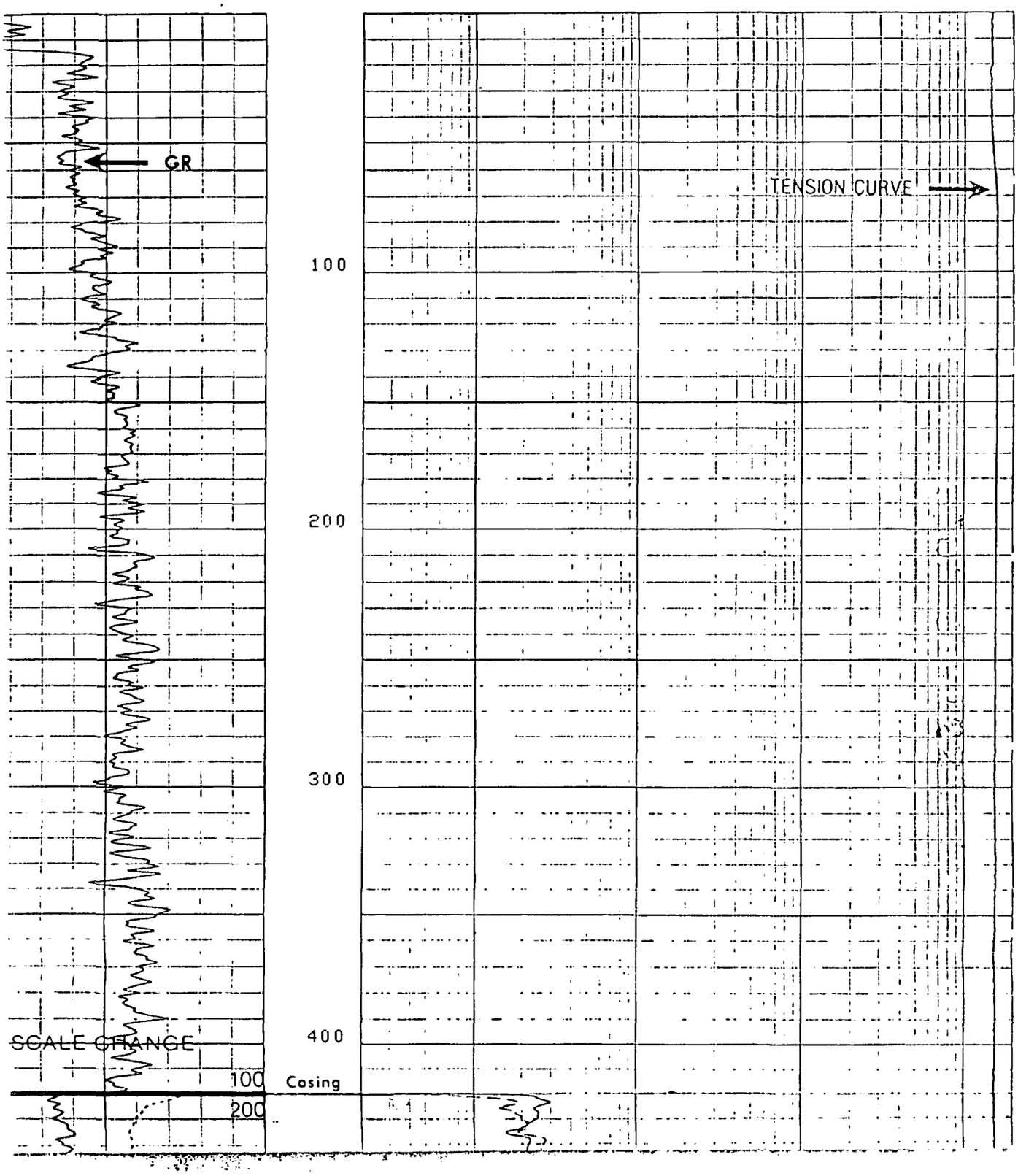
...pretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our General Terms and Conditions set forth in our Price Schedule.

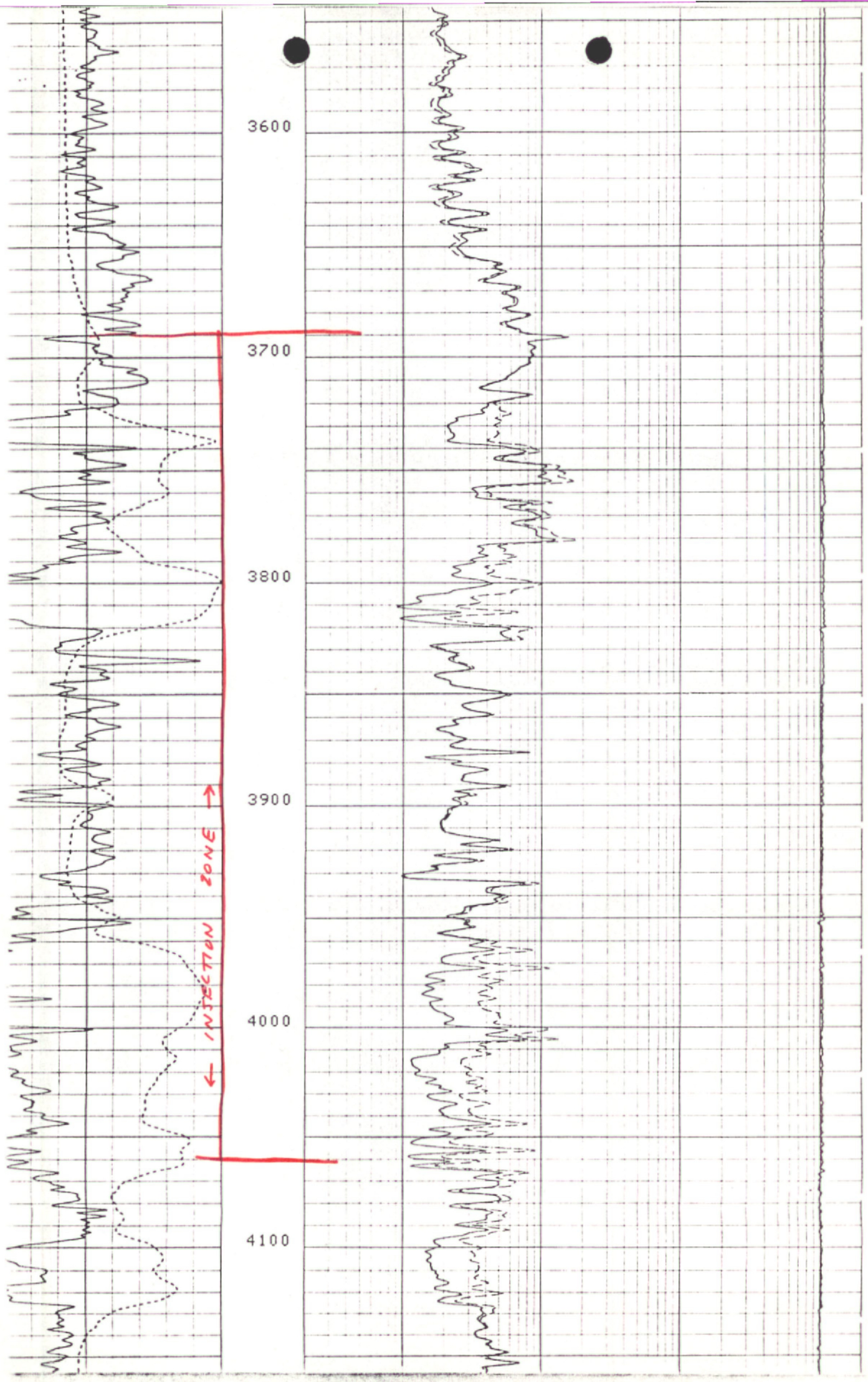
| NAME | UNIT | VALUE | NAME | UNIT | VALUE | NAME | UNIT | VALUE |
|---|---|---|---|---|---|---|---|---|
| BHS | | OPEN | FPHI | | PHIX | BS | INCH | 7.875 |
| DD | | 0.0 | | | | | | |

| | | | |
|---|---|---|---|
| SP (MV ) | LLD (OHMM) | TENS(LB ) | |
| 0.0 0.0 | 2000. 200000 | 10000. 0.0 | |
| GR (GAPI) | LLS (OHMM) | | |
| 100.0 | 0.2000 2000. | | |
| | LLD (OHMM) | | |
| | 0.2000 2000. | | |

FILE

9

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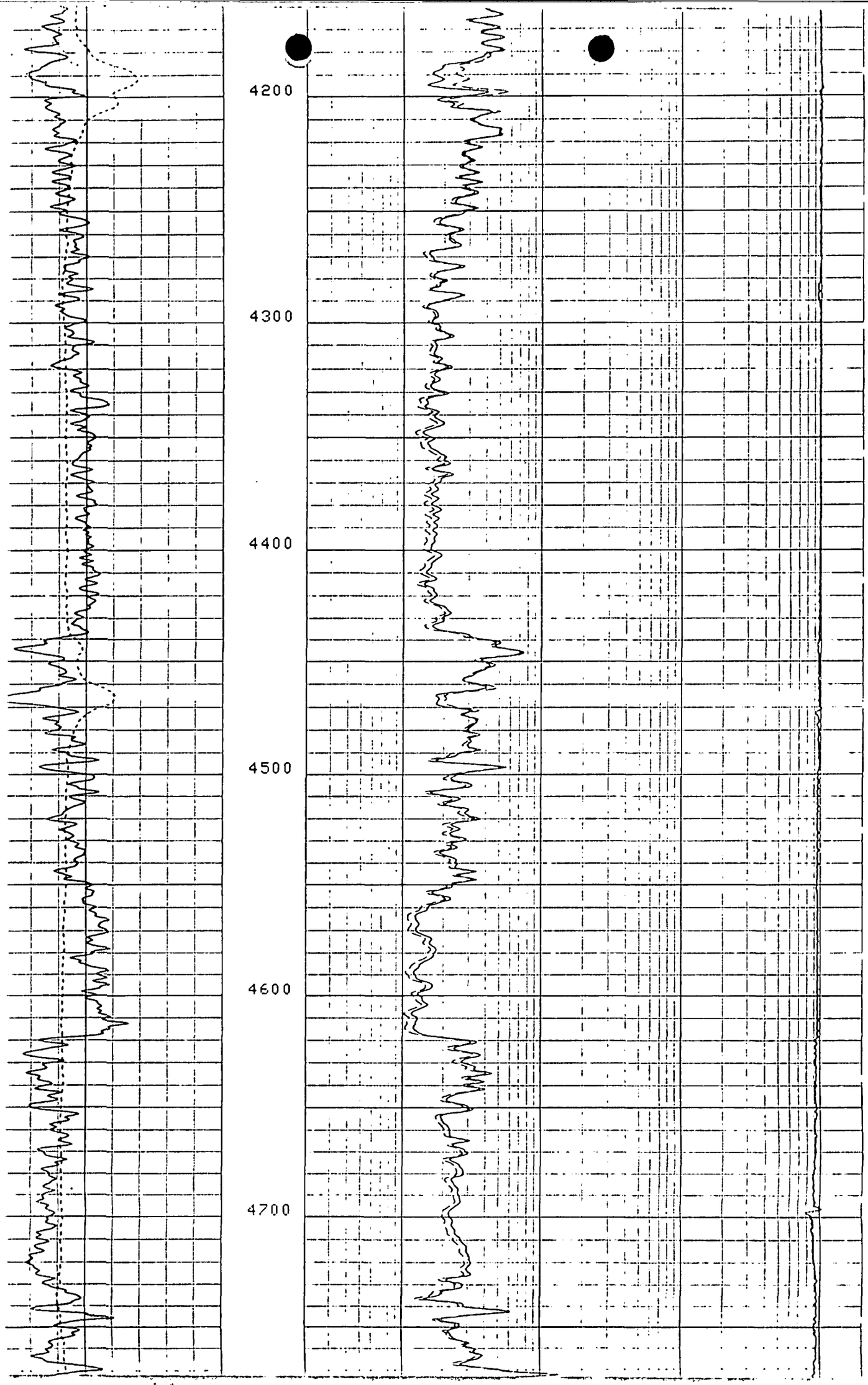
3800
3900
4000
4100
INJECTION ZONE


4200
4300
4400
4500
4600
4700

| NAME | UNIT | VALUE | NAME | UNIT | VALUE | NAME | UNIT | VALUE |
|---|---|---|---|---|---|---|---|---|
| FPHI | | PHIX | SPT | | STAN | BS | INCH | 7.875 |
| DD | | 0.0 | BHS | | OPEN | | | |

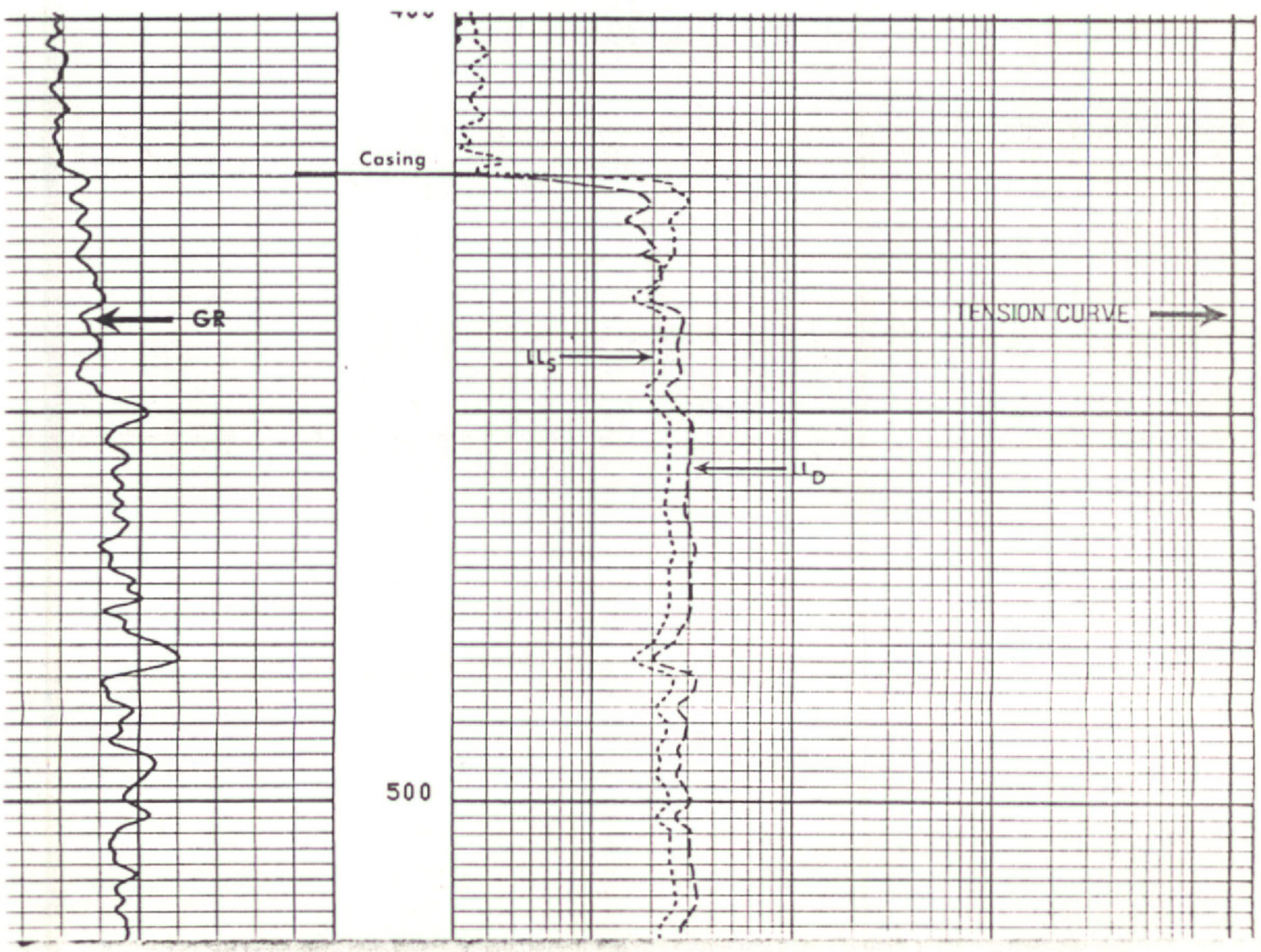
PARAMETERS

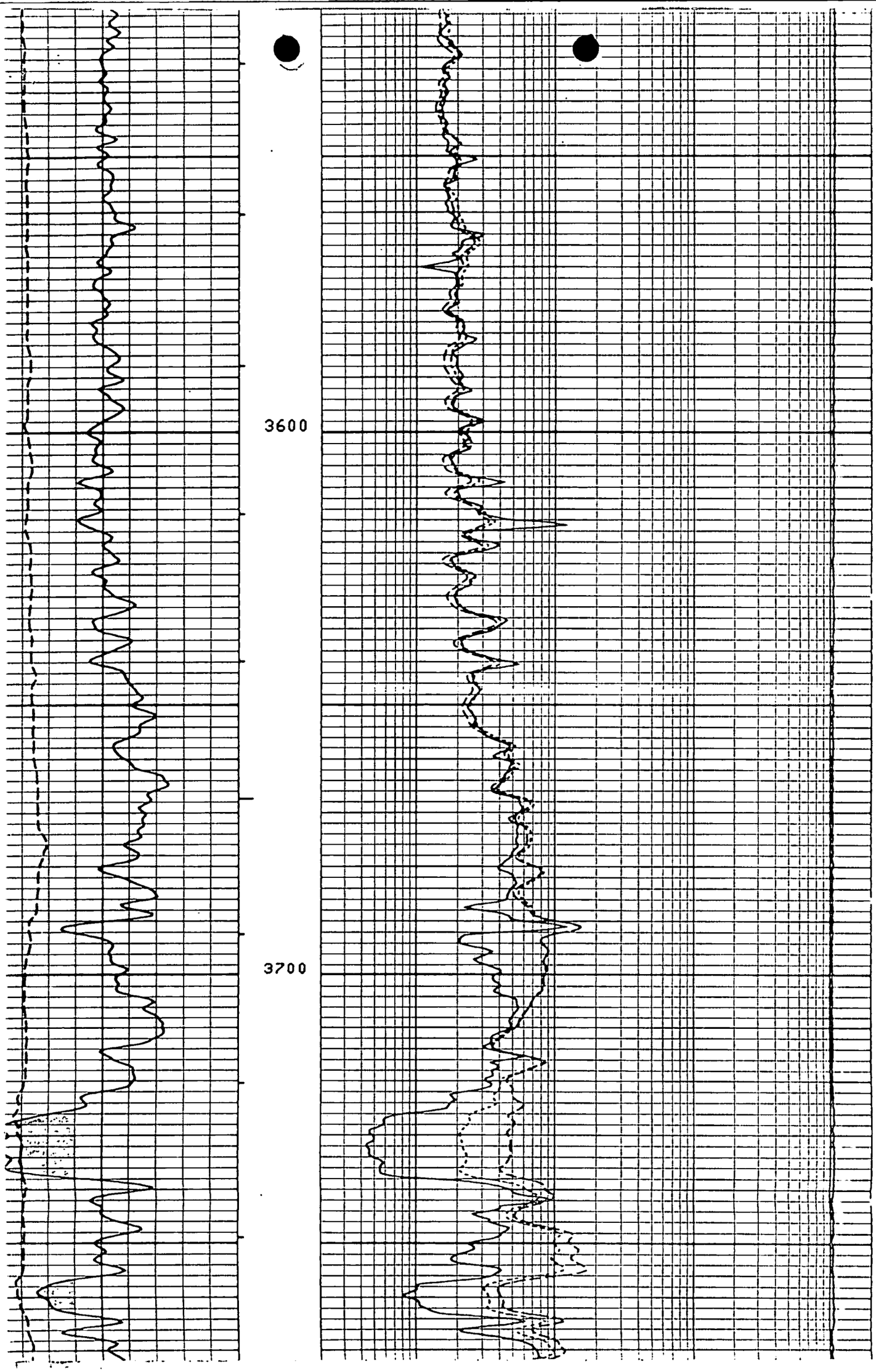
| NAME | UNIT | VALUE | NAME | UNIT | VALUE | NAME | UNIT | VALUE |
|---|---|---|---|---|---|---|---|---|
| FPHI | | PHIX | SPT | | STAN | BS | INCH | 7.875 |
| DD | | 0.0 | BHS | | OPEN | | | |

| | | | |
|---|---|---|---|
| | | LLD (OHMM) | TENS(LB ) |
| | | 2000. 200000 | 10000. 0.0 |
| GR (GAPI) | | LLD (OHMM) | |
| 200.0 | | 0.2000 2000. | |
| CALI(IN ) | | LLS (OHMM) | |
| 00 26.00 | | 0.2000 2000. | |
| CALI(IN ) | | RXO (OHMM) | |
| 00 16.00 | | 0.2000 2000. | |

FILE

6

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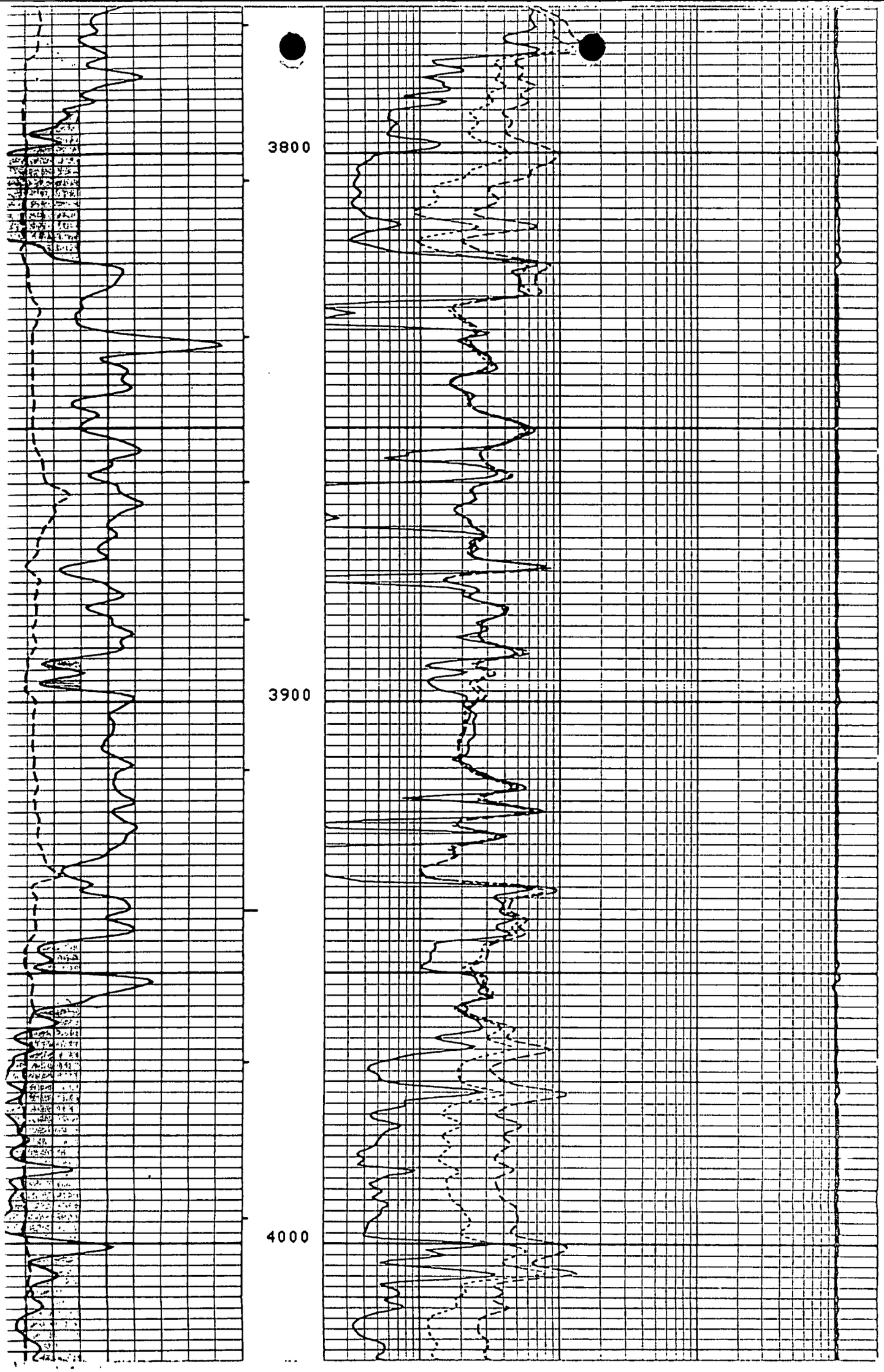
3700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3900
4000

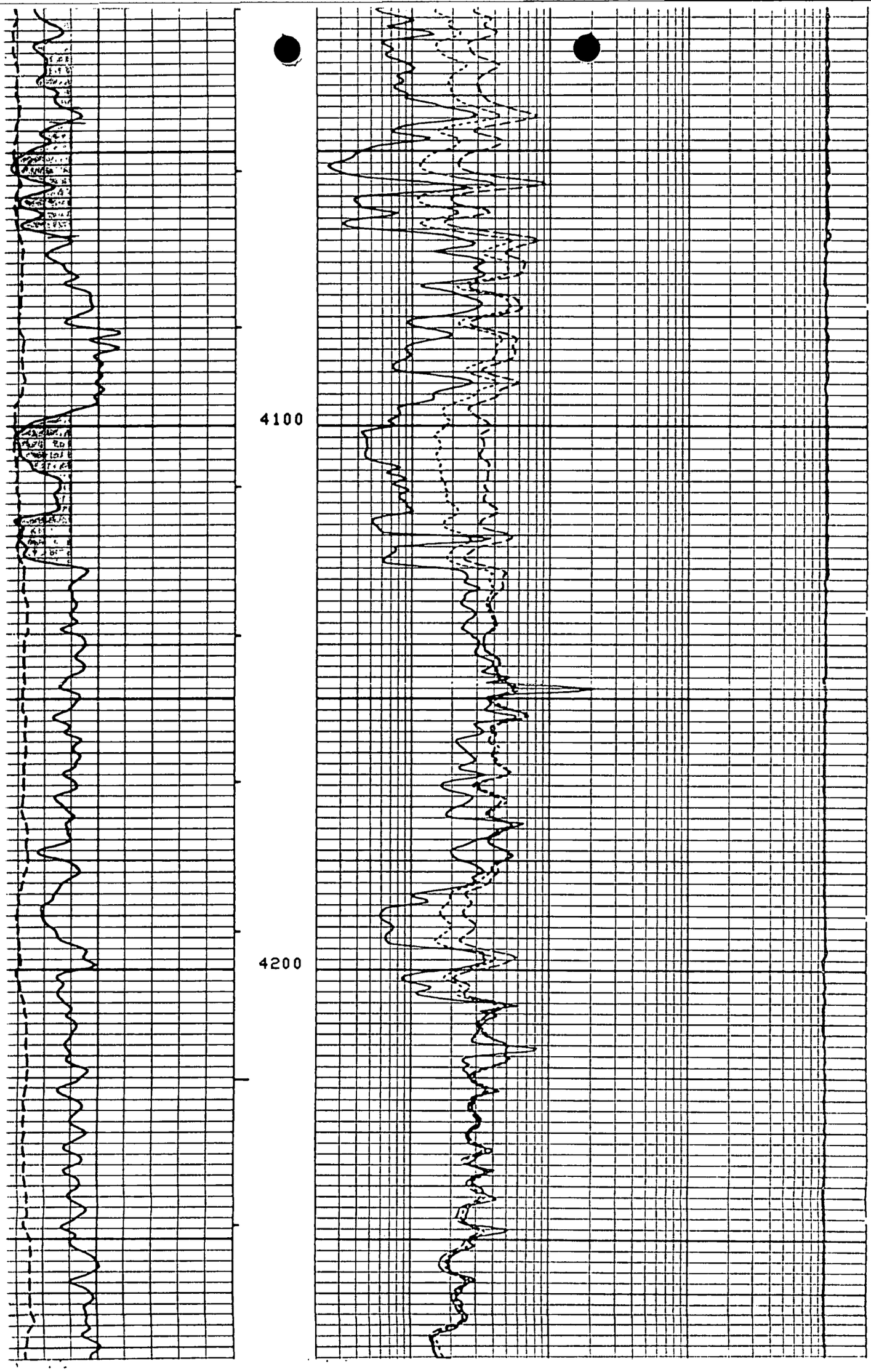
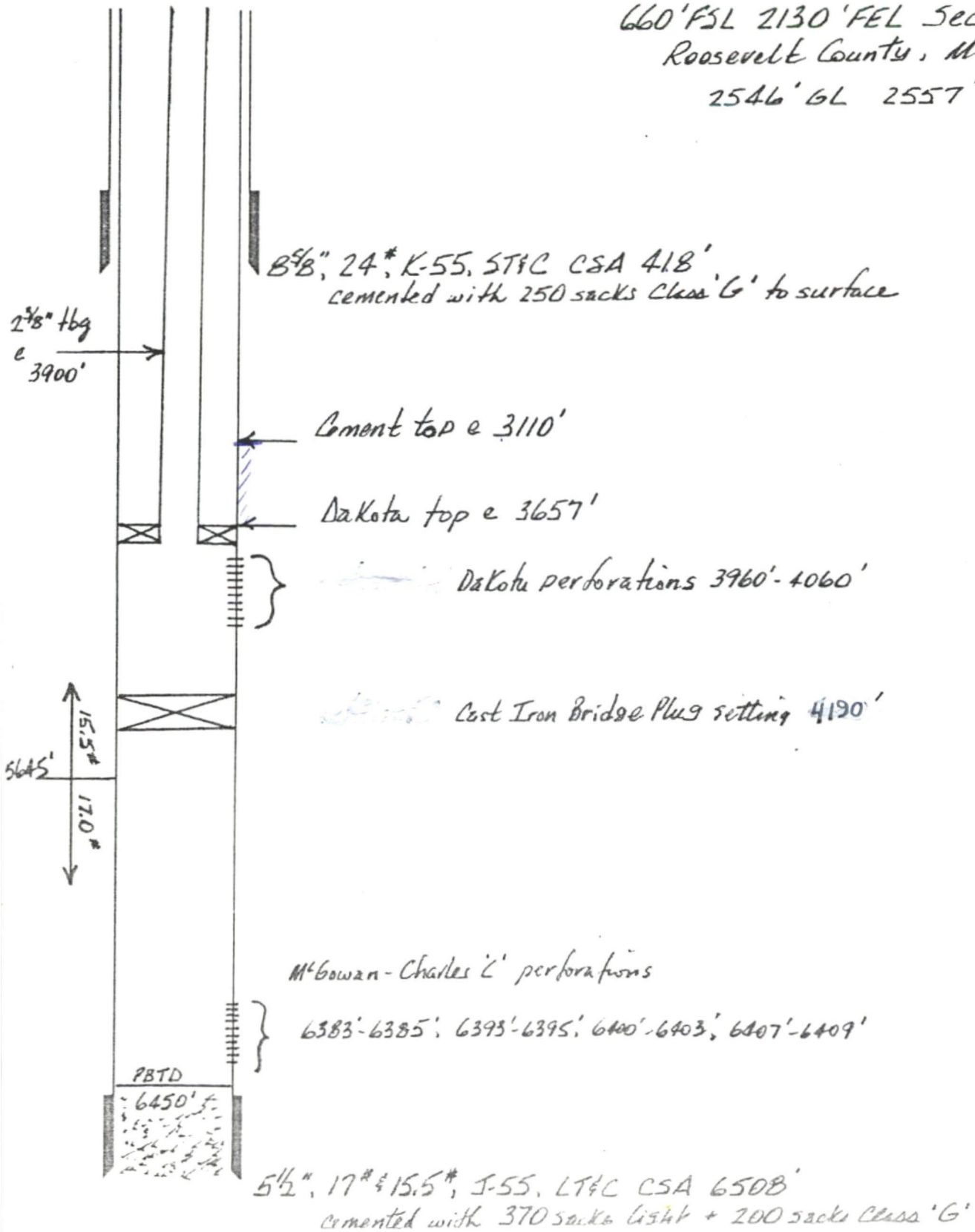

4100
4200

Exhibit X

# WELLBORE CONFIGURATION

DATE 9-16-82 WELL NO. 6-15 LEASE VICKERS FIELD N.W. POPLAR

660'FSL 2130'FEL Sec 6-T29N-R50E
Roosevelt County, Montana
2546' GL 2557' KB




3657
1317
2340

BRIDGE PLUG PACKER CENTRALIZER SCRATCHER BASKET PERFORATION

Exhibit XI

## OPERATING DATA

1. Average daily rate of fluids injected = 1000 BWPD

2. Average daily injection pressure = 550 psig

3. Nature of annulus fluid = 70 barrels fresh water containing 5 gallons Nalco 3900 (corrosion inhibitor)

4. Class I wells only = not applicable

5. Source and analysis of injection fluid = produced formation water from Cox #7-1 well and Mason #7-16 well (analyses attached)

# ANALYTICAL SERVICE LABORATORY REPORT

NALCO

## WATER ANALYSIS *

Company: CENTURY OIL & GAS
POPLAR, MONTANA
DIST.21

Date Printed 5-Aug-81
Analysis No. 81V1238
Date Sampled UNKNOWN
Date Received 3/4/81

Sample Marked: COX 1-7 LEASE WATER LEG AT TREATER

***WATER ANALYSIS***

| DISSOLVED SOLIDS CATIONS | mg/l | meq/l | RESULTS AS COMPOUNDS | mg/l |
|---|---|---|---|---|
| Sodium,Na(calc.) | 61700. | 2680. | | |
| Calcium,Ca | 8400. | 420. | as CaCO3 | 21000. |
| Magnesium,Mg | 243. | 20.0 | as CaCO3 | 1000. |
| Barium,Ba | .0 | .0 | as BaSO4 | .0 |
| Sum of Cations | 70400. | 3120. | | |
| ANIONS | | | | |
| Chloride,Cl | 110000. | 3110. | as NaCl | 182000. |
| Sulfate,SO4 | 439. | 9.2 | as Na2SO4 | 650. |
| Carbonate,CO3 | | | as CaCO3 | |
| Bicarbonate,HCO3 | 137. | 2.2 | as CaCO3 | 112. |
| Sum of Anions | 111000. | 3120. | | |
| TDS CALCULATED | 181000. | | | |
| Total Iron,Fe | 2.8 | .2 | as Fe | 2.8 |
| Acid to Phen,CO2 | >2.4 | 2.1 | as CaCO3 | 210. |

| OTHER PROPERTIES | | CaCO3 STABILITY (Index) | CaSO4 SOLUBILITY (meq/l) |
|---|---|---|---|
| pH (units) | 6.4 | @ 70F | |
| Spec Gravity | 1.163 | @120F | |
| Turbidity (jtu) | 1.3 | @170F | |

Remarks:

3 A. A. ANDERSON
M. R. OLSON

Alton P. Gaines

P. O. BOX 87 · SUGAR LAND, TEXAS 77478

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NALCO CHEMICAL COMPANY
REGIONAL ANALYTICAL LABORATORIES

2111 E. Dominguez St. Carson, CA 90745 | 6216 W. 66th Place Chicago, Illinois 60638 | Box 16A Fairlawn, NJ 08066 | Box 87 Sugar Land, TX 77478

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# ASTRO-CHEM SERVICE LABORATORY

4102 2nd Ave. West  Williston, North Dakota 58801  Phone 701-572-7355
P. O. Box 972

JUN 16 1983
CENTURY OIL & GAS CORP.

WATER ANALYSIS REPORT

SAMPLE NUMBER: W-83-2345  DATE OF ANALYSIS 6/ 8/83

COMPANY: CENTURY OIL & GAS

CITY: ENGLEWOOD  STATE: CO

WELL NAME AND/OR NUMBER: MASON 20-7

DATE RECEIVED 5/31/83  DST NUMBER: #2

SAMPLE SOURCE: SAMPLER

LOCATION: .  OF SEC: .  TWN: .  RNG: .  Charles C

FORMATION: .  DEPTH: .

DISTRIBUTION: WELL DISTRIBUTION LIST

RESISTIVITY@77°F= .186 OHM-METERS  PH= 7.78

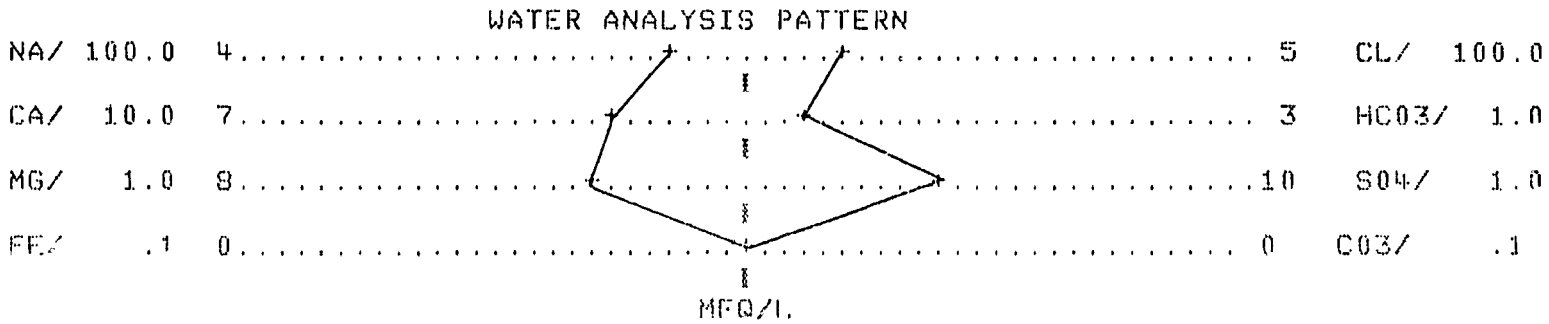
SPECIFIC GRAVITY@77°F=1.025  H2S=NEG

TOTAL DISSOLVED SOLIDS (CALCULATED)= 29830 MG/L

SODIUM CHLORIDE (CALCULATED)= 28500 MG/L

| CATIONS | MEQ/L | MG/L | ANIONS | MEQ/L | MG/L |
|---|---|---|---|---|---|
| CALCIUM | 66.7 | 1337 | CHLORIDE | 488.0 | 17300 |
| MAGNESIUM | 8.0 | 97 | CARBONATE | .0 | 0 |
| SODIUM | 441.9 | 10160 | BICARBONATE | 2.7 | 165 |
| CHROMIUM | .0 | .0 | SULFATE | 10.4 | 500 |
| IRON | .0 | .4 | NITRATE | .0 | 0 |
| BARIUM | .0 | .5 | | | |
| POTASSIUM | 6.9 | 270 | | | |

WATER ANALYSIS PATTERN




REMARKS:

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# ASTRO-CHEM SERVICE LABORATORY

4102 2nd Ave. West Williston, North Dakota 58801 Phone 701-572-7355

P. O. Box 972

RECEIVED JUN 16 1983 CENTURY OIL & GAS CORP.

WATER ANALYSIS REPORT

SAMPLE NUMBER:W-83-2344 DATE OF ANALYSIS 6/ 6/83

COMPANY:CENTURY OIL & GAS

CITY:ENGLEWOOD STATE:CO

WELL NAME AND/OR NUMBER:MASON 20-7

DATE RECEIVED 5/31/83 DST NUMBER:#2

Charles 'C'

SAMPLE SOURCE:BOTTOM

LOCATION:. OF SEC:. TWN:. RNG:.

FORMATION:. DEPTH:.

DISTRIBUTION:WELL DISTRIBUTION LIST

RESISTIVITY@77°F= .106 OHM-METERS PH= 5.63

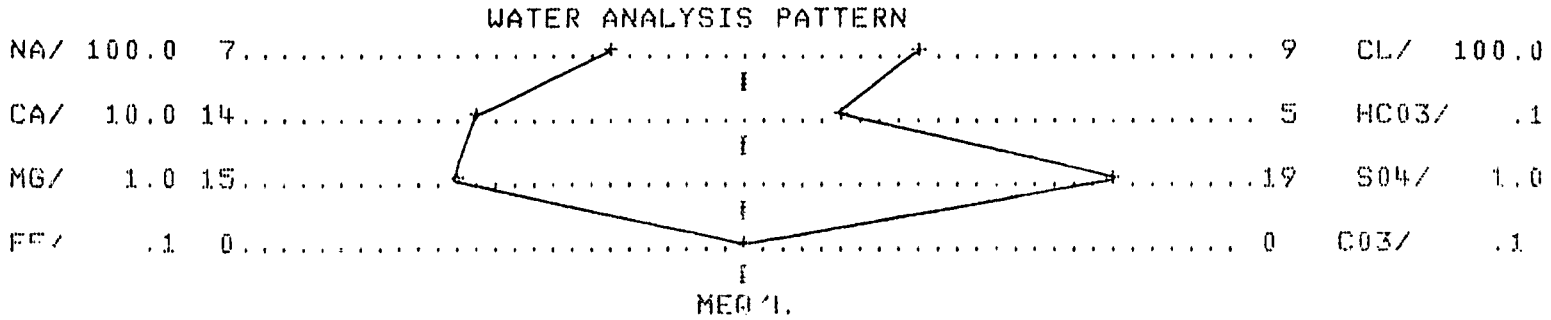
SPECIFIC GRAVITY@77°F=1.040 H2S=POS

TOTAL DISSOLVED SOLIDS,(CALCULATED)= 52570 MG/L

SODIUM CHLORIDE (CALCULATED)= 52300 MG/L

| CATIONS | MEQ/L | MG/L | ANIONS | MEQ/L | MG/L |
|---|---|---|---|---|---|
| CALCIUM | 135.4 | 2713 | CHLORIDE | 894.2 | 31700 |
| MAGNESIUM | 15.0 | 183 | CARBONATE | .0 | 0 |
| SODIUM | 722.1 | 16600 | BICARBONATE | .5 | 31 |
| CHROMIUM | .0 | .0 | SULFATE | 18.7 | 900 |
| IRON | .0 | .4 | NITRATE | .2 | 10 |
| BARIUM | .0 | .9 | | | |
| POTASSIUM | 11.3 | 441 | | | |

WATER ANALYSIS PATTERN




REMARKS:.

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# ASTRO-CHEM SERVICE LABORATORY

4102 2nd Ave. West  Williston, North Dakota 58801  Phone 701-572-7355

P. O. Box 972

## WATER ANALYSIS REPORT

SAMPLE NUMBER: W-83-1958  DATE OF ANALYSIS 5/ 6/83

COMPANY: PHILLIPS OIL COMPANY

CITY: DENVER  STATE: CO

WELL NAME AND/OR NUMBER: #1-33 LONG CREEK

DATE RECEIVED 5/ 5/83  DST NUMBER: #1

SAMPLE SOURCE: MUD PIT

LOCATION: .  OF SEC: 33  TWN: 30N  RNG: 50E

FORMATION: CHARLES "C"  DEPTH: 6224-65

DISTRIBUTION: WELL DISTRIBUTION LIST

---

RESISTIVITY@77°F= .039 OHM-METERS  PH= 6.66

SPECIFIC GRAVITY@77°F=1.200  H2S=NEG

TOTAL DISSOLVED SOLIDS.(CALCULATED)=313400 MG/L

SODIUM CHLORIDE (CALCULATED)= 314400 MG/L

---

| CATIONS | MEQ/L. | MG/L. | ANIONS | MEQ/L. | MG/L. |
|---|---|---|---|---|---|
| CALCIUM | 667.2 | 13370 | CHLORIDE | 5379.4 | 190700 |
| MAGNESIUM | 60.1 | 731 | CARBONATE | .0 | 0 |
| SODIUM | 4610.7 | 106000 | BICARBONATE | 3.7 | 226 |
| CHROMIUM | .8 | 6.9 | SULFATE | 13.5 | 650 |
| IRON | .1 | 2.6 | NITRATE | 1.1 | 67 |
| BARIUM | .1 | 4.6 | | | |
| POTASSIUM | 44.0 | 1720 | | | |

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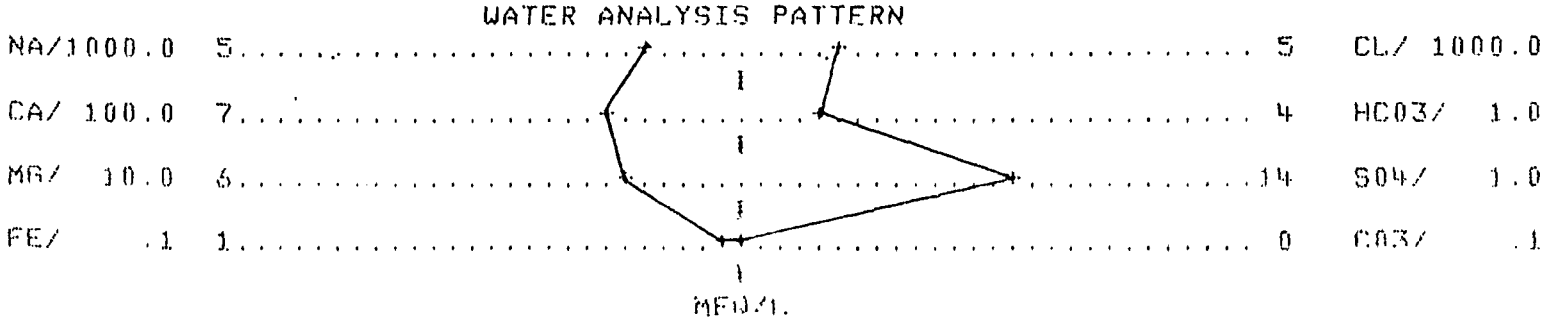
WATER ANALYSIS PATTERN




REMARKS: .

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# ASTRO-CHEM SERVICE LABORATORY

4102 2nd Ave. West  Williston, North Dakota 58801  Phone 701-572-7355

P. O. Box 972

## WATER ANALYSIS REPORT

SAMPLE NUMBER: W-83-4052  DATE OF ANALYSIS 10/ 4/83

COMPANY: PHILLIPS OIL COMPANY

CITY: DENVER  STATE: CO

WELL NAME AND/OR NUMBER: LONG CREEK TRIBAL 1-32

DATE RECEIVED 9/20/83  DST NUMBER: #1

SAMPLE SOURCE: BOTTOM

LOCATION: .  OF SEC: .  TWN: .  RNG: .

FORMATION: CHARLES "C"  DEPTH: 6228-6273

DISTRIBUTION: WELL DISTRIBUTION LIST

---

RESISTIVITY@77°F= .043 OHM-METERS  PH= 6.60

SPECIFIC GRAVITY@77°F=1.180  H2S=NEG

TOTAL DISSOLVED SOLIDS, (CALCULATED)= 248600 MG/L

SODIUM CHLORIDE (CALCULATED)= 249400 MG/L

---

| CATIONS | MEQ/L | MG/L | ANIONS | MEQ/L | MG/L |
|---|---|---|---|---|---|
| CALCIUM | 773.5 | 15500 | CHLORIDE | 4268.0 | 151300 |
| MAGNESIUM | 59.5 | 724 | CARBONATE | .0 | 0 |
| SODIUM | 3392.8 | 78000 | BICARBONATE | 2.6 | 159 |
| CHROMIUM | .0 | .2 | SULFATE | 17.5 | 840 |
| IRON | .2 | 2.8 | NITRATE | .0 | 0 |
| BARIUM | .1 | 8.0 | | | |
| POTASSIUM | 52.4 | 2050 | | | |

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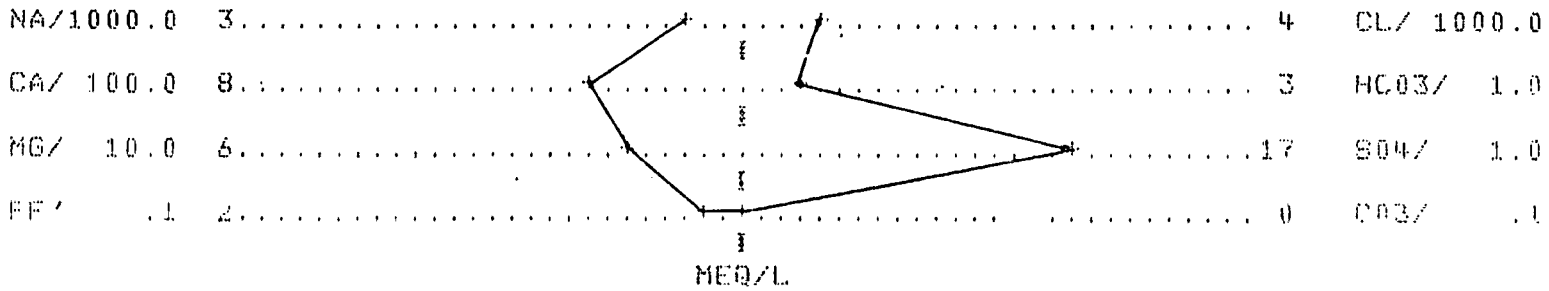
WATER ANALYSIS PATTERN




REMARKS: .

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# ASTRO-CHEM SERVICE LABORATORY

Foote 0 WF

4102 2nd Ave. West  Williston, North Dakota 58801  Phone 701-572-7355

P. O. Box 972

## WATER ANALYSIS REPORT

SAMPLE NUMBER: W-82-5122  DATE OF ANALYSIS 10/20/82

COMPANY: CENTURY OIL & GAS

CITY: DENVER  STATE: CO

WELL NAME AND/OR NUMBER: FOOTE #8-5

DATE RECEIVED 10/ 4/82  DST NUMBER: #2

SAMPLE SOURCE: SAMPLE CHAMBER

LOCATION: .  OF SEC: .  TWN: .  RNG: .

FORMATION: CHARLES  DEPTH: 6373-6385

DISTRIBUTION: WELL DISTRIBUTION LIST

RESISTIVITY@77°F= .043 OHM-METERS  PH= 6.18

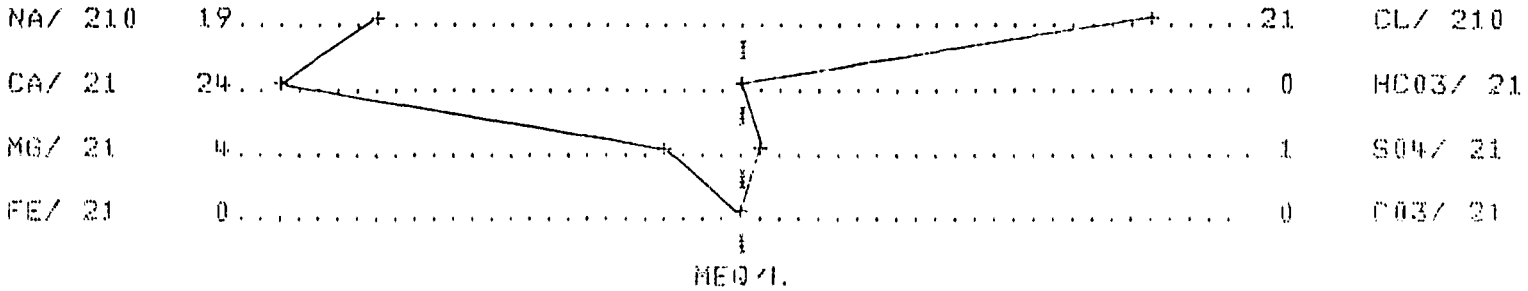
SPECIFIC GRAVITY@77°F=1.175  H2S=NEG

TOTAL DISSOLVED SOLIDS, (CALCULATED)= 262100 MG/L

SODIUM CHLORIDE (CALCULATED)= 260000 MG/L

| CATIONS | MEQ/L | MG/L | ANIONS | MEQ/L | MG/L |
|---|---|---|---|---|---|
| CALCIUM | 493.0 | 9880 | CHLORIDE | 4448.5 | 157700 |
| MAGNESIUM | 81.0 | 985 | CARBONATE | .0 | 0 |
| SODIUM | 4019.1 | 92400 | BICARBONATE | 1.5 | 92 |
| CHROMIUM | .0 | .2 | SULFATE | 20.8 | 1000 |
| IRON | .6 | 10.7 | NITRATE | .0 | 0 |
| BARIUM | .0 | 3.1 | | | |

WATER ANALYSIS PATTERN




REMARKS: .

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Exhibit XIII

CENTURY OIL & GAS CORPORATION
Drilling Report

CENTURY VICKERS #6-15
Roosevelt Co., MT (N.W. Poplar)
Prop. TD: 6500' Charles Zone

Location: 660' FSL 2130' FEL, SW SE Sec. 6-T29N-R50E

06/22/81 Location complete. Finishing access road. Bird #5 will be moving in this pm. Expect to spud 6/23/81.

06/24/81 Depth - 447' (made 447' in 2½ hours, day 1). Current operations: WOC. Spudded at 8:30 pm 6/23/81. Set 8-5/8", 24#, K-55, ST&C casing at 418'. Cemented with 250 sacks class G, ¼# flocele, 3% $CaCl_2$ with returns to surface. Cemented in place 7:00 am 6/24/81. Bit 12¼" OSC#3 retip.

06/25/81 Depth - 2151' (made 1704' in 8¼ hours, day 2). Current operations: Drilling. Surveys: 1¼° @ 1000', 1° @ 1655'.
Wt. 20/25,000, 200 RPM, pump 800 psi, 64 SPM, drilling with brine (250,000± ppm salt)/natural mud.
Bit #1 - 7-7/8" Smith SDS made 1704' in 8¼ hours.
Drilling 8¼ hours, trips ½ hour, WOC 8 hours, NU and test BOPE to 1000 psi 4-3/4 hours, drill cement 2¼ hours, survey 3/4 hours.

06/26/81 Depth - 3946' (made 1795' in 19 hours, day 3). Current operations: Drilling. MW 9.8, vis 31, WL 25. Surveys: 3/4° @ 2841', 1° @ 3372'.
WOB 30,000#, RPM 100, pp 500, 60 SPM
Bit #1 - 7-7/8" SDF out at 2841', made 2394' in 13-3/4 hours
Bit #2 - 7-7/8" SDT in at 2841', made 1105' in 13½ hours.

06/27/81 Depth - 4541' (made 595' in 17¼ hours, day 4). Current operations: Tripping for bit #4. MW 10.3, vis 33, WL 24, Ph 6. Surveys: 2° @ 4541'.
WOB 35,000#, RPM 80-100, PP 500 psi, 58 SPM.
Bit #2 made 1290' in 18¼ hours,
Bit #3 - 7-7/8" Smith DGJ made 410' in 12½ hours.
CTD - $161,106.

06/28/81 Depth - 4910' (made 369' in 21-3/4 hours, day 5). Current operations: Drilling. MW 10.3, vis 31, WL 16, Ph 6, salinity 200,000 ppm (added salt after mud check). Surveys: 2° @ 4803'.
WOB 35,000-40,000#, RPM 65-70, PP 800 psi, 64 SPM
Bit #4 - 7-7/8" Hughes J-22 made 371' in 21-3/4 hours.
DWC - $12,780; CTD - $173,886.

06/29/81 Depth - 5270' (made 360' in 23¼ hours, day 6). Current operations: Drilling. MW 10.3, vis 31, WL 18, Ph 6, salt 346,500 ppm.
WOB 40,000#, RPM 65, PP 800 psi, 64 SPM
Bit #4 made 729' in 45 hours.
DWC - $12,736; CTD - $186,622.

06/30/81 Depth - 5608' (made 338' in 22-3/4 hours, day 7). Current operations: Drilling. MW 10.4, vis 32, WL 12, Ph 6. Surveys: ½° @ 5299'. WOB 40,000#, RPM 65, PP 800 psi, 64 SPM.
Bit #4 made 1067' in 67-3/4 hours.
DWC - $9,769 CTD - $196,391.

CENTURY OIL & GAS CORPORATION
Drilling Report

CENTURY VICKERS #6-15
Roosevelt Co., MT (N.W. Poplar)
Prop. TD: 6500'

07/01/81 Depth - 5868' (made 260' in 20¼ hours, day 8). Current operations: Drilling. Worked tight connection at 5608' for 3¼ hours. MW 10.4, vis 34, WL 10, Ph 6.0, salt 313,500 ppm.
WOB 40,000#, RPM 65, PP 500 psi, SPM 64.
Bit #4 J-22 made 1317' in 88 hours.
DWC - $9,469 CTD - $205,860

07/02/81 Depth 6171' (made 303' in 18½ hours, day 9). Current operations: Tripping for bit #5. MW 10.4, vis 34, WL 10, Ph 7.0, salt 334,950.
Survey: 1¼° @ 6171'. Sample tops: 2nd Salt 6012' (-3452') 11' low to Cox #7-1, 3rd Salt 6158' (-3598') 11' low to Cox #7-1.
WOB 40,000, RPM 65, PP 800 psi, SPM 64.
Bit #4 - 7-7/8" J-22 made 1620' in 106½ hours. (Condition 6-6-I)
DWC - $9,696 CWC - $215,556

07/03/81 Depth 6380' (made 209' in 22¼ hours, day 10). Current operations: Drilling. MW 10.4, vis 36, WL 10, Ph 7, salt 330,000 ppm.
WOB 40,000#, RPM 65, PP 850 psi, SPM 64.
Bit #5 - 7-7/8" J-22 made 209' in 22¼ hours.
DWC - $9,314 CTD - $334,870

07/04/81 Depth 6412' (made 32' in 2½ hours, day 11). Current operations: POOH with DST #1. MW 10.4, vis 40, WL 8, Ph 7, salt 330,000 ppm.
WOB 40,000#, RPM 65, PP 950 psi, SPM 64.
Bit #5 made 241' in 24-3/4 hours. (condition Green)
DST #1 6370-6412'
Times: 10-60-180-240
Recovery: 796' SOGCM 4.2 bbls., top, 5% oil±
796' SOGCSW, 5.9 bbls., bottom, 1% oil±
Sample: Total 2500 cc; 1780 cc SW, 30 cc oil, 840 cc HGCO emulsion (oil & water), ½ $ft^3$ gas at 300 psig.
Pressures: inside at 6381'; IH 3563, IF 45-121, ISI 2705, FH 3563, FF 133-537, FSI 2680
outside at 6387'; IH 3560, IF 62-124, ISI 2707, FH 3560, FF 149-538, FSI 2695
BHT 195°F
Water sample: 0.1 at 79°F 180,000 ppm $Cl^-$ ?
Pit Mud: 0.04 at 70°F 220,000 ppm $Cl^-$
Pipe SW: 0.05 at 79°F 170,000 ppm $Cl^-$
DWC - $8,197 CTD - $233,067

CENTURY OIL & GAS CORPORATION
Drilling Report

CENTURY VICKERS #6-15
Roosevelt Co., MT (N.W. Poplar)
Prop. TD: 6500'
COG Int.: 22.96875%

07/05/81 Depth 6438' (made 26' in 1½ hours, day 12). Current operations: Finishing DST #2. MW 10.4, vis 39, WL 9, Ph 7.
WOB 40,000#, RPM 65, PP 800 psi, SPM 64
DST #2 6416-6438'
Times: 10-60-180-240
Recovery: 30' SWCM, 0.1 bbls.
180' SMCSW, 0.9 bbls.
Sample: no gas, 2400 cc SW
Pressures: inside at 6401'; IH 3495, IF 0-0, ISI 2670, FF 60-108, FSI 2621
outside at 6424'; IH 3555, IF 57-69, ISI 2721, FH 3555, FF 69-194, FSI 2621
Water sample: 0.04 at 60°F 200,000 ppm $Cl^-$
Mud filtrate: 0.04 at 60°F 200,000 ppm $Cl^-$
Pipe water : 0.04 at 60°F 200,000 ppm $Cl^-$
BHT 184°F
DWC - $13,514 CTD - $246,581

07/06/81 Depth 6500' (made 62' in 6 hours, day 13). Current operations: Logging. MW 10.4, vis 39, WL 9, Ph 7.
WOB 40,000#, RPM 60, PP 800 psi, SPM 64
Bit #5 made 329' in 32¼ hours (condition 6-7-I)
DWC - $13,559 CTD - $260,140.

07/07/81 Depth 6500' (made 0', day 14). Current operations: Waiting on casing and circulating. Ran DLL/Micro SFL/GR from 6504-420', FDC/CNL/GR from 6501-5000', 3850-3650', and 1450-1250'. Decision was made to run casing.
DWC - $25,100 CTD - $285,240

07/08/81 Day 15. Ran casing to 6499' at 1:30 pm. WO Halliburton for 5 hours. PD at 8:30 am. Rig will be released at 7:00 pm 7/8/81. Details on casing and cement will follow.
DWC - $92,900 (includes casing), CTD - $378,140.

07/08/81 (Cont.) Ran 174 joints of 5½" 17# J-55 and 15.5# K-55 LTC. Halliburton super seal float shoe and float collar. Casing landed at 6508' KB (tagged at 6510'). Float collar at 6408'. Pumped 1000 gallons mud flush and 50 sacks poz, 10 bbls salt water. Cemented with 370 sacks Halliburton salt saturated light 0.6% Halad 9, followed by 200 sacks G 18% salt and 0.75% CFR-2. Mixed and pumped at 6 BPM. Displaced with 153 bbls fresh water. (Slowed to 3 BPM at 133 bbls.) Ran top plug only. Caught cement with 73 bbls displacement. Pressure increased steadily to 1600 psi. Bumped plug to 2100 psi at 8:08 am 7/8/81. Released pressure and float held. Full circulation throughout. Centralizers: 1 in shoe joint and spaced out over bottom, 25 joints (15 centralizers total) also 10 centralizers ran across Dakota.

07/10/81 Writing completion prognosis. Waiting on rig.

CENTURY OIL & GAS CORPORATION
Drilling Report

CENTURY VICKERS #6-15
Roosevelt Co., MT (N.W. Poplar)
TD: 6500'

07/21/81 Current operations: POOH with tubing and bit.
WO National Supply until 10:00 am. Welded on 5½" bell nipple. Location too wet to spot rig. Waited until noon before RU. Removed crossover flange from 8-5/8" surface casing. Assembled 8-5/8" x 5½" packoff. NU tubing head, RU tubing tools. PU 4-3/4" WO Hughes bit casing scraper crossover to 2-3/8". PU 204 joints tubing and dropped tubing. PU 13 more joints and tagged fish at calculated PBTD at 6453'. Screwed into fish. POOH 48 stands. SD at 9:00 pm.

07/22/81 Current operations: TIH with packer.
POOH with bit and scraper. NU BOPE and RU Go Wireline. Computer truck panel broke. Ordered new truck from Williston. RIH with corkscrewed tubing, laid down 42 jts. Spotted replacement truck. RIH with CBL/CCL/GR, cablehead shorted out. POOH to rehead. Ran CBL/CCL/GR. PBTD to 5500' and 4200-3000', loggers PBTD 6450'. Top of cement at 3110'. Fair to good bond through out. Pressured to 700 psi and improved slightly. Logged to 5500'. Ran 4" hollow carrier gun loaded with 23 gram DML jets. Perfed 6422-26' and 6429-33', 1 HPF with 10 holes, no indications of fluid entry. POOH. PU Baker Model E Retrieveamatic packer with pump seat nipple. RIH with 48 joints. SD at 7:00 pm.
DCC - $8,868, CCC - $37,608
Tubing and other equipment (most of tubing transferred from Cox 7-1) $26,000±

07/23/81 Current operations: Preparing to recover swab fish.
RIH with packer. Set at 6362'. RU Halliburton, pressure tested annulus. BOPE would not hold. WO BOPE rams 3 hours. Installed new rams, pressure tested to 1000 psi - ok. Swabbed tubing dry to seating nipple - no fluid entry. Acidized with 1000 gallons 15% MCA with 0.4% HAI-75 and 14 RCN balls 1.1 specific gravity. Pumped 4 bbls acid ahead of balls then 1 ball every 1½ bbls, 24½ bbls to fill tubing. Initial rate ¼ BPM at 3600 psi. Pressure dropped. Sped up to 3 BPM at 3600 psi at 26 bbls pumped. Broke back to 3 BPM at 2200 psi at 28 bbls. Balled out with 20 bbls water displacement. Surged balls off perforations and completed flush at 3 BPM at 2200 psi. Total load 50 bbls (24 bbls acid, 26 bbls water displacement). ISIP 1200, 5 min 1175, 15 min 1110. Let acid soak 30 minutes. Flowed to tank 45 minutes (5 bbls water). Tore out Halliburton. Made 2 swab runs. 2nd run from 5500'. Ran into lubricator. Pulled out of rope socket. Left swab in tubing. Total recovery 26 bbls. Last fluid - spent acid. RD lubricator. Cut and restrung sand line. Poured new rope socket. SD at 7:00 pm. DC - $4,560, CCC - $42,168.

CENTURY OIL & GAS CORPORATION
Drilling Report

CENTURY VICKERS #6-15
Roosevelt Co., MT (N.W. Poplar)
TD: 6500'

07/24/81 Current operations: swabbing.
WO swabbing tools for 2 hours. Made up swab, started swabbing at 10:30. Found fluid at 900'±. Made 10 swab runs in 5 hours. Recovered 53 bbls partly unspent acid and acid water, no trace of oil. Average rate 10 BPH, fluid level about 1000' above packer between runs. Fishing tools arrived at 3:30 pm. Made up fish tools with 1-3/8" grapple. Engaged fish on first run - lost on way out. Unable to engage fish on 2nd try. Made swab run, recovered 7 BW, with trace oil and BS. Re-ran fish tool with 1-3/8" slips. Engaged fish - lost on way out. Re-ran fish tools and recovered fish. SD at 7:00 pm. Total fluid recovered on day 60 bbls, to date 86 bbls, load 50, recovered 36 bbls over load. DC - $1,100, CCC - $43,268.

07/25/81 Crew arrived at 9:00 am, operator arrived at 11:00 am 7/24/81. Found fluid level at 1000', very little pressure on well. Swabbed well to nipple in 4 runs, recovered 30 bbls in 1 hour. Swabbed 10:30 am to 8:00 pm. Made 27 more runs. Recovered additional 60 BW. Oil cut 3% to 5%, last run 3%. Average swab rate 6.3 BPH. Daily recovery 90 bbls, total recovery 176 bbls, 126 bbls over load. Daily cost - $1,650, CCC - $44,918.

07/26/81 50± psi on tubing - blew down. Started swabbing at 8:00 am 7/25/81. Initial fluid level at 3500'. Made 15 swab runs, recovered 33 bbls fluid, water with 2% to 3% oil. Now 159 bbls over load. Released packer and POOH SD at 3:00 pm. Plan to run retainer and squeeze before perforating McGowan. Daily cost - $2,540, CCC - $47,458.

07/27/81 RU Go Wireline. RIH with Baker K-1 cement retainer. Set retainer at 6418.5' (top). RIH with stinger on tubing. Tagged retainer at 6418'. Stung into retainer and pressure tested annulus to 1000 psi. RU Halliburton. Breakdown rate 2.2 BPM at 1700 psi. Pumped 50 sacks class G with 0.6% Halad 9 at 2.2 BPM at 1700 psi. Displaced cement with 24 bbls fresh water as follows: at 15 bbls reduced rate to 1 BPM, at 23 bbls staged in 8 stages - final pressure 2200 psi and held. PO of retainer and reversed out tubing with 35 bbls fresh water. Got 2 bbls cement. POOH with tubing and stinger. SD at 3:00 pm.
Daily cost - $6,445, CCC - $53,903.