

**CONFIDENTIAL**

REPORT FOR

CANDEL OIL LTD.

on

CHUTE CREEK

COAL LICENCE NUMBERS

6494	6505
6495	6506
6496	6507
6497	6508
6498	6509
6499	6510
6500	6511
6501	6512
6502	6513
6503	6514
6504	6515

**OPEN FILE**

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

by  
M. Cholach, P. Geol., P. Eng.  
Springfield Consulting Ltd.  
12 Avenue Close  
Red Deer, Alberta

**00 043**

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CONCLUSIONS AND RECOMMENDATIONS

The June 1981 exploration program on the Chute Creek coal licences has defined some marginal coal seams in a basin-type structure. A minimum of four additional holes is needed to complete the exploration at Chute Creek. The drilling should be done with an air-water combination rotary drilling rig to overcome and control ground-water problems.

Part of the Chute Creek coal licences should be surrendered. The present acreage is 12,292 acres, or 4,974 hectares, which should be reduced to 8,563 acres, or 3,465 hectares. The total exploration expenses applicable to the remaining licences is \$72,300.12.

LOCATION AND ACCESS

The Chute Creek Coal licences are located about 12 miles, or 19 km, west of Oyster Bay (Fig. 1). The coal licences are centered near 49° 47' north latitude and 125° 25' west longitude. The area is accessible by existing logging roads.

LISTING OF COAL LICENCES

Work was performed on Coal Licence numbers 6497, 6502, 6503, 6504 and 6507 (Fig. 2). Table 1 shows a complete listing of the Chute Creek Coal Licences. Table 2 is a listing of the Coal Licences which should be grouped, and Table 3 is a listing of Coal Licences which should be surrendered.

TABLE 1: Listing of Chute Creek Coal Licences

<u>Licence No.</u>	<u>Acres</u>	<u>Hectares</u>
6494	482	195
6495	650	263
6496	640	259
6497	568	230
6498	507	205
6499	561	227
6500	497	201
6501	561	227
6502	655	265
6503	610	247
6504	610	247
6505	652	264
6506	652	264
6507	586	237
6508	482	195
6509	361	146
6510	633	256
6511	635	257
6512	635	257
6513	492	199
6514	492	199
6515	<u>331</u>	<u>134</u>
	<u>12,292</u>	<u>4,974</u>

TABLE 2: Listing of Coal Licences to be Grouped

<u>Licence No.</u>	<u>Acres</u>	<u>Hectares</u>
6494	482	195
6495	650	263
6496	640	259
6497	568	230
6498	507	205
6499	561	227
6500	497	201
6501	561	227
6502	655	265
6503	610	247
6504	610	247
6506	652	264
6507	586	237
6513	492	199
6514	<u>492</u>	<u>199</u>
	<u>8,563</u>	<u>3,465</u>

TABLE 3: Listing of Coal Licences to be Surrendered

<u>Licence No.</u>	<u>Acres</u>	<u>Hectares</u>
6505	652	264
6508	482	195
6509	361	146
6510	633	256
6511	635	257
6512	635	257
6515	<u>331</u>	<u>134</u>
	<u>3,729</u>	<u>1,509</u>

DESCRIPTION OF WORK PROGRAM

Coal Licence numbers 6494 to 6515 inclusive, are held by CanDel Oil Ltd. The licences were explored by CanDel from June 5 to 13, 1981 inclusive.

A Chicago Pneumatic air rotary drilling rig was used. Additional support equipment consisted of one flat bed truck for pipe and equipment handling, and two 4 X 4 pickups for crew transportation.

The holes were geophysically logged using gamma ray, sidewall densilog, caliper and focused resistivity logs.

The drilling program was carried out on a double shift basis and was supervised by the writer.

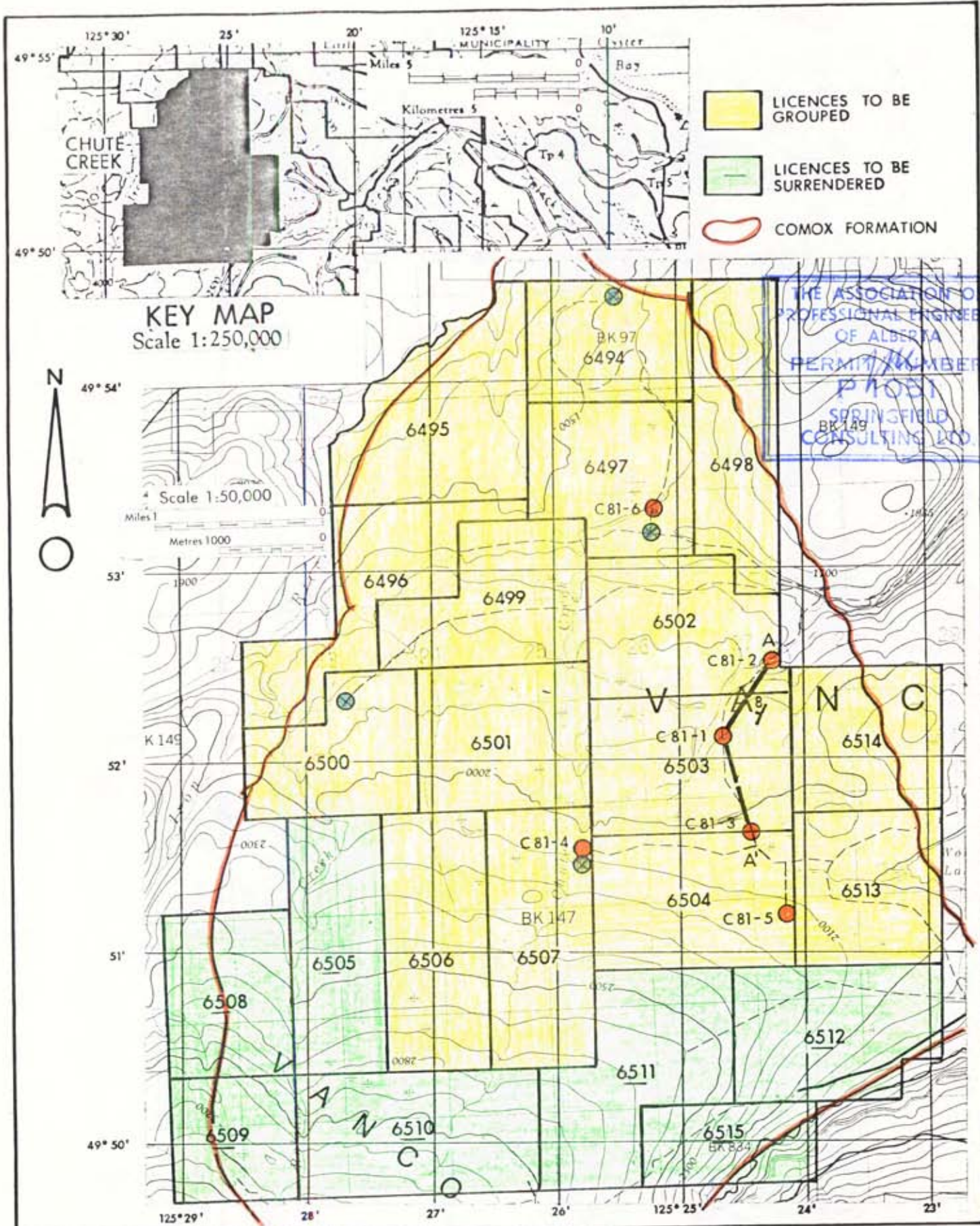
GEOLOGY

The Chute Creek coal licences are bordered, or in contact with; to the east, south and west by igneous rocks of Jurassic and Triassic ages (Fig. 1). A northwest-southeast striking fault terminates the sedimentary rocks on the east. Chute Creek lies in the central portion of the sedimentary rock basin. The sedimentary rocks are of the Naniamo Group, and they are of Cretaceous and possibly Upper Cretaceous ages.

The Triassic and Upper Triassic rocks of the Vancouver Group occur along the eastern, southern and western boundaries of the Chute Creek coal licences. These rocks consist of massive, fine to medium grained porphyritic greenish-grey hornblende andesite. Blocks of sedimentary rocks continue to the north of the coal licences through Quinsam Lake and Beavertail Lake.

The Cretaceous sedimentary rocks consist of Units 9 and 10 (Naniamo Group). Unit 9 is a massive basal boulder conglomerate which outcrops along the southern part of the coal licences. Unit 10, or the Comox Formation, is composed of massive coarse to medium-grained sandstones, thin conglomerate lenses, carbonaceous shales and coal seams.





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PERMIT NUMBER  
P 9051  
SPRINGFIELD  
CONSULTING LTD.

**CANDEL OIL LTD.**

CALGARY ALBERTA

REVISED

**CHUTE CREEK EXPLORATION PROGRAM**

92 F / 14

INTERPRETATION BY: M. CHOLACH

DRAWN BY: C.B.J.

DATE JULY 81

CHECKED BY:

DATE

PROPOSED DRILL SITE

DRILL SITE C 81-1

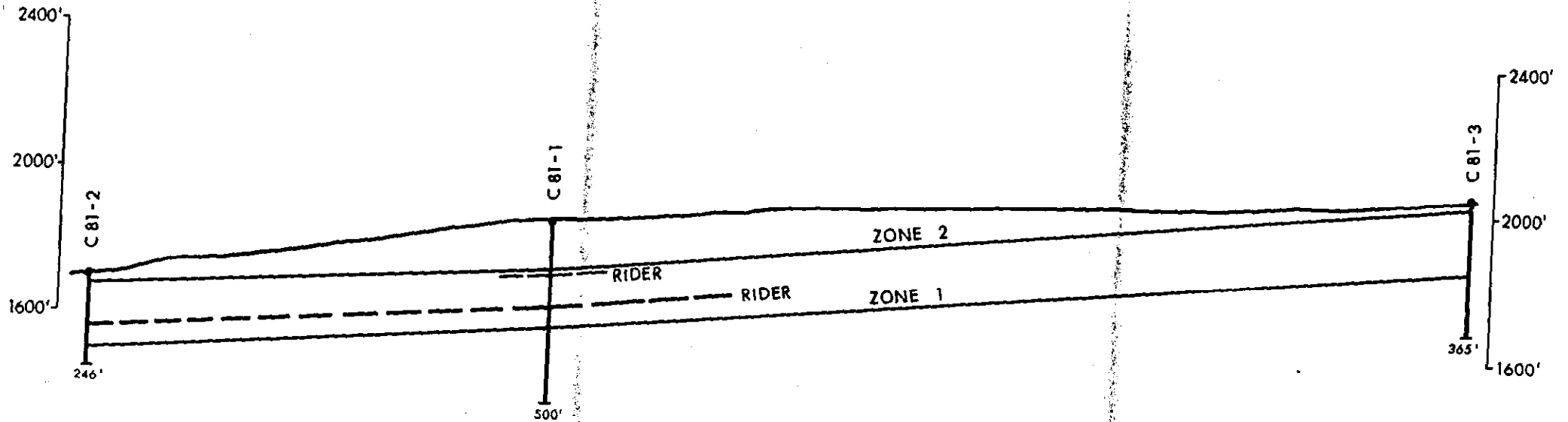
EXISTING ROAD

6505 COAL LEASE NUMBER

SCALE: 1:50,000

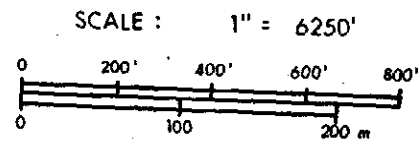
FIG. 2

JUNE 1981



THE ASSOCIATION OF  
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 OF ALBERTA  
 PERMIT NUMBER  
 P 1058  
 S.N.L. LTD.  
 CONSULTING LTD.

CANDEL OIL LTD.  
 CHUTE CREEK  
 CROSS SECTION A-A'



JUNE 1981

BY M. CHOLACH

FIG. 3

EXPLORATION PROGRAM

A total of six holes were drilled on the Chute Creek coal licences (Fig. 2). Coal was intersected in holes C 81-1, C 81-2, C 81-3 and C 81-6. No coal was intersected in holes C 81-4 and C 81-5. Hole number C 81-4 was not drilled deep enough. Cross-section A-A' (Fig. 3), shows that there are two main coal zones. The upper coal zone is clean and ranges in thickness from 0.5 m to 0.8 m. The lower coal zone ranges in thickness from 1.3 m to 2.3 m, however, about one-third of the second zone is composed of shale.

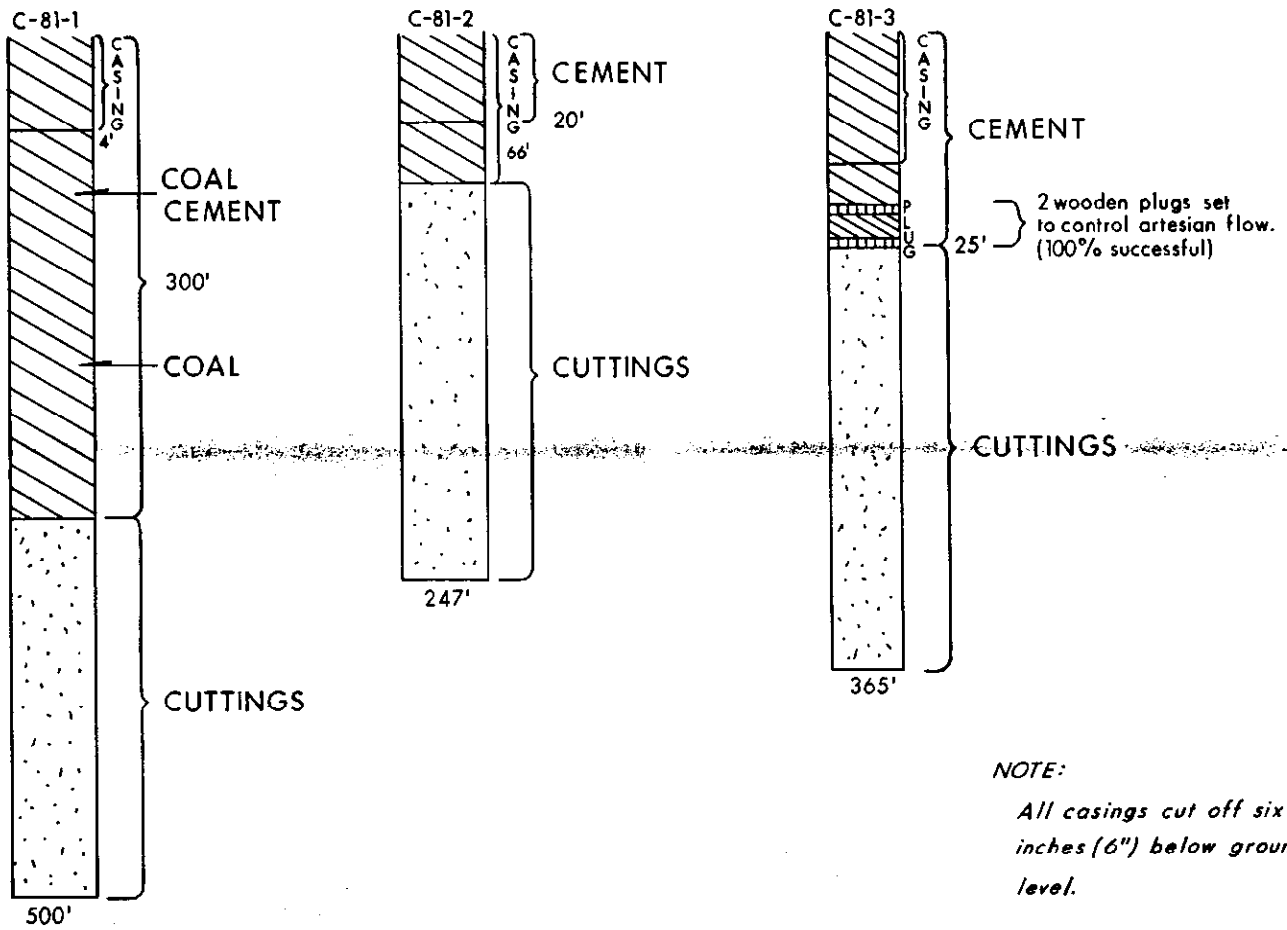
A minimum of four additional holes should be drilled on the Chute Creek coal licences, as shown on Fig. 2. These holes should be drilled with a combination air-water rotary drilling rig. The drilling rig which was used for the June 1981 exploration program, was equipped only for air drilling and could not efficiently handle ground water beyond depths of about 100 m.

If the additional drilling program does not define thicker and cleaner coal zones, the coal licences should be surrendered.

RECLAMATION PROGRAM

All of the drill holes were partially filled with cuttings and then cemented to the surface, as shown in Fig. 4. The holes were drilled on existing roads and surface disturbance was minimal.

# CHUTE



NOTE:

All casings cut off six inches (6") below ground level.

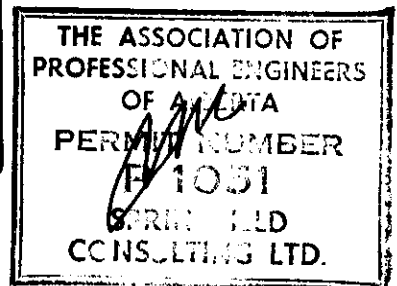
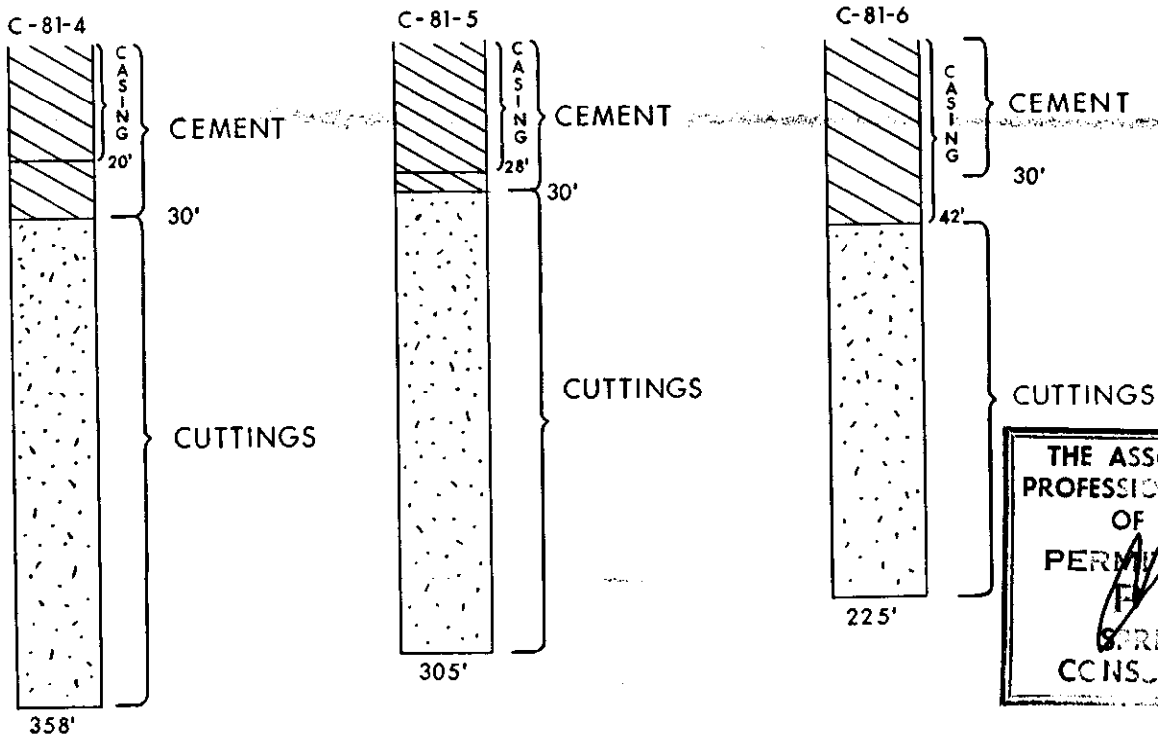


FIG. 4: DRILL-HOLE ABANDONMENT DATA

(All Dimensions in Feet)

EXPENDITURES

A listing of the expenditures for the Chute Creek project is shown in Table 4.

TABLE 4: Listing of Expenditures

<u>Contractor</u>	<u>Expenses</u>
Ken's Drilling Ltd.	\$29,913.15
Marcourt Enterprises Corp.	6,714.84
Roke Oil Enterprises	20,457.16
Springfield Consulting	12,729.65
Miscellaneous	<u>2,485.32</u>
TOTAL	\$72,300.12

REFERENCES

- MULLER, J.E.: G.S.C. Paper 17-1968  
MULLER, J.E.: G.S.C. Paper 68-50

CERTIFICATION

This will certify:

1. That I am a graduate of the University of Alberta, B.Sc. 1967 and M.Sc. in geology 1969.
2. Since my graduation I have continuously practised my profession in mining and exploration geology.
3. I am a member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta as a Professional Geologist.
4. I am a member of the Association of Professional Engineers for the Yukon Territory as a Professional Engineer.
5. That I was employed by Tobe Mines Ltd. from May 1967 to December 1968 as a geologist at Uranium City.
6. That I was employed by Connaught Mines Ltd. from May 1969 to June 1970 as Resident Geologist in mineral exploration.
7. That I was employed by the Consolidation Coal Company as project geologist from July 1970 to July 1971; and as Manager of Canadian Exploration from August 1971 to December 1974.
8. That I have been a Consulting Geologist since January 1975 to the present.

Respectfully submitted,



M.S. Cholach, P. Geol., P. Eng.



APPENDIX A

Drill Hole Summary sheets for:

C 81-1

C 81-2

C 81-2

C 81-3

C 81-4

C 81-5

C 81-6











Project Chute Year June 11, 1981

**DRILL HOLE SUMMARY SHEET**

Page 1 of 1

Hole Number	Incl. (deg)	Azimuth (degree)	Coordinates		Collar Elevation	Total Depth	Electric Log				Drill Log	Over-burden Depth	Water Table Depth	Seam Data				Bottom of Hole	Elevations		Rig Fluid				Comments		
			North South	East West			Nat. Gant	Dens sily	Resis tivity	Date				Depth	No.	Depth Top	Depth Bottom		Thickness	Samples cons	Seam top	Seam bottom	at	dis		lit	str
C 81-6						68.6								30.3	30.8	0.5	(?)										Coal
							(Hole	caved	-	logged	through	drill	pipe	to	34.5 m)												
														44.5	49.7	5.2											Shale with coal lenses (Driller's log)

APPENDIX C

Geophysical logs for:

C 81-1

C 81-2

C 81-3

C 81-4

C 81-5

C 81-6

NOTE: Gamma log is one metre higher  
than the Density log.



APPENDIX B

Driller's logs for:

C 81-1

C 81-2

C 81-3

C 81-4

C 81-5

C 81-5

DRILLER'S LOG

PROJECT: Chute      HOLE NO.: C 81-1      DATE: June 5, 1981

<u>From</u>	<u>To</u>	<u>Thickness</u>	<u>Description</u>
0	0.6	0.6	Overburden
0.6	0.9	0.3	Coal -
0.9	7.0	6.1	Shale
7.0	7.1	0.1	Coal -
7.1	7.9	0.8	Shale
7.9	11.1	3.2	Coal -
11.1	17.7	6.6	Sandstone
17.7	18.1	0.4	Coal -
18.1	22.3	4.2	Shale
22.3	22.6	0.3	Shaly Coal
22.6	38.4	15.8	Sandstone
38.4	39.0	0.6	Carbonaceous Shale
39.0	39.9	0.9	Shale
39.9	40.2	0.3	Coal -
40.2	40.5	0.3	Shale
40.5	40.8	0.3	Coal -
40.8	50.3	9.5	Sandstone
50.3	53.1	2.8	Shale
53.1	54.0	0.9	Shale with coal lenses
54.0	60.6	6.6	Sandstone
60.6	63.1	2.5	Shale
63.1	64.6	1.5	Sandstone
64.6	72.6	8.0	Shale
72.6	74.4	1.8	Carbonaceous Shale
74.4	93.6	19.2	Shale
93.6	153.0	59.4	Sandstone

T.D. 153.0 m

DRILLER'S LOG

PROJECT: Chute      HOLE NO.: C 81-2      DATE: June 6, 1981

<u>From</u>	<u>To</u>	<u>Thickness</u>	<u>Description</u>
0	18.3	18.3	Overburden
18.3	24.7	6.4	Shale
24.7	25.0	0.3	Coal
25.0	29.0	4.0	Shale
29.0	29.3	0.3	Coal
29.3	30.5	1.2	Sandstone
30.5	63.1	32.6	Shale and Sandstone
63.1	75.3	12.2	Sandstone

T.D. 75.3 m

DRILLER'S LOG

PROJECT: Chute HOLE NO.: C 81-3 DATE: June 8, 1981

<u>From</u>	<u>To</u>	<u>Thickness</u>	<u>Description</u>
0	0.9	0.9	Overburden
0.9	1.8	0.9	Clay
1.8	3.1	1.3	Sandstone
3.1	6.4	3.3	Shale
6.4	7.3	0.9	Sandstone
7.3	11.3	4.0	Shale
11.3	11.9	0.6	Sandstone
11.9	17.1	5.2	Shale
17.1	17.4	0.3	Sandstone
17.4	28.4	11.0	Shale
28.4	29.3	0.9	Sandstone
29.3	29.9	0.6	Shale
29.9	30.2	0.3	Carbonaceous Shale and Coal
30.2	30.5	0.3	Sandstone
30.5	32.3	1.8	Sandstone
32.3	33.8	1.5	Shale
33.8	34.2	0.4	Carbonaceous Shale and Coal
34.2	36.6	2.4	Shale
36.6	37.2	0.6	Carbonaceous Shale and Coal
37.2	41.5	4.3	Shale
41.5	43.0	1.5	Carbonaceous Shale and Coal
43.0	44.8	1.8	Shale
44.8	47.9	3.1	Sandstone
47.9	54.5	6.6	Shale
54.5	56.7	2.2	Shale and Coal
56.7	61.9	5.2	Shale

T.D. 61.9 m

DRILLER'S LOG

PROJECT: Chute

HOLE NO.: C 81-4

DATE: June 9, 1981

<u>From</u>	<u>To</u>	<u>Thickness</u>	<u>Description</u>
0	0.9	0.9	Overburden
0.9	3.4	2.5	Shale
3.4	4.3	0.9	Carbonaceous Shale
4.3	9.2	4.9	Shale
9.2	33.2	24.0	Sandstone
33.2	38.7	5.5	Shale and Sandstone
38.7	51.8	13.1	Sandstone
51.8	53.1	1.3	Conglomerate
53.1	55.8	2.7	Sandstone
55.8	57.0	1.2	Sandstone and Shale
57.0	109.2	52.2	Sandstone

T.D. 109.2 m

DRILLER'S LOG

PROJECT: Chute

HOLE NO.: C 81-5

DATE: June 9, 1981

<u>From</u>	<u>To</u>	<u>Thickness</u>	<u>Description</u>
0	7.6	7.6	Overburden
7.6	11.9	4.3	Shale and Sandstone
11.9	15.9	4.0	Sandstone
15.9	31.7	15.8	Shale and Sandstone
31.7	47.0	15.3	Sandstone
47.0	47.3	0.3	Shale
47.3	48.5	1.2	Sandstone
48.5	49.4	0.9	Shale
49.9	50.3	0.4	Conglomerate
50.3	50.9	0.6	Sandstone
50.9	51.5	0.6	Shale and Sandstone
51.5	93.0	41.5	Sandstone

T.D. 93.0 m

DRILLER'S LOG

PROJECT: Chute HOLE NO.: C 81-6 DATE: June 11, 1981

<u>From</u>	<u>To</u>	<u>Thickness</u>	<u>Description</u>
0	9.2	9.2	Overburden
9.2	12.8	3.6	Shale
12.8	18.3	5.5	Sandstone
18.3	18.6	0.3	Shale
18.6	28.7	10.1	Sandstone
28.7	29.0	0.3	Coal
29.0	36.3	7.3	Shale
36.3	36.4	0.1	Coal
36.4	44.5	8.1	Shale
44.5	49.7	5.2	Shale with Coal lenses
49.7	52.7	3.0	Shale
52.7	68.6	15.9	Sandstone

T.D. 68.6 m

CX - Chuck Geck 8(31) 10 81-6

# ROKE

GAMMA RAY - LOG

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO. COMPANY CANDEL OIL LTD.

THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF ALBERTA

LSD SEC TWP RGE W. WELL C - 81 - 6 LOCATION VANCOUVER ISLAND

PERMIT NUMBER P 1001 SPRINGFIELD CONSULTING LTD.

PROVINCE BRITISH COLUMBIA

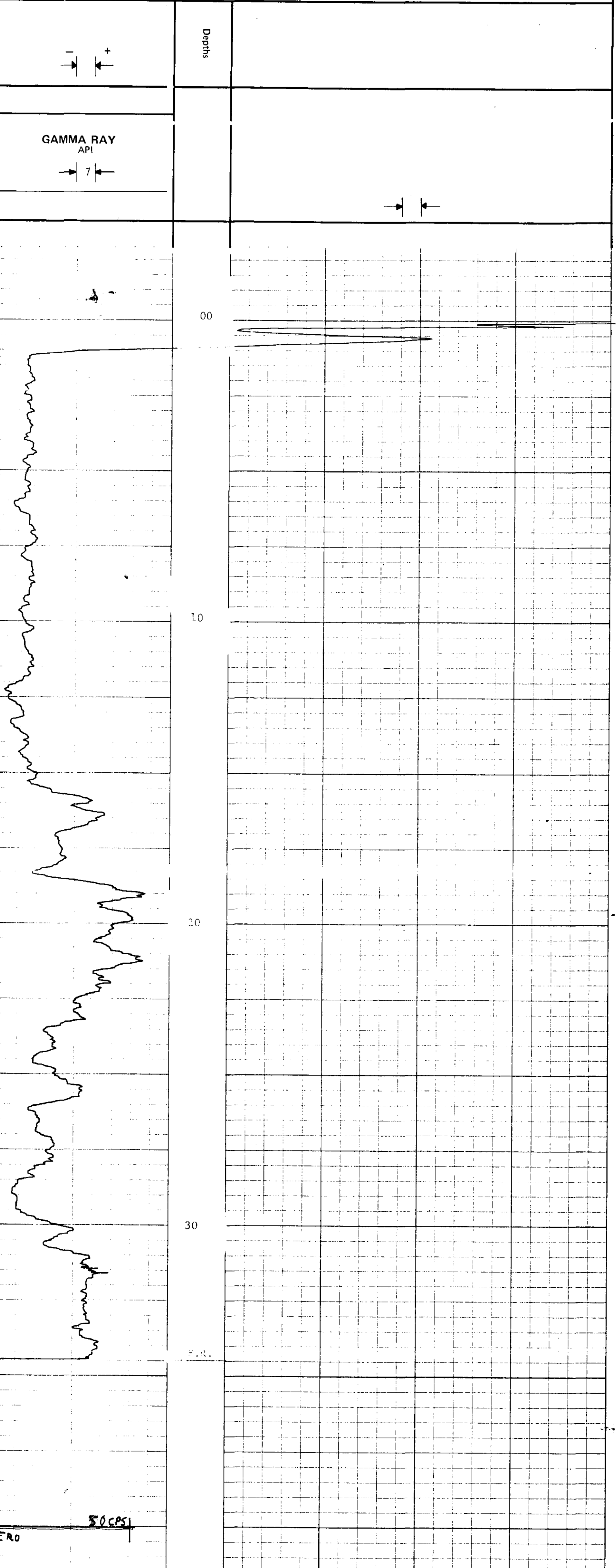
Permanent Datum GROUND LEVEL ELEV. Above Perm. Datum Log Measured from GROUND LEVEL Well Depths Measured from GROUND LEVEL

K.B. CGG G.L. METRIC

Run. No.	ONE
Date	12 JUNE 1981
First Reading	34.5 m
Last Reading	0 m
Footage Logged	34.5 m
Depth Reached	34.5 m
Depth Driller	43.6 m
Casing Roke	13.0 m
Casing Driller	13.0 m
Fluid Type	AIR
Liquid Level	
Min. Diam.	15 cm
Rm @ 0F	
Operating Time	1 HOUR
Truck No.	106

Recorded By WILSON Witnessed By CHIOLACH

Remarks LOGGED THROUGH DRILL STEM GRN TOOL #125A004  
 CAVED IN HOLE.



71



# ROKE

FOCUSED BEAM LOG 5 CM

OIL ENTERPRISES LTD. CALGARY, ALBERTA

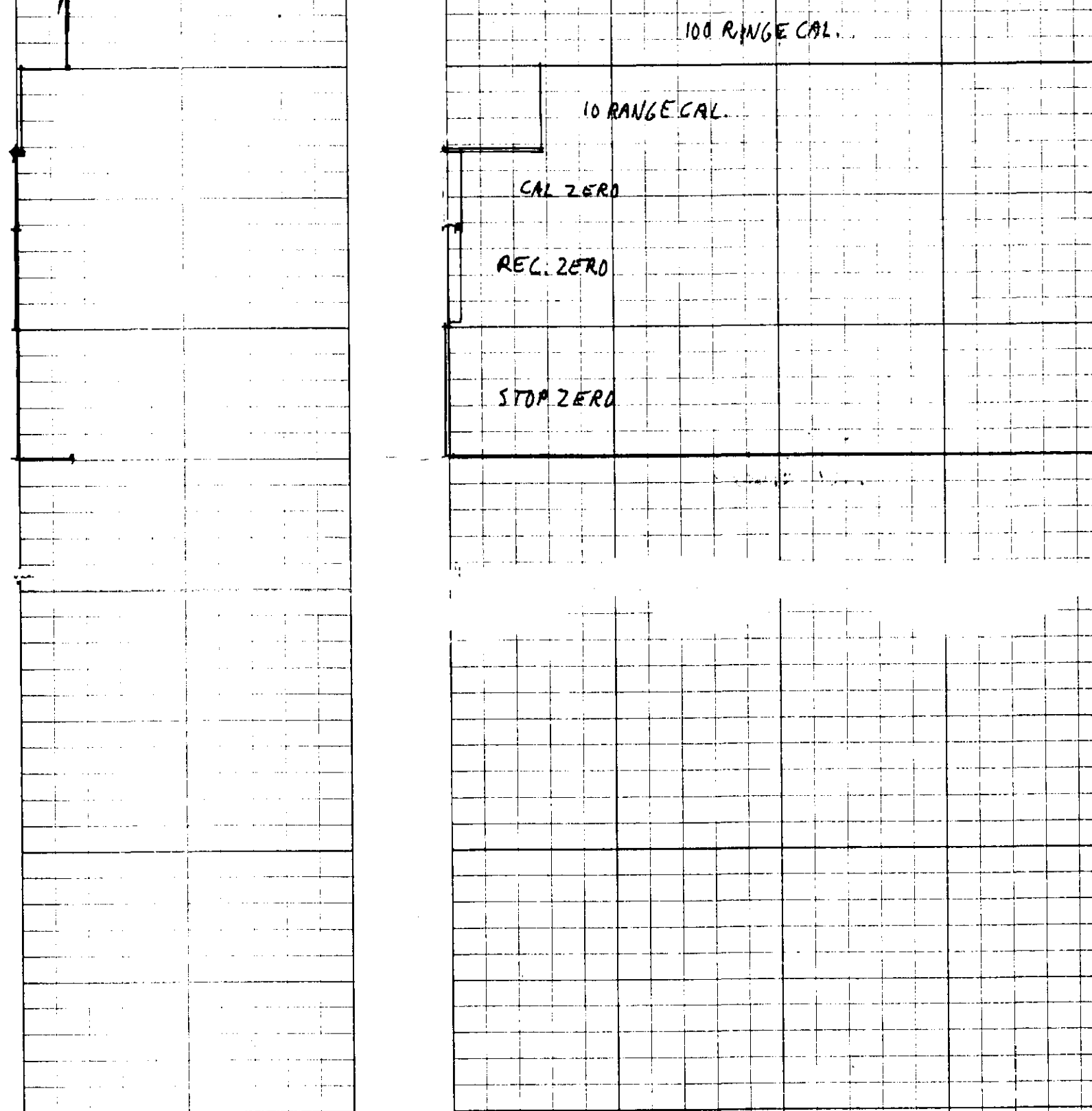
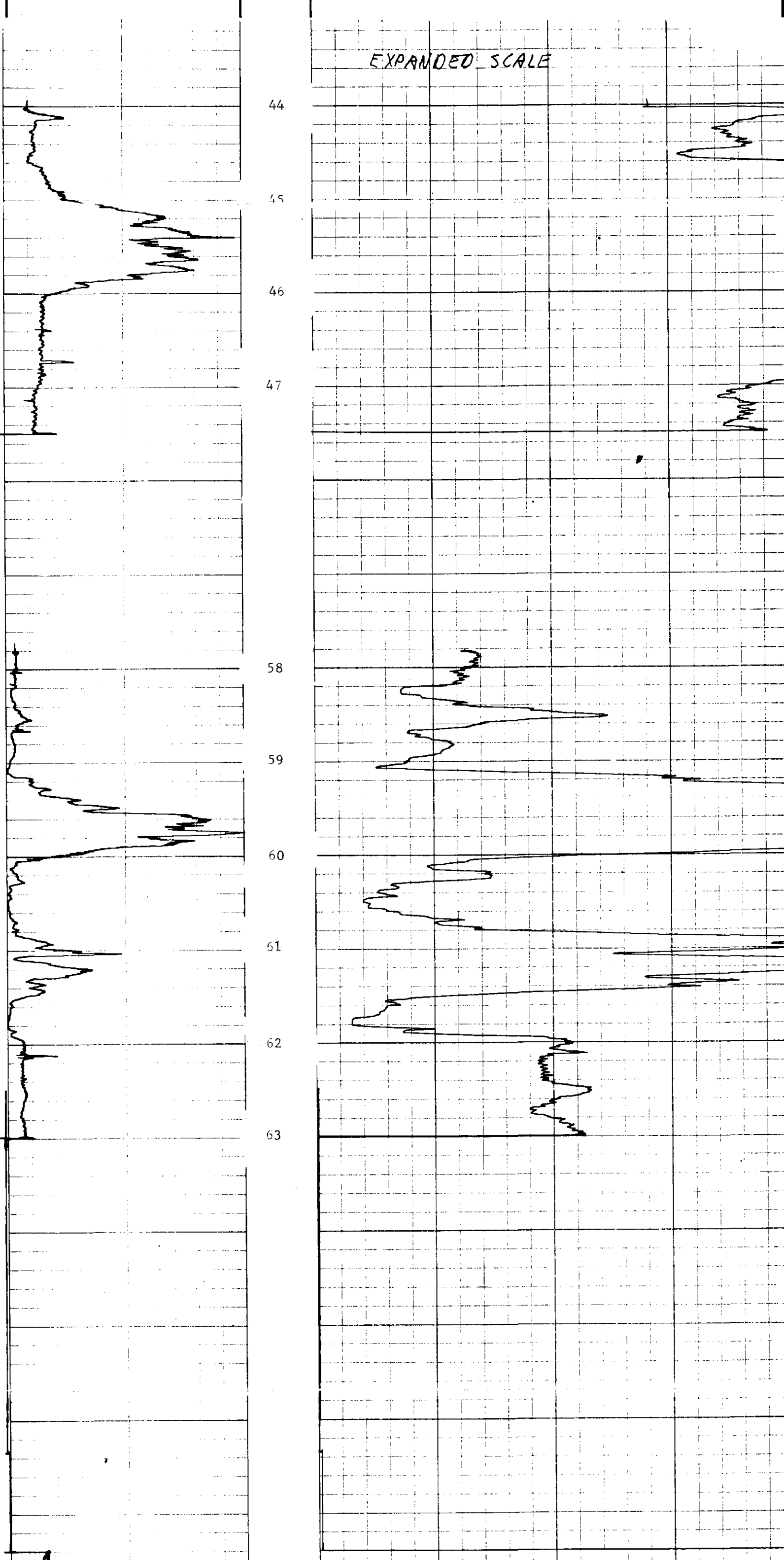
THE ASSOCIATION OF PROFESSIONAL ENGINEERS

PERMIT NUMBER  
111051  
SPECTRUM CONSULTING LTD.

FILE NO.	COMPANY	CANDEL OIL LTD.
LSD SEC TYPE	WELL	C - 81 - 3
RGE	LOCATION	VANCOUVER ISLAND
M	FIELD	CHUTE
	PROVINCE	BRITISH COLUMBIA
Permanent Datum	GROUND LEVEL	Elm.
Log Measured from	GROUND LEVEL	Above Perm. Datum
Well Depths Measured from	GROUND LEVEL	G.L.
		METER IC
Run No.	ONE	TWO
Date	9 JUNE 1981	
First Reading	65.0 m	47.0 m
Last Reading	58.0 m	44.0 m
Footage Logged	7.0 m	3.0 m
Depth Reached	109.7	109.7
Depth Driller	109.7	109.7
Casing Roke	4.2	4.2
Casing Driller	4.6 m	4.6m
Fluid Type	WATER	WATER
Liquid Level		
Min. Diam.	14.8 cm	14.8 cm
Rm @ °C	32.1m @ 8°C	
Operating Time	1/2 HOUR	
Truck No.	106	
Recorded By	WILSON	Witnessed By
		CHOLACH

Remarks FBL # 10 CURRENT RANGE LOW MUDFISH RESISTANCE 850 OHMS  
 ELECTRODE SONDE 5 CM BEAM WIDTH 68 CM ARRAY  
 PRIMARY 10 OHM/DIV SECONDARY 100 OHM/DIV

RESISTIVITY (OHM-METERS)	Depths	RESISTIVITY (OHM-METERS)
PRIMARY SCALE		0 100 200
SECONDARY SCALE		1300 2300 3300



# ROKE

GAMMA RAY  
SIDEWALL DENSILOG  
CALIPER

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO. \_\_\_\_\_ COMPANY \_\_\_\_\_ GAMBEL OIL LTD. THE ASSOCIATION OF  
 LOGS S&P \_\_\_\_\_ WELL \_\_\_\_\_ C - 81 - 2 \_\_\_\_\_ PROFESSIONAL LOGGERS  
 R/OE \_\_\_\_\_ LOCATION VANCOUVER ISLAND \_\_\_\_\_ PERMITS CENTRAL  
 W \_\_\_\_\_ FIELD \_\_\_\_\_ CURTIS \_\_\_\_\_ C.S.L. LTD.  
 PROVINCE BRITISH COLUMBIA Other Services \_\_\_\_\_

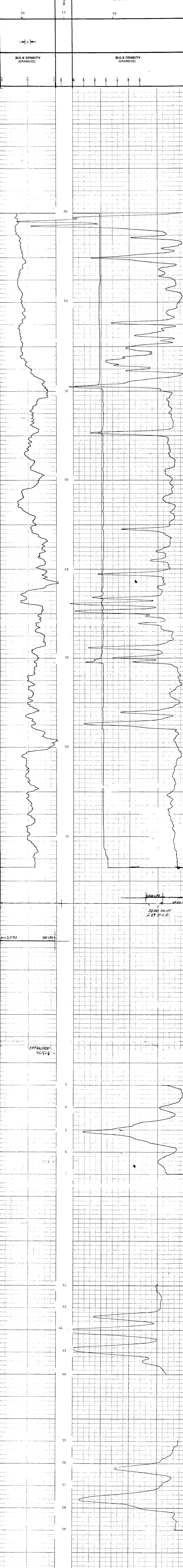
Permanent Datum \_\_\_\_\_ GROUND LEVEL \_\_\_\_\_ ELEV \_\_\_\_\_ K.R. \_\_\_\_\_  
 Log Measured from \_\_\_\_\_ GROUND LEVEL \_\_\_\_\_ Above Perm. Datum \_\_\_\_\_ C.S.G. \_\_\_\_\_  
 Well Depth Measured from \_\_\_\_\_ GROUND LEVEL \_\_\_\_\_ METRIC \_\_\_\_\_

Run No. \_\_\_\_\_ ONE \_\_\_\_\_  
 Date 8 JUNE 1981  
 East Reading 73.5 m  
 East Reading 0  
 Fridge Logged 73.5 m  
 Depth Reached 73.6  
 Depth Driller 73.3

Casing Bore 19.5  
 Casing Driller 20 m  
 Fluid Type AIR/WATER  
 Liquid Level 19.0 m  
 Min. Diam. 14.9 cm  
 Operating Time \_\_\_\_\_  
 Tube No. 106  
 Recorded By: WILSON  
 Witnessed By: CHOLACH

RUN NO.	GENERAL			T.C. SEC.	GAMMA RAY			API G.R. UNITS PER LOG DIV.	SIDEWALL DENSILOG		
	FROM	TO	SPEED M/ MIN		SENS SETTINGS	ZERO DIV. L OR R	T.C. SEC.		SENS SETTINGS	ZERO DIV. L OR R	CPS/ DIV
ONE	0.0	73.5	8	3	500	OL	9 API	0.5	5000	2.89 R	139.45
REP.	0.0	73.5	8		CALIPER						
REF.	42.0	46.0	4								
	3.0	7.0	4								

REMARKS



EXPANDED 5C/LG  
 ZERO  
 ZERO SHIFT 2.89 DIV. R.  
 1000 CPS  
 ZERO  
 100 CPS  
 ZERO

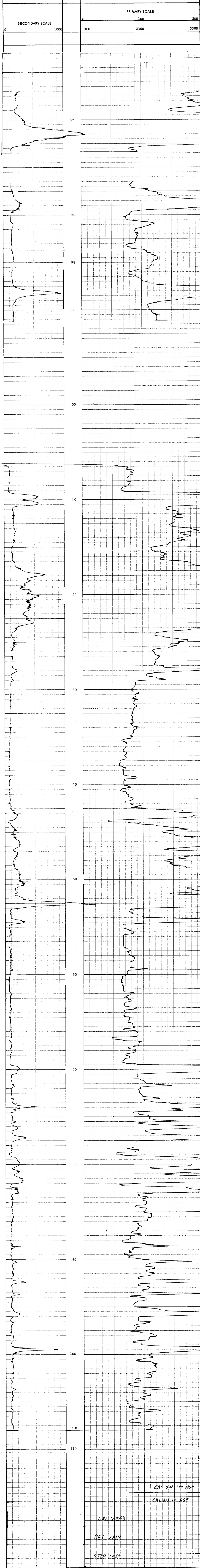
# ROKE

FOCUSED BEAM LOG 20 CM

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	GANDEL OIL LTD	THE ASSOCIATED
L.S.D.	WELL	C - 81 - 4	PROFESSOR
SIZE	LOCATION	VANCOUVER ISLAND	OF
PIPE	FIELD	CHUTE	VANCOUVER
IN	PROVINCE	BRITISH COLUMBIA	ISLAND
			CONSULTING LTD.
			Overseas
Permanent Datum	GROUND LEVEL	Sea	K 8
Well Depth Measured from	GROUND LEVEL	Atmos. Perm. Datum	CSC
			G.L.
			METRIC
Run No.	ONE		
Date	10 JUNE 1981		
Field Reading	108.0 m		
Footage Logged	6.2 m		
Depth Reached	101.8 m		
Depth Driller	108.3		
Depth Roker	110.00		
Casting Roker			
Casting Driller			
Fluid Type	WATER		
Liquid Level	6.2 m		
Wm. Dam			
Run @ ° C	18.3 am		
Operating Time	1 1/2 HOUR		
Track No.	106		
Recorded By	WILSON	Witnessed By	CHOLASH

Remarks: FBL # 10 CURRENT RANGE STD MUDFISH RESISTANCE 360 OHMS  
 ELECTRODE SONDE 20 CM BEAM WIDTH 100 CM ARRAY  
 PRIMARY 10 OHM/DIV SECONDARY 100 OHM/DIV





Ox-Clude Creek S1(3\*)A\*(1) 81-2

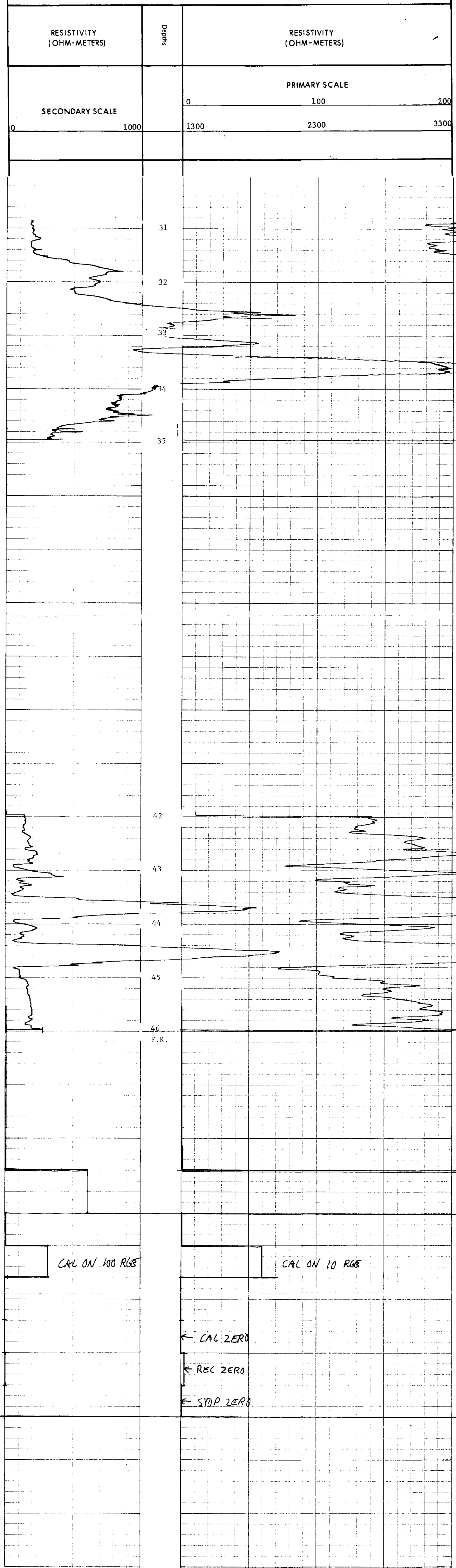
# ROKE

FOCUSED BEAM LOG 5 CM

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	CANDEL OIL LTD.	THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF ALBERTA
LSD SEC TWP RGE	WELL	C - 81 - 2	PERMIT NO. 1001
N	LOCATION	VANCOUVER ISLAND	SPRINGFIELD CONSULTING LTD.
M	FIELD	CHITTE	Other Services:
	PROVINCE	BRITISH COLUMBIA	
	Permanent Datum	GROUND LEVEL	Elev. _____
	Log Measured from	GROUND LEVEL	Above Perm. Datum _____
	Well Depths Measured from	GROUND LEVEL	K.B. _____ CSG _____ GL _____ METRIC _____
Run No.	ONE	TWO	
Date	8 JUNE 1981		
First Reading	46.0	35.0	
Last Reading	42.0	31.0	
Footage Logged	4.0	4.0	
Depth Reached			
Depth Driller			
Casing Roke			
Casing Driller			
Fluid Type			
Liquid Level	AIR/WATER	AIR/WATER	
Min. Diam.	14.9 cm	14.9 cm	
Rm @ °C	18.1m @ 15°C	18.1m @ 15°C	
Operating Time	3/4 HOUR		
Truck No.	105		
Recorded By	WILSON	Witnessed By	CHOLIACH

Remarks FBL # 10 CURRENT RANGE LOW MUDFISH RESISTANCE 1300 OHMS  
 7 ELECTRODE SONDE 5 CM BEAM WIDTH 68 CM ARRAY  
 PRIMARY 10 OHM/DIV SECONDARY 100 OHM/DIV



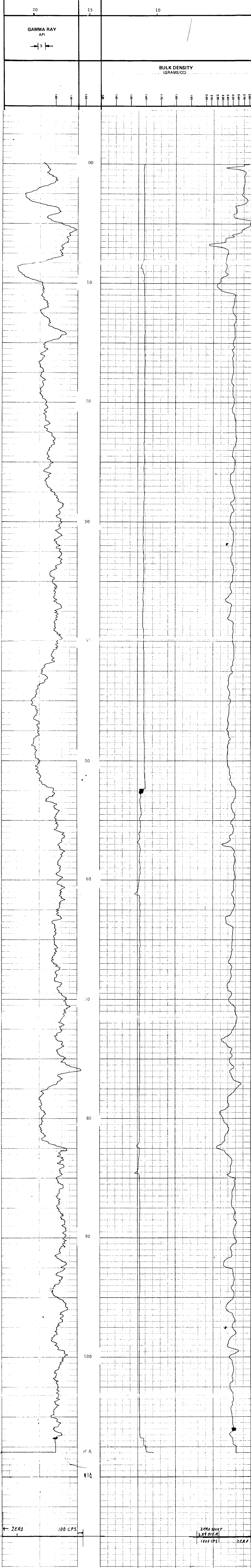
# ROKE

**GAMMA RAY  
SIDEWALL DENSITOG  
CALIPER**  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	CANDEL OIL LTD.	THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF ALBERTA
LSD SEC	WELL	C - 81 - 4	PERMIT NO. <b>10051</b>
TWP	LOCATION	VANCOUVER ISLAND	SPRINGFIELD
RGE	FIELD	CHITRE	CONSULTANTS
W	PROVINCE	BRITISH COLUMBIA	
	Permanant Datum	GROUND LEVEL	Elev. K.8
	Loc. Measured from	GROUND LEVEL	C.S.G.
	Well Depths Measured from	GROUND LEVEL	G.L.
			METRIC
Run No.	ONE		
Date	10 JUNE 1981		
First Reading	108.0 m		
Last Reading	0		
Footage Logged	108.0		
Depth Reached	108.3		
Depth Driller	110.0		
Casing Rate	6.0		
Casing Driller	6.0		
Fluid Type	WATER		
Liquid Level	6.2 m		
Min. Diam.	15 cm		
Operating Time	2 HOURS		
Truck No.	106		
Recorded By	WILSON	Witnessed By	CHIOLOACH

RUN NO.	DEPTHS		SPEED M/MIN	GAMMA RAY			SIDEWALL DENSITOG			CPS/DIV	
	FROM	TO		T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G.R. UNITS PER LOG DIV.	T.C. SEC.	SENS SETTINGS		ZERO DIV. L OR R
ONE	0	108.0	8	3	500	OL	9 API	0.5	5000	2.89 R	139.45
TWO	0	108.0	8				CALIPER				

REMARKS: LOGGED OPEN HOLE, GRR TOOL #282, CALIPER TOOL #785, DENSITY TOOL #247AS



← ZERO 100 CPS

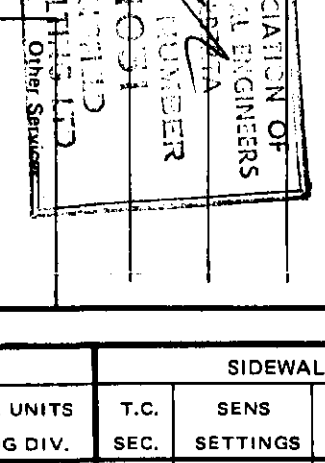
ZERO SHIRT 2.89 DIV. R. 1000 CPS ZERO

# ROKE

**GAMMA RAY  
SIDEWALL DENSILOG  
CALIPER**

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO. COMPANY **GAMDEL OIL LTD.**  
 WELL **C - 81 - 5**  
 LOCATION **VANCOUVER ISLAND**  
 FIELD **CHITTE**  
 PROVINCE **BRITISH COLUMBIA**



Permanent Datum **GROUND LEVEL** K.B. \_\_\_\_\_  
 Log Measured from **GROUND LEVEL** CSG \_\_\_\_\_  
 Well Depth Measured from **GROUND LEVEL** G.L. \_\_\_\_\_ METRIC

Run No. **ONE**  
 Date **11 JUNE 1981**  
 First Reading **91.0 m**  
 Last Reading **0**  
 Footage Logged **91.0**  
 Depth Reached **91.3**  
 Depth Driller **91.5**

Casing Driller **8.5**  
 Fluid Type **AIR/WATER**  
 Liquid Level **59.2 m**  
 Min. Diam. **15 cm**

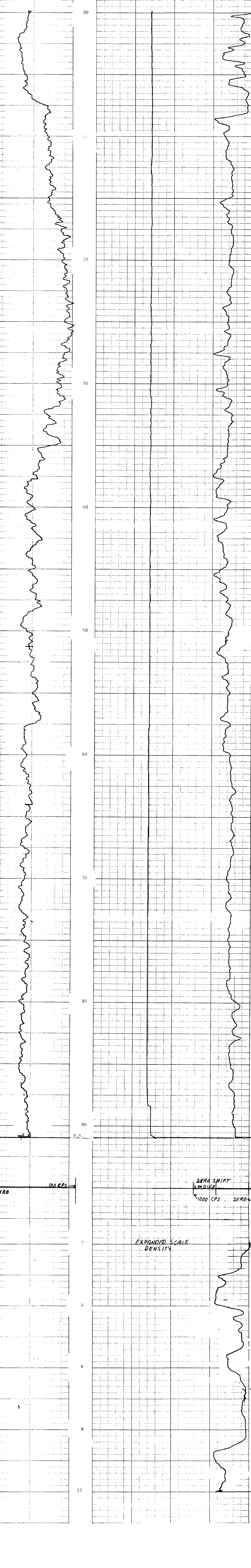
Operating Time **2 HOURS**  
 Truck No. **106**

Recorded By **WILSON** Witnessed By **CHIOACH**

RUN NO.	GENERAL DEPTHS		SPEED M/MIN	T.C. SEC.	GAMMA RAY			SIDEWALL DENSILOG			
	FROM	TO			SENS SETTINGS	ZERO DIV. L OR R	API G.R. UNITS PER LOG DIV.	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	CPS/DIV
ONE	0	91.0	8	3	500	OL	9 API	0.5	5000	2.89 R	139.45

REMARKS: LOGGED OPEN HOLE GRR TOOL #282 CALIPER TOOL #785 DENSITY TOOL #247AS

DEPTHS	CALIPER DIAMETER - CM		GAMMA RAY API	BULK DENSITY (GRAMS/CC)
	10	15		
20			9	





# ROKE

OIL ENTERPRISES LTD. CALGARY, ALBERTA

GAMMA RAY  
SIDEWALL DENSITOG  
CALIPER

FILE NO. \_\_\_\_\_ COMPANY CANDEL OIL LTD. THE ASSOCIATION OF  
LSD \_\_\_\_\_ WELL C-81-3 PRODUCERS OF  
TWP \_\_\_\_\_ LOCATION VANCOUVER ISLAND BRITISH COLUMBIA  
RGE \_\_\_\_\_ FIELD CHUDE CCNS-81-3 LTD.  
M \_\_\_\_\_ PROVINCE BRITISH COLUMBIA OTHER SERVICES \_\_\_\_\_  
K8 \_\_\_\_\_  
K9 \_\_\_\_\_  
K10 \_\_\_\_\_

Present Datum GROUND LEVEL Elev. \_\_\_\_\_  
Log Measured from GROUND LEVEL \_\_\_\_\_  
Well Depth Measured from GROUND LEVEL \_\_\_\_\_  
K8 \_\_\_\_\_  
K9 \_\_\_\_\_  
K10 \_\_\_\_\_

Run No. ONE  
Date 9 JUNE 1981

Last Reading 0  
First Reading 109.5

Footage Logged 109.5  
Depth Reached 109.7

Coring Rate 4.2  
Coring Drill 4.6

Fluid Type WATER  
Liquid Level 0 m  
Min. Depth 17.8 cm

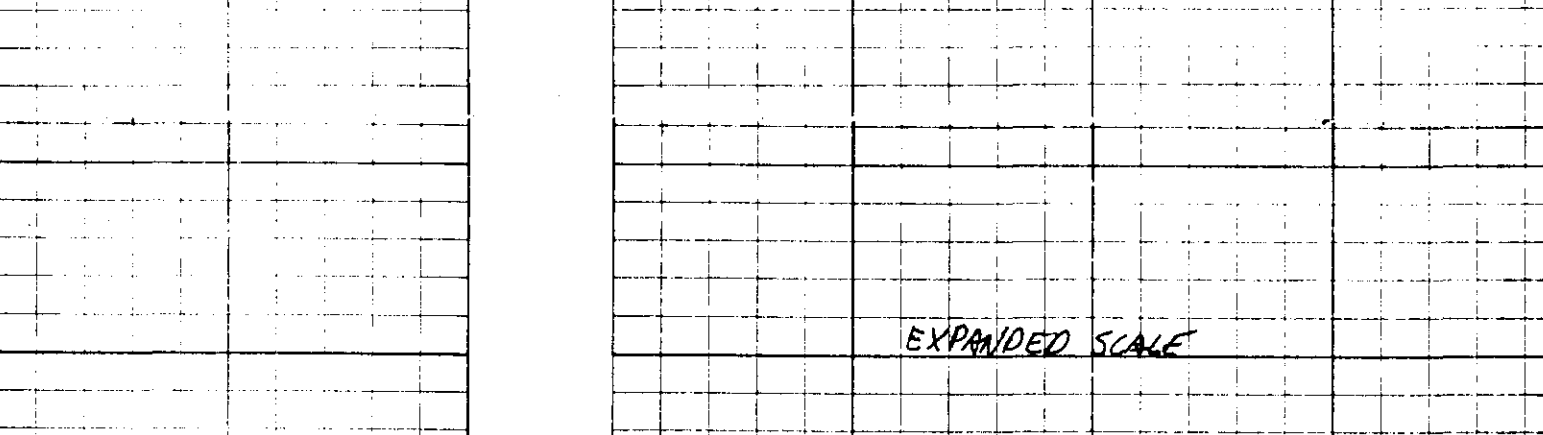
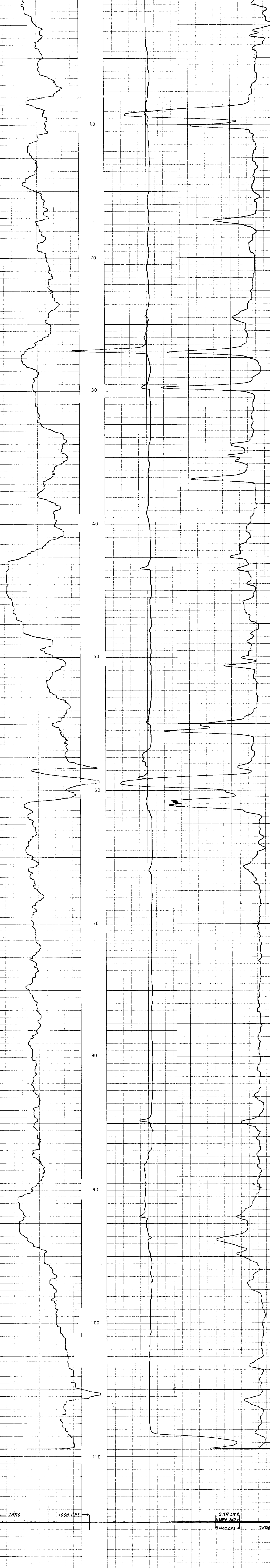
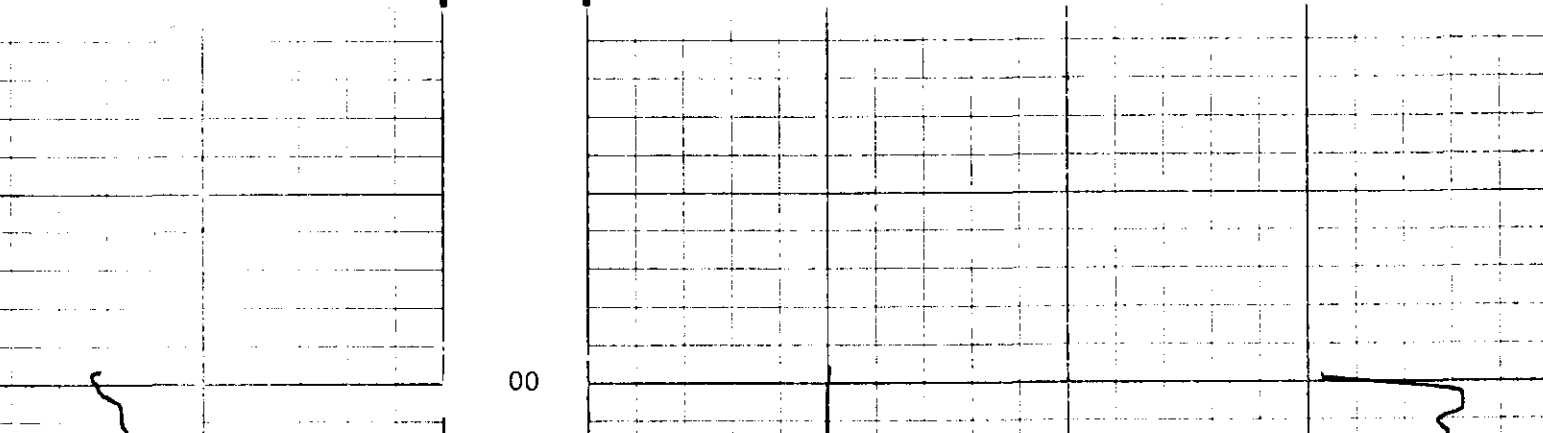
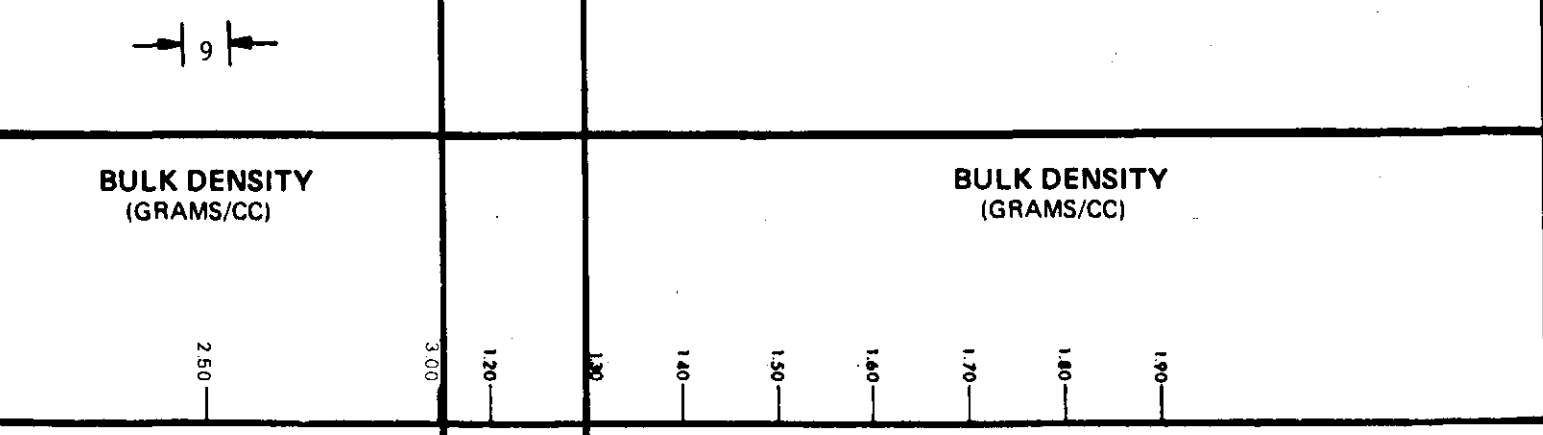
Operating Time 4 1/2 HOUR  
Truck No. 106

Recorded By WILSON Witnessed By CHODJACH

78

RUN NO.	DEPTHS		SPEED M/MIN	T.C. SEC.	GAMMA RAY		SIDEWALL DENSITOG		CPS/DIV		
	FROM	TO			SENS SETTINGS	ZERO DIV. L OR R	T.C. SEC.	SENS SETTINGS		ZERO DIV. L OR R	
ONE	0.0	109.5	8	3	500	OIL	9 APT	0.5	5000	2.89 R	139.45
REP	0.0	109.5	8		CALIPER			0.5	5000	2.89 R	139.45
	57.0	62.0	4		EXPANDED	SCALE					

REMARKS



Scale: 1000 CPS, 2.89 DIV R, 1000 CPS

# ROKE

GAMMA RAY  
SIDEWALL DENSITOG  
CALIPER

OIL ENTERPRISES LTD. CALGARY ALBERTA

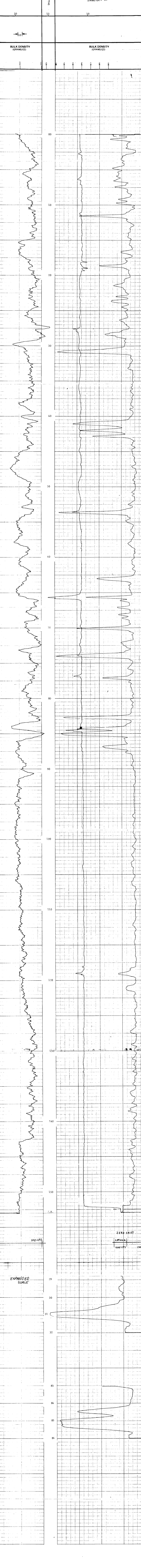
FILE NO. \_\_\_\_\_  
 COMPANY: CANBRI OIL LTD. THE ASSOCIATION OF PROFESSIONAL ENGINEERS  
 WELL: C-81-1  
 REC: 10/1/63  
 LOCATION: VANCOUVER ISLAND  
 FIELD: CHIRTE  
 PROVINCE: BRITISH COLUMBIA  
 PERMANENT DATUM: GEORND LEVEL  
 LOG MEASURED FROM: GEORND LEVEL  
 WELL OPEN MEASURED FROM: GEORND LEVEL  
 RUN NO: 7  
 DATE: JUNE 1961  
 FIELD NUMBER: 133.0 m  
 FERRIS LOGGED: 133.0 m  
 OPEN RASER: 133.2 m  
 DEPTH: 132.4 m

GENERAL		GAMMA RAY		SIDEWALL DENSITOG			
RUN NO.	DEPTH	SENS SETTINGS	ZERO DIV. OR R	T.C. SEC.	SENS SETTINGS	ZERO DIV. OR R	CPS/DIV
ONE	0.0	100	OL	10 API	5000	2.89 R	139.45
TWO	0.0						
REP.	83.0						
REP.	29.0						

REMARKS: LOGGED OPEN HOLE.

Operating Time: 3 1/2 HOURS  
 Truck No: 106

Recorded By: WILSON  
 Witnessed By: GINDLACH



GENERAL		GAMMA RAY		SIDEWALL DENSITOG			
RUN NO.	DEPTH	SENS SETTINGS	ZERO DIV. OR R	T.C. SEC.	SENS SETTINGS	ZERO DIV. OR R	CPS/DIV
ONE	0.0	100	OL	10 API	5000	2.89 R	139.45
TWO	0.0						
REP.	83.0						
REP.	29.0						



Oil-Quartz Creek 81341A \* (1) 81-2

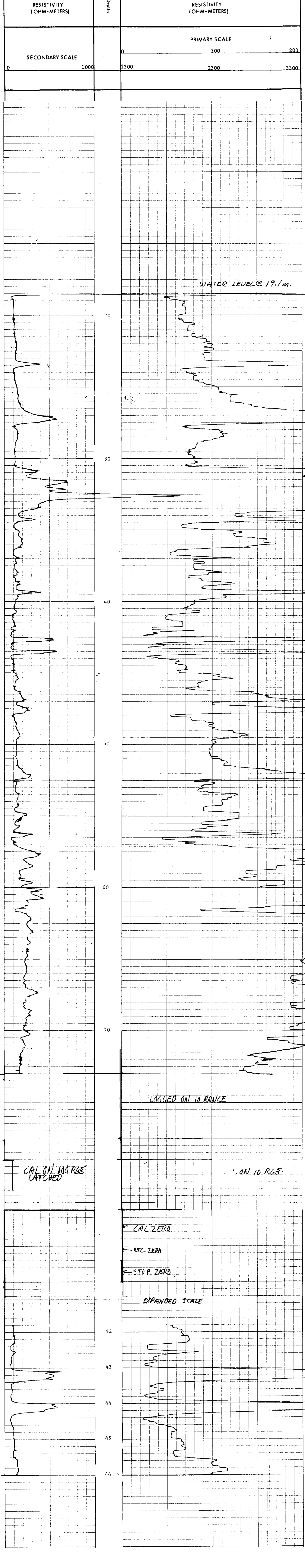
# ROKE

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FOCUSED BEAM LOG 20 CM

FILE NO.	COMPANY	GARDEL OIL LTD.	THE ASSOCIATION OF PROFESSIONAL ENGINEERS
LSD	WELL	C - 81 - 2	ON-DUTY
SEC	LOCATION	VANCOUVER ISLAND	PERMIT NUMBER P 1031
TWP	FIELD	CHUTE	SPRINT LTD. CONSULTING LTD.
RGE	PROVINCE	BRITISH COLUMBIA	OFFICE SERVICES
M	Permanent Datum	GROUND LEVEL	K.B.
	Well Depth Measured from	GROUND LEVEL	CSGS
			G.L.
			METRIC
Run No.	ONE		
Date	8 JUNE 1981		
First Reading	73.5 m		
Art Reading	19.1 m		
Footage Logged	54.5 m		
Depth Reached	73.8 m		
Depth Driller	73.3 m		
Casing Stake	19.5 m		
Casing Driller	20.0 m		
Fluid Type	AIR/WATER		
Liquid Level	19.0 m		
Min. Diam	14.9 cm		
Rim @ °C	18.4m @ 15°C		
Operating Time	1 HOUR		
Truck No	106		
Recorded By	WITSON	Witnessed By	CHOLACI

Remarks	FBL #	10	CURRENT RANGE	STD	MUDFISH RESISTANCE	1300	OHMS
			ELECTRODE SONDE	20	CM BEAM WIDTH	100	CM ARRAY
			PRIMARY	10	OHM/DIV	SECONDARY	100
							OHM/DIV

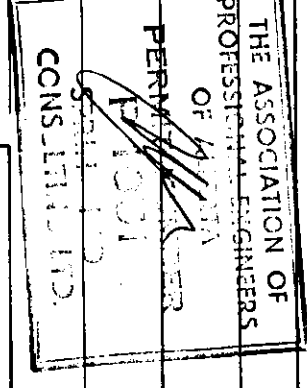


CX - Cloute Creek B1(3\*)A \*(1) B1-H

# ROKE

OIL ENTERPRISES LTD. CALGARY, ALBERTA  
 FOCUSED BEAM LOG 5 CM

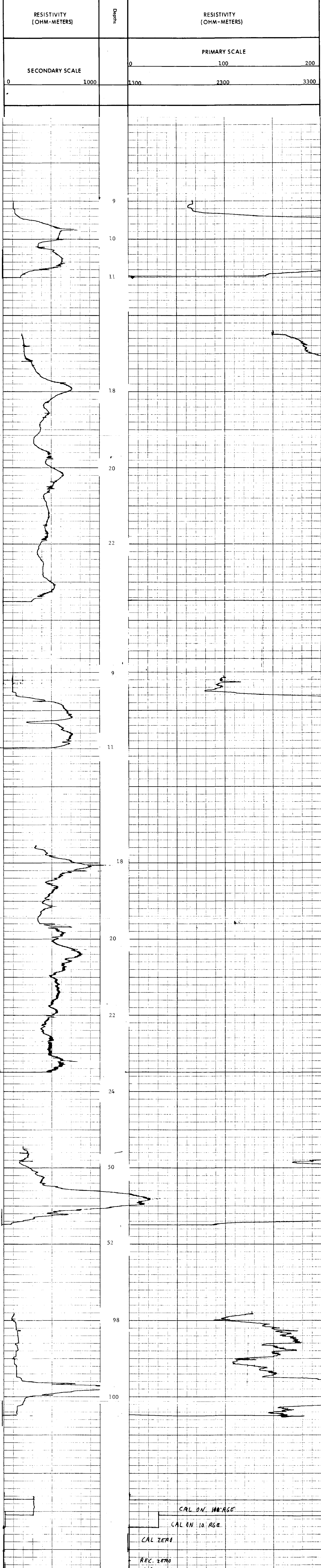
FILE NO. \_\_\_\_\_ COMPANY CANDILL OIL LTD.  
 L.S.D. \_\_\_\_\_ WELL C - B1 - 4  
 SEC \_\_\_\_\_ TWP C - B1 - 4  
 PAGE \_\_\_\_\_ LOCATION VANCOUVER ISLAND  
 VI \_\_\_\_\_ FIELD CHITTE  
 PROVINCE BRITISH COLUMBIA  
 Permanent Datum GROUND LEVEL Elevation \_\_\_\_\_  
 Log Measured from GROUND LEVEL Above Perm. Datum \_\_\_\_\_  
 Well Depth Measured from GROUND LEVEL G.L. \_\_\_\_\_ METRIC



Run No. ONE  
 Date 10 JUNE 1981  
 First Reading 100.42 m  
 Last Reading 9.0 m  
 Footage Logged 21.0 m  
 Depth Reached 108.3 m  
 Depth Driller 110.0 m  
 Casing Roke 6.0 m  
 Casing Driller 6.0 m  
 Fluid Type WATER  
 Liquid Level 6.2 m  
 Min. Diam. 15 cm  
 Rm @ 0 C 6.3 am @ 11°C

Operating Time 1/2 HOUR  
 Truck No. 106  
 Recorded By WILSON  
 Witnessed By GHOLACH

Remarks FBL # 10 CURRENT RANGE LOW MUDFISH RESISTANCE 360 OHMS  
 ELECTRODE SONDE 5 CM BEAM WIDTH 68 CM ARRAY  
 PRIMARY 10 OHM/DIV SECONDARY 100 OHM/DIV



CAL ON 100 AGE  
 CAL ON 10. RGE  
 CAL ZERO  
 REC. ZERO  
 STOP ZERO

CX - Grade Sheet - 81 (3\*)A \*1) 81-5

# ROKE

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FOCUSED BEAM LOG 5 CM

FILE NO.	COMPANY	CANDEL OIL LTD
LSD	WELL	C - 81 - 5
SEC	LOCATION	VANCOUVER ISLAND
TWP	FIELD	CHUTE
RGE	PROVINCE	BRITISH COLUMBIA
W		

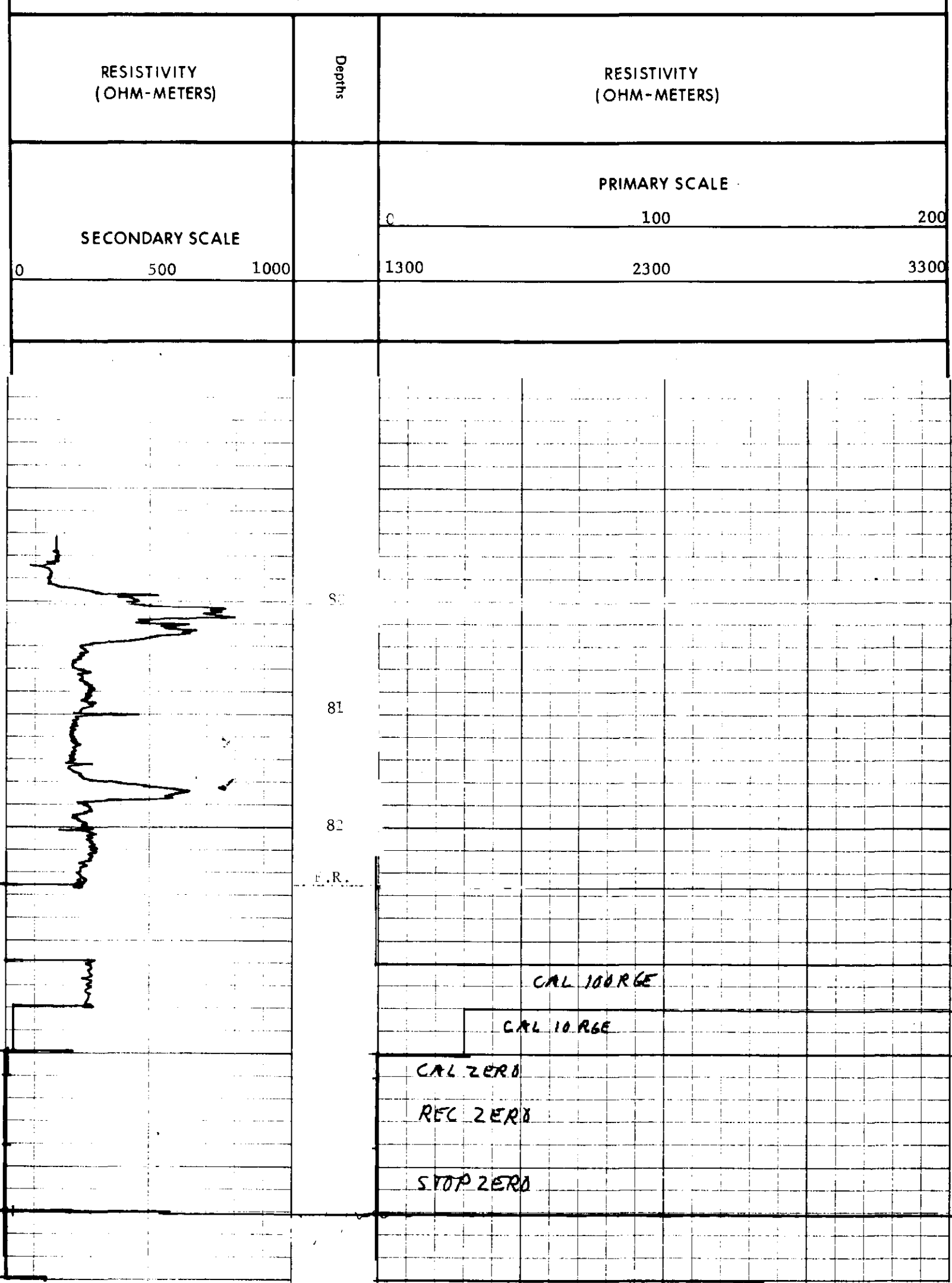
THE ASSOCIATION OF PROFESSIONAL ENGINEERS  
 PERMIT NUMBER 1051  
 CONSULTING SERVICES

Permanent Datum	GROUND LEVEL	Elev.	K.B.
Log Measured from	GROUND LEVEL	Above Perm. Datum	CSG
Well Depths Measured from	GROUND LEVEL		GL
			METRIC

Run No.	ONE
Date	11 JUNE 1981
First Reading	82.5
Last Reading	79.5
Footage Logged	3.0
Depth Reached	91.3
Depth Driller	91.5
Casing Roke	
Casing Driller	8.5
Fluid Type	AIR/WATER
Liquid Level	59.2 m
Min. Diam.	15 cm
Rm @ °C	7.1 am @ 11°C
Operating Time	1/2 HOUR
Truck No.	106

Recorded By WILSON Witnessed By CHOLACH

Remarks FBL # 10 CURRENT RANGE LOW MUDFISH RESISTANCE 700 OHMS  
 7 ELECTRODE SONDE 5 CM BEAM WIDTH 68 CM ARRAY  
 PRIMARY 10 OHM/DIV SECONDARY 100 OHM/DIV



*[Handwritten signature]*

L12



Dr. Oliver, Great 81(3)A x(1) 81-3

# ROKE

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FOCUSED BEAM LOG 20 CM

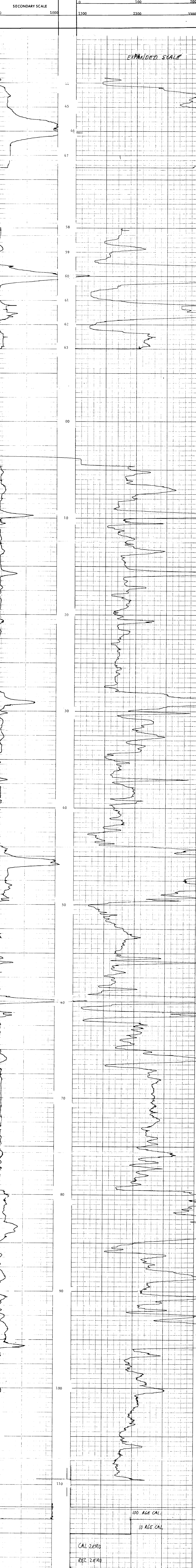
FILE NO. COMPANY CANDEL OIL LTD. THE ASSOCIATION OF  
 INDUSTRY PRODUCERS OF ALBERTA  
 WELLS SEC. C - 81 - 3  
 RICE M LOCATION VANCOUVER ISLAND  
 W FIELD CHUTE CONS. (ALBERTA) LTD.  
 PROVINCE BRITISH COLUMBIA  
 Permanent Datum GROUND LEVEL Elevation Above Firm Datum K 8  
 Log Measured from GROUND LEVEL CGS  
 Well Depth Measured from GROUND LEVEL G.L. METRIC

Run. No. ONE TMO THREE  
 Date 9 JUNE 1981  
 Film Reading 109.5 m 63.0 m 47.0  
 Film Reading 3.5 58.0 m 44.0  
 Focuser Lumped 106.0 5.0 m 3.0

Depth Readout 109.7  
 Chang Driller 4.2  
 Fluid Type WATER  
 Liquid Level 14.8 cm  
 Min. Depth  
 Temp. @ 9 C 32.4m @ 8 C

Operating Time 1 HOUR  
 Tick No. 106  
 Recorded By MITSON Witnessed By CHOLACHI

Remarks FBL # 10 CURRENT RANGE STD MUDFISH RESISTANCE 850 OHMS  
 ELECTRODE SONDE 20 CM BEAM WIDTH 100 CM ARRAY  
 PRIMARY 10 OHM/DIV SECONDARY 100 OHM/DIV



CX-Claw Creek 81(31)A\*081-1

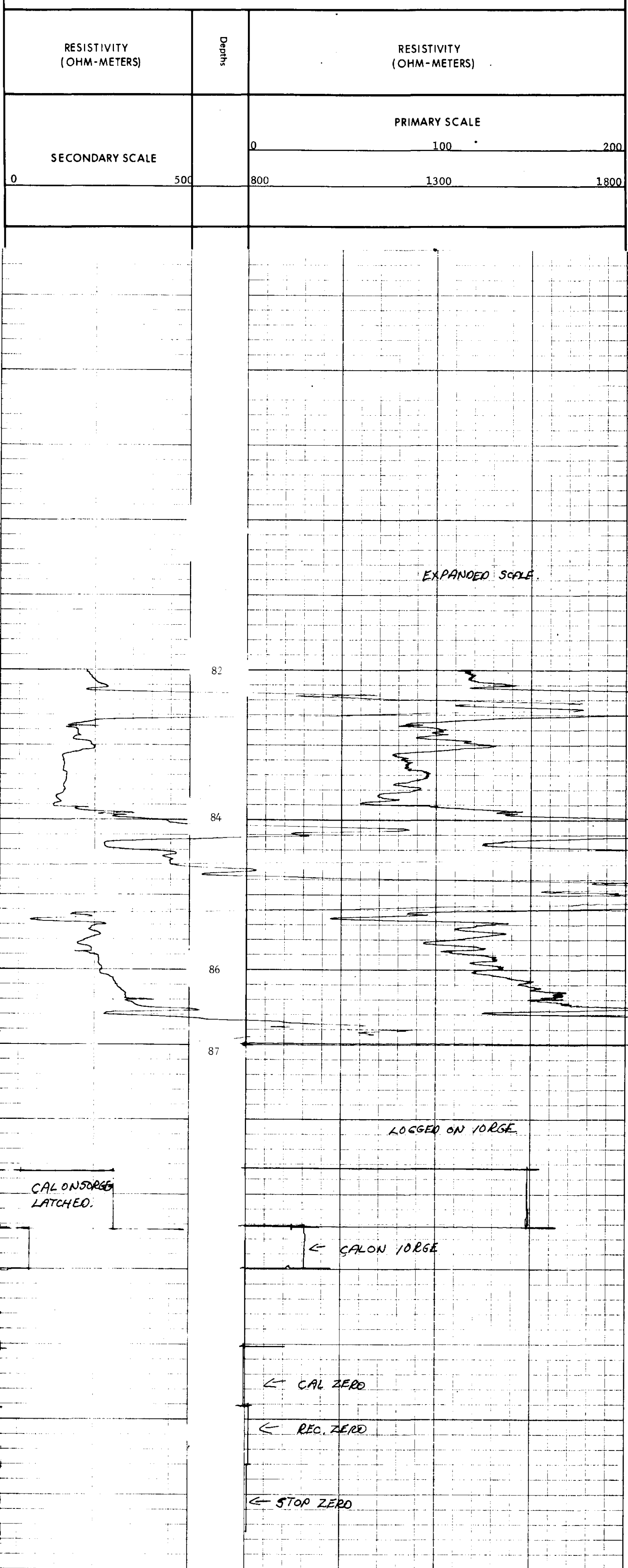
# ROKE

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FOCUSED BEAM LOG 5 CM

FILE NO.	COMPANY	GANDEL OIL LTD.	THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF ALBERTA
LSD	WELL	C - 81 - 1	PERMITS
SEC	LOCATION	VANCOUVER ISLAND	1981
TWP	RGE	CHUTE	CONSULTING LTD.
W	FIELD	CHUTE	Other Services:
M	PROVINCE	BRITISH COLUMBIA	K. B.
	Permanent Datum	GROUND LEVEL	Elev.
	Log Measured from	GROUND LEVEL	Above Perm. Datum
	Well Depths Measured from	GROUND LEVEL	G. L.
			METRIC
Run. No.	ONE		
Date	7 JUNE 1981		
First Reading	87.0 m		
Last Reading	82.0 m		
Footage Logged	5.0 m		
Depth Reached			
Depth Driller			
Casing Roke			
Casing Driller			
Fluid Type	WATER / AIR		
Liquid Level			
Min. Diam.			
Rm @ °C	15.0m @ 14.4 °C		
Operating Time	1/2 HOUR		
Truck No	106		
Recorded By	WILSON	Witnessed By	CHOLACH

Remarks FBL # 10 CURRENT RANGE Low MUDFISH RESISTANCE 550 OHMS  
 7 ELECTRODE SONDE 5 CM BEAM WIDTH 68 CM ARRAY  
 PRIMARY 10 OHM/DIV SECONDARY 50 OHM/DIV



# ROKE

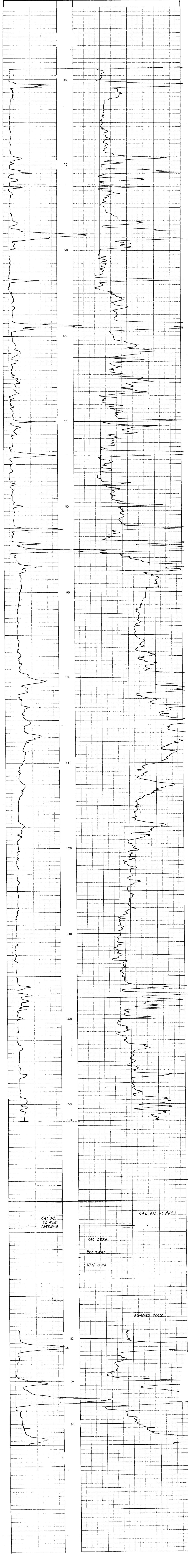
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FOCUSED BEAM LOG 20 CM

CE-Quartz Core G1(3)A \* (1) B1

FILE NO	COMPANY	CLIENT	WELL	WELL ID	WELL TYPE	WELL DATE	WELL M	LOCATION	FIELD	PROVINCE	PERMIT	CONTRACT NO.	OTHER SERVICE
	CAIBET OIL LTD	THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF ALBERTA	C - 81 - 1					VANCOUVER ISLAND	CHITIE	BRITISH COLUMBIA	GROUND LEVEL	1001	
LSD													
SIC													
Payment Datum	GROUND LEVEL	Sea	From Datum	SEA	From Datum	SEA	From Datum	SEA	From Datum	SEA	From Datum	SEA	From Datum
Log Measured from	GROUND LEVEL	SEA	From Datum	SEA	From Datum	SEA	From Datum	SEA	From Datum	SEA	From Datum	SEA	From Datum
Well Depth Measured from	GROUND LEVEL	SEA	From Datum	SEA	From Datum	SEA	From Datum	SEA	From Datum	SEA	From Datum	SEA	From Datum
Run No.	0715												
Date	7 JUNE 1981												
First Reading	152.0 m												
Last Reading	20												
Footage Logged	152.0 m												
Depth Reached	152.4												
Casing Bore													
Casing Drill													
Fluid Type	AIR/ALUMINA												
Liquid Level													
Min. Diam	13.0 cm												
Run @ °C	15.0 m @ 14.0 °C												
Operating Time	2 1/2 HOURS												
Task No.	106												
Recorded by	WATSON												
Witnessed by	CHIOJAGE												

Remarks FBL # 10 CURRENT RANGE STD MUDFISH RESISTANCE 550 OHMS  
 ELECTRODE SONDE 20 CM BEAM WIDTH 100 CM ARRAY  
 PRIMARY 10 OHM/DIV SECONDARY 50 OHM/DIV



Recorded by WATSON Witnessed by CHIOJAGE

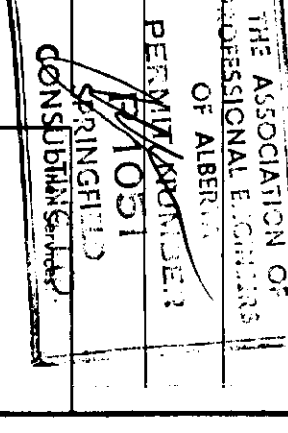


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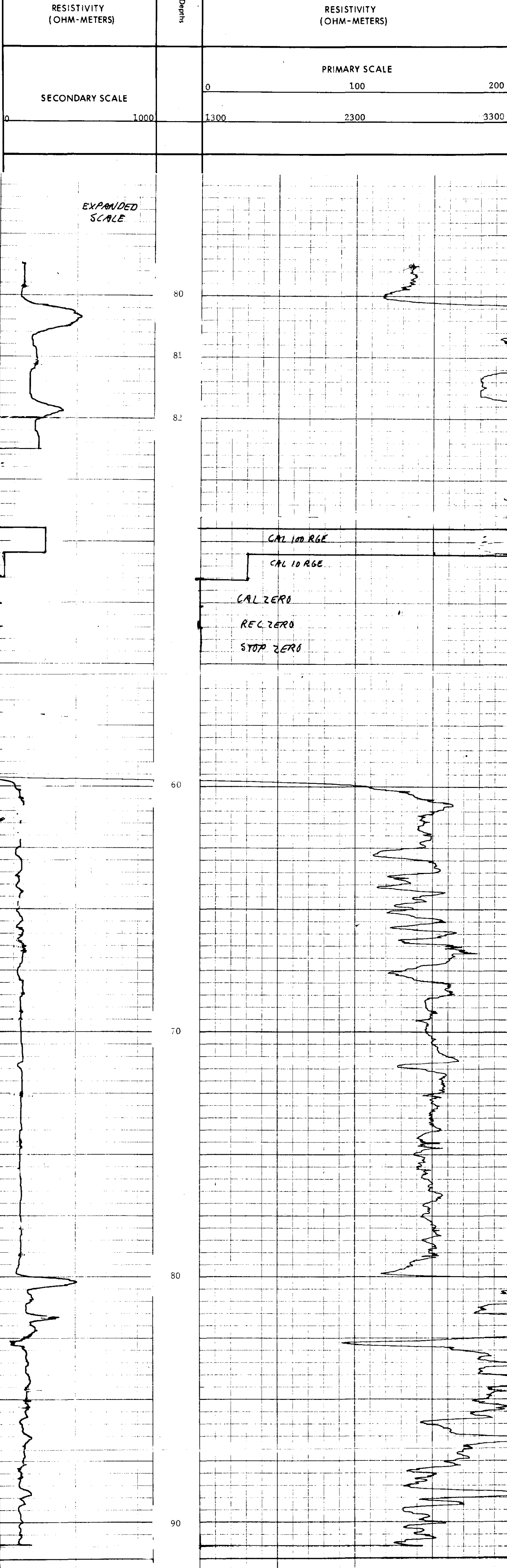
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FOCUSED BEAM LOG 20 CM

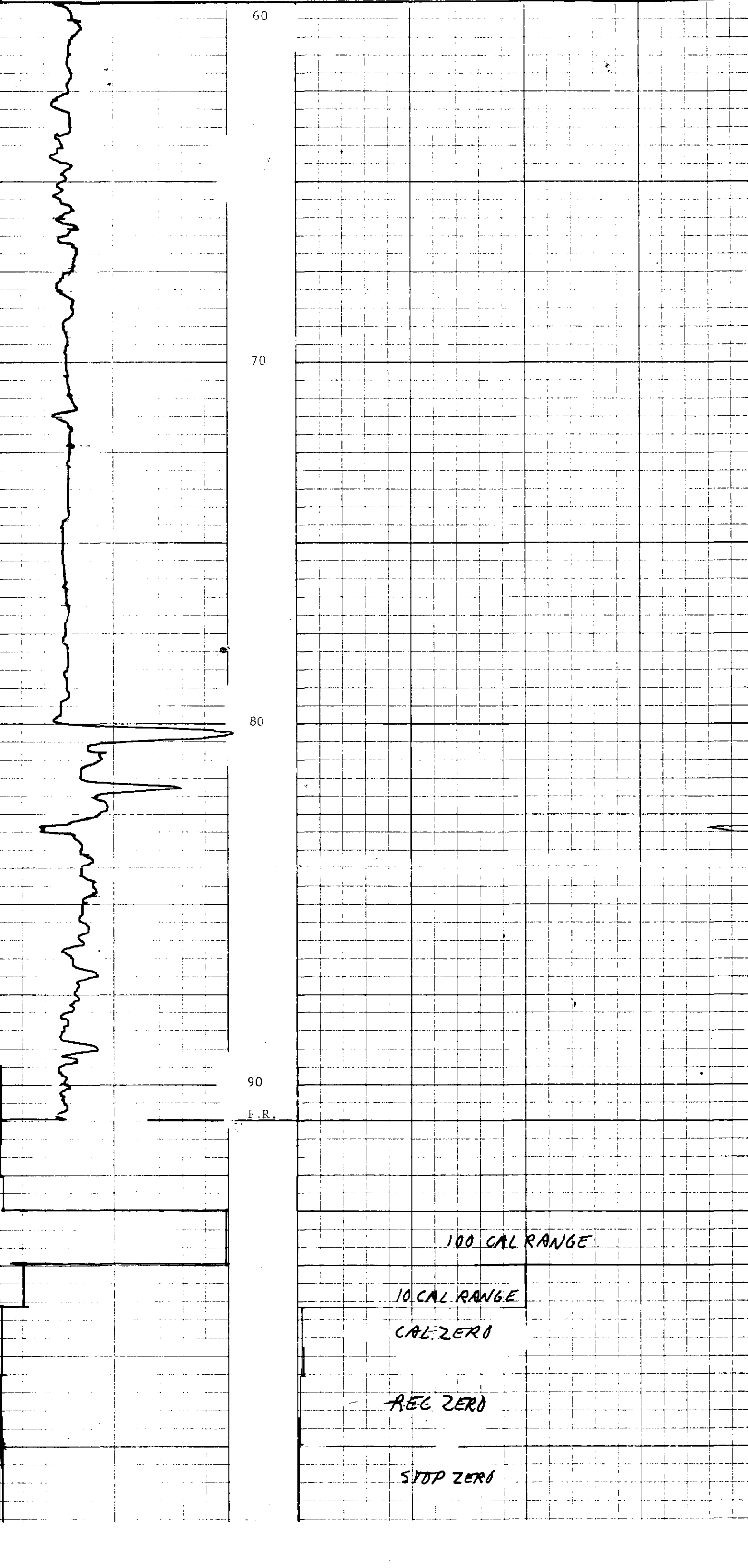
FILE NO.	COMPANY	CANDEL OIL LTD.
LSD	WELL	C - 81 - 5
SEC	LOCATION	VANCOUVER ISLAND
TWP	FIELD	CHURCH
RGE	PROVINCE	BRITISH COLUMBIA
W	PERMIT	PERMIT 11051
		SPRINGFIELD
		CONSOLIDATED
Permanant Datum	GROUND LEVEL	K.B.
Log Measured from	GROUND LEVEL	CSG
Well Depth Measured from	GROUND LEVEL	GL
		METRIC
Run No.	ONE	
Date	11 JUNE 1981	
First Reading	91.0 m	
Last Reading	59.2	
Footage Logged	31.8	
Depth Reached	91.3	
Depth Driller	91.5	
Casing Hole	8.5	
Fluid Type	AIR / WATER	
Liquid Level	59.2 m	
Min. Diam.	15 cm	
Rm @ 0 C	7.1 Am @ 11°C	
Operating Time	1 HOUR	
Track No	106	
Recorded By	WILSON	Witnessed By
		CHOLACH



Remarks FBL # 10 CURRENT RANGE STD MUDFISH RESISTANCE 700 OHMS  
 ELECTRODE SONDE 20 CM BEAM WIDTH 100 CM ARRAY  
 PRIMARY 10 OHM/DIV SECONDARY 100 OHM/DIV



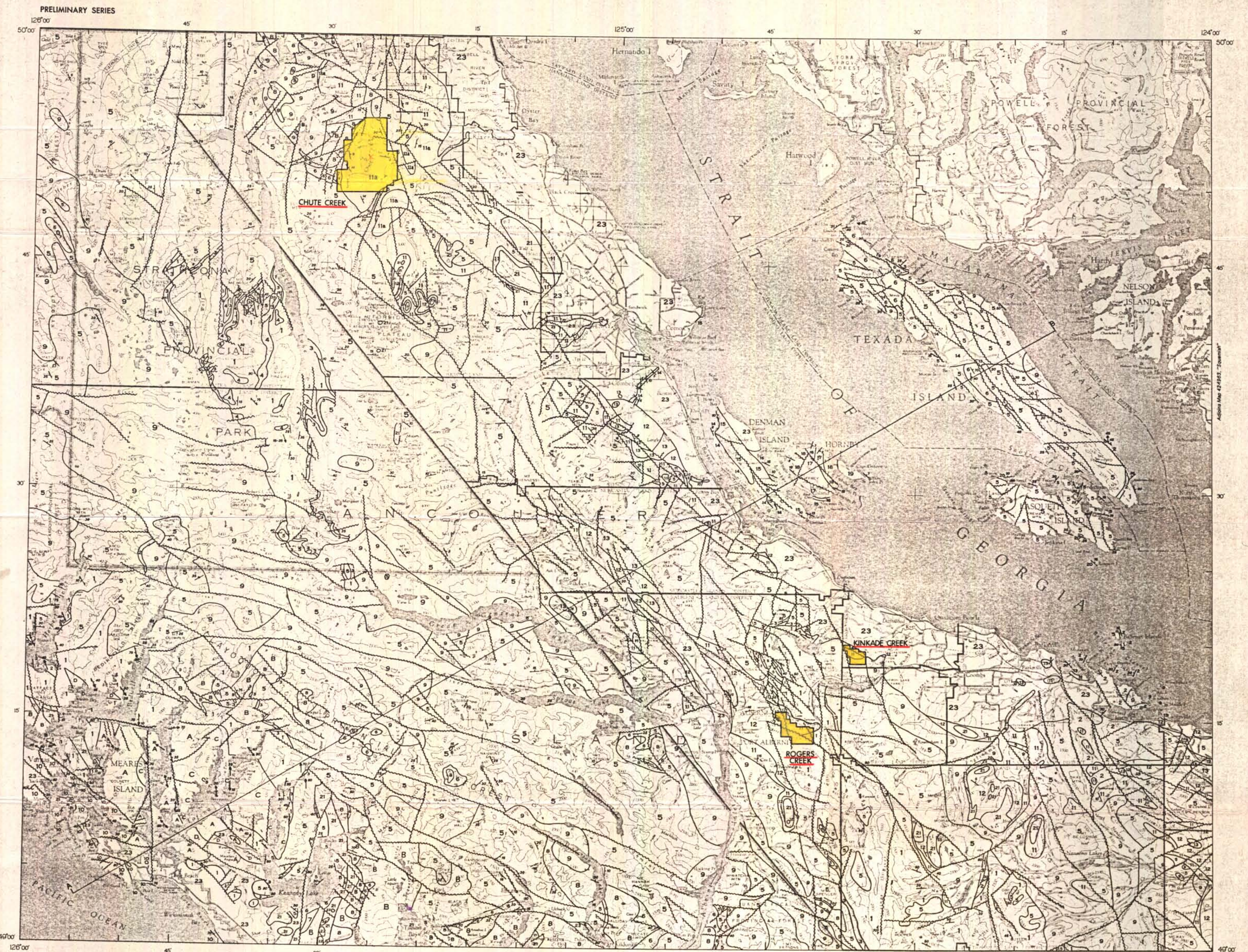
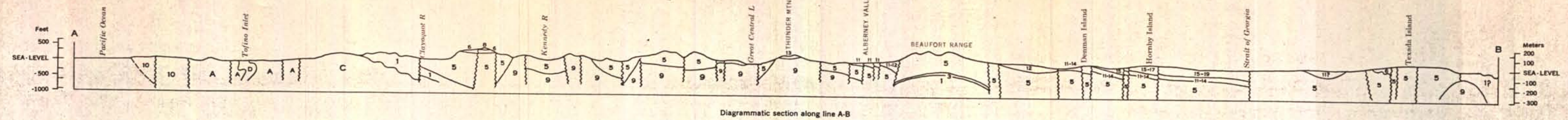
Remarks FBL # 10 CURRENT RANGE STD MUDFISH RESISTANCE 700 OHMS  
 ELECTRODE SONDE 20 CM BEAM WIDTH 100 CM ARRAY  
 PRIMARY 5 OHM/DIV SECONDARY 50 OHM/DIV





LEGEND

- CENOZOIC**
- QUATERNARY  
PLEISTOCENE AND RECENT  
23 Glacial and alluvial deposits
- TERTIARY  
22 Rhyolitic, to dacitic tuff, breccia, ignimbrite
- 21 Hornblende quartz diorite, leucogranite monzonite, porphyritic dacite, breccia
- CRETACEOUS OR TERTIARY  
20 Sandstone, conglomerate
- CRETACEOUS AND (?) TERTIARY  
UPPER CRETACEOUS AND (?) TERTIARY  
NANAIMO GROUP (11-19)  
19 GABRIOLA FORMATION: sandstone, conglomerate, shale
- UPPER CRETACEOUS  
18 SPRAY FORMATION: siltstone, shale, fine sandstone
- 17 GEOFFREY FORMATION: conglomerate, sandstone
- 16 NORTHUMBERLAND FORMATION: siltstone, shale, fine sandstone
- 15 DE COURCY FORMATION: conglomerate, sandstone
- 14 CEDAR DISTRICT FORMATION: shale, siltstone, fine sandstone
- 13 EXTENSION-PROTECTION FORMATION: sandstone, conglomerate, shale, coal
- 12 HASLAM FORMATION: shale, siltstone, fine sandstone
- 11 COMOX FORMATION: sandstone, conglomerate, shale, coal: 11a is BENSON MEMBER: mainly coarse conglomerate
- UPPER JURASSIC AND/OR LOWER CRETACEOUS  
10 'Tofino Area Greywacke Unit' Greywacke, argillite, conglomerate
- MESOZOIC**
- JURASSIC  
MIDDLE TO UPPER JURASSIC  
9 ISLAND INTRUSIONS: biotite-hornblende granodiorite, quartz diorite
- TRIASSIC AND JURASSIC  
LOWER JURASSIC (?)  
VANCOUVER GROUP (5-8)  
BONANZA SUBGROUP (7, 8)  
8 VOLCANIC DIVISION: andesitic to latitic breccia, tuff and lava; minor greywacke, argillite and siltstone
- UPPER TRIASSIC AND LOWER JURASSIC  
SEDIMENTARY DIVISION: limestone and argillite, thin bedded, silty carbonaceous
- UPPER TRIASSIC  
6 QUATSINO FORMATION: limestone, mainly massive to thick bedded, minor thin bedded limestone
- UPPER TRIASSIC AND OLDER  
5 KARMUTSEN FORMATION: pillow-basalt and pillow-breccia, massive basalt flows; minor tuff volcanic breccia, Jasperoid tuff, breccia and conglomerate at base
- TRIASSIC OR PERMIAN  
4 Gabbro, peridotite, diabase
- PALEOZOIC**
- PENNSYLVANIAN, PERMIAN AND OLDER  
LOWER PERMIAN  
SICKER GROUP (1-3)  
3 BUTTE LAKE FORMATION: limestone, chert
- MIDDLE PENNSYLVANIAN  
2 Argillite, greywacke, conglomerate; minor limestone, tuff
- PENNSYLVANIAN AND OLDER  
1 Volcanic breccia, tuff, argillite; greenstone, green schist; dykes and sills of andesite-porphyr
- 'WESTCOAST CRYSTALLINE COMPLEX' (A-D)  
'BASIC ROCKS'  
D Gabbro, peridotite
- 'TOFINO INLET PLUTON'  
C Hornblende-biotite quartz diorite, granodiorite
- 'WESTCOAST DIORITES'  
B Hybrid hornblende diorite, quartz diorite, agmatite; includes masses of hornfelsic volcanic rocks
- 'WESTCOAST GNESS COMPLEX'  
A Hornblende-plagioclase gneiss, amphibolite, hornfels
- Geological boundary (approximate) .....  
Bedding (inclined, vertical, overturned) .....  
Schistosity, foliation (inclined) .....  
Schistosity, foliation and minor fold axes (inclined, vertical, arrow indicates plunge) .....  
Lincation (axes of minor folds) .....  
Fault (approximate); lineament .....
- Geology by J. E. Muller, 1963-1967.  
Includes contributions by W. G. Jeffery, D. J. T. Carson
- To accompany GSC Paper 68-50 by J. E. Muller
- This preliminary edition may be subject to revision and correction
- Geological cartography by the Geological Survey of Canada, 1969  
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Magnetic declination 1968 varies from 27° 51' easterly at centre of east edge to 23° 09' easterly at centre of west edge. Mean annual change decreasing 2.7'

Elevations in feet above mean sea-level

MAP 17-1968  
PAPER 68-50  
GEOLOGY  
ALBERNI  
BRITISH COLUMBIA  
Scale 1:250,000

Miles 4 0 8 12  
Kilometres 6 0 6 12 18

FIG. 1  
CANDEL OIL LTD.

GEOLOGY & LOCATION MAP  
(Chute, Kinkade & Rogers Coal Licences)

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