00067 (7)

LEXCO TESTING LTD

DRILLHOLE REPORT

PROJECT: Campbell River DATE: January 8,1977

COMPANY: Lexco

HOLE NO.: QU-77-1

APPROX. LOCATION: 195 + 6200 Rt. SEC.___ TWP.___ RGE.___ W.___

SURVEYED LOCATION: 201+25.5 6130.9 Rt

ELEVATION: 998.2

DRILLER: D. Broen

FROM	TO	LOG	REMARKS
0	7	Boulders	
7	12	Sandstone	
12	100	Gray Sandstone	
100	130	Soft green sand stone	water at 130' app. 20 gal per min.
130	245	Gray sand stone	
245	248	Brown shale	
248	254	Coal	
254	315	Grey shale	

COMMENTS

WATER HORIZON FT.

OK - Gamma 7/26/91

CANADIAN ARCTIC SURVEY SYSTEMS LTD.
708 - 353 STREET N.W. CALGARY, ALTA.

GAMMA DENSITY & RESISTANCE

COMPANY: LEACO TESTING LTD.
WELL: DRILLACLE SW 1711
FIELD: QUINSAM
PROVINCE: BRITISH COLUMBIA

Permanent Datum: G.L. Elev. 1497.5 ft above perm. Datum
Log Measured from: G.L. 6.0 ft above Perm. Datum
Date: 6 Jan 78
Run No.: 67
Type Log: Gamma Density Resistance
Depth-Driller: 1.0
Depth-Logger: 1.0
Bottom Log Interval: 1.0
Top Log Interval: Surface
Casing-Driller: 6 5/8 @ 1.0
Casing-Logger: 1.0
Bit Size: N/A
Type Fluid in Hole: Water
Dens. / Visc.: N/A
pH / Fluid Loss: N/A
Source of Sample: Circulated
Rm @ Meas. Temp.: N/A
Rmf @ Meas. Temp.: N/A
Rmc @ Meas. Temp.: N/A
Source: Rmf: N/A Rmc: N/A
Rm @ BHT: N/A
Time Since Circ.: 1.0
Time Log Started: 1.0
Max. Rec. Temp.: N/A
Equip. Location: Campbell River
Recorded by: K. Sepchuck
Witnessed by: Mr. Conrad

Elev. K.B. 0.0 ft
D.F. ft
G.L. ft

Other Services: Gamma Ray

Fold Here

This Heading/and Log Conforms to API RP 33B

	Run No.	Run No.	Run No.
Gamma Ray	Two	Two	One
Tool Model No.	WP	L-103	L-103
Diameter	1 3/8	2.0	2.0
Detector Model No.	N61	MT	F
Type	Scint		
Length	3.0		13
Resistance Tool Model No.		L-103	
Resistance Diameter		2.0	
Resistance Type		MT	
Resistance Spacing			13
Density Tool Model No.			L-103
Density Diameter			2.0
Density Type			F
Density Length		7.25	
Density Horiz. Scale		10 in/div.	
Density Rm @ °F		N/A	
Density Source Model			HDVP
Density Serial No.			687
Density Textrope			CA-137
Density Strength			125 mC

EQUIPMENT DATA

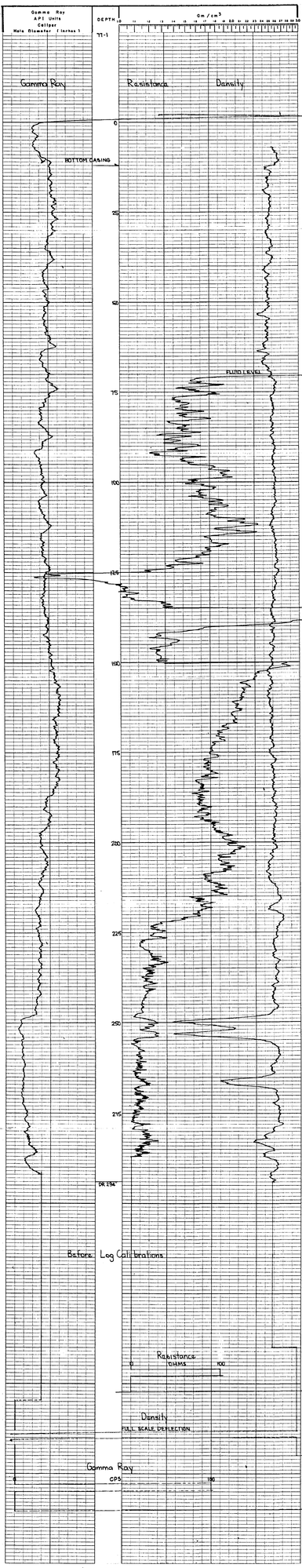
General	
Hoist Truck No.	1
Inst. Truck No.	1
Location	Campbell River

LOGGING DATA

General Depths Run No.	From	To	Speed Ft/Min.	T.C. Sec.	Gamma Ray Sens. Settings	Gamma Ray Zero Div. L or R	Density API G/C³ Units per Log Div.	T.C. Sec.	Density Sens. Settings	Density Zero Div. L or R
1	U	T.D.	1K	4	100	1R	11.9	1	1K	.5L

Reference Literature: N/A

Remarks: D. Green
Resistance shift left 1.5 divisions left @ 1.25
20 ... 1.40
11 ... right - 1.25
Hole bridged @ 29.4 (1) but excellent hole conditions from surface to bridge



LEXCO TESTING LTD.

DRILL HOLE REPORT

COALFIELD: Campbell River DATE: Jan 10-77

COMPANY: Lexco Testing

HOLE NO.: QU-77-2

APPROX. LOCATION: SEC. TWP. RGE. W.

SURVEYED LOCATION: 171+35.2 4203.1 Rt.

ELEVATION: 1006.1

DRILLER: J.L.Lodoen

FROM	TO	LOG	REMARKS
0	10	rocks and clay	
10	15	granit boulders	
15	84	sandstone	
84	104	green sandstone	
104	119	green sandstone stringers of brown shale	
119	143	green sandstone	
143	173	siltstone	
173	187	grey sandstone	
187	196	grey shale	
196	210	grey sandstone	
210	212	carbonaceous shale	
212	216	coal	
216	220	brown and carbonaceous shale	
220	221	coal	
221	222	brown shale	
222	248	grey shale	
248	256	brown shale stringers of coal	
256	268	grey shale stringers of sandstone	
267	272	brown shale trace of coal	
272	293	grey shale	
293	297	basalt	

COMMENTS

WATER HORIZON FT.

LEXCO TESTING LTD
DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: Jan 10, 1977

COMPANY: Lexco Testing

HOLE NO.: QU-77-3 172+68.9

APPROX. LOCATION: SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: 5960.6 Rt 172+68.9

ELEVATION: 929.0

DRILLER: D. Broen

FROM	TO	LOG	REMARKS
0	2	till	
2	78	grey sandstone	
78	97	green sandstone	
97	100	carbonaceous shale	
100	110	grey sandstone	
110	157	kgreen sandstone	
157	260	grey sandstone	
260	266	brown shale	
266	270	coal	
270	279	brown shale	
279	281	carbonaceous shale	
281	310	brown shale	
310	317	red shale	
317	319	carbonaceous shale	
319	335	brown shale	
335	413	red shale	

COMMENTS

WATER HORIZON FT.

Ex. Bluestone 77 Gas

CANADIAN ARCTIC SERVICES LTD.

GAMMA DENSITY & RESISTANCE

FOR - 35 A STREET N.W. CALGARY, ALTA.

COMPANY LEXCO TESTING LTD.

WELL DRILLHOLE 77-3

FIELD GUINSAM CZX-6681

PROVINCE BRITISH COLUMBIA

Elev. K.B. D.F. G.L. Date Run No. Depth Driller Depth Logger Top Log Interval Bottom Log Interval Casing Driller Casing Logger Bit Size Type Fluid in Hole Density Viscosity pH Fluid Loss Source of Sample Rm @ Measured Temp. Rmf @ Measured Temp. Rmc @ Measured Temp. Source of Rmf & Rmc Rm @ BHT Time Since Circ. Max. Rec. Temp. Equipment Number Location Recorded by Witnessed by

| | | |

LEXCO TESTING LTD
DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: Jan 14, 1977

COMPANY: Lexco Testing

HOLE NO.: QU-77-4

APPROX. LOCATION: SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: 157+26.9 7230.9 Rt

ELEVATION: 875.0

DRILLER: D. Breen

FROM	TO	LOG	REMARKS
0	15	boulders	
15	129	sandstone	
129	131	carbonaceous shale	
131	247	grey sandstne	
247	307	brown shale	
307	378	grey sandstone	
378	385	carbonaceous shale	
385	415	brown sandstone	

COMMENTS

WATER HORIZON FT.

Re Glenbow Field

CANADIAN ARCTIC SURVEY

GAMMA DENSITY & RESISTANCE

708 - 3RD STREET N.W. CALGARY, ALTA.

COMPANY LASCO TESTING LTD.

WELL DRILLERS E. GULF LA

FIELD GLENBOW

PROVINCE NORTHWEST TERRITORIES

Permanent Datum: Log Measured From: Drilling Measured From: Elev. Perm. Datum: Elev. K.B. Elev. D.F. Elev. G.L.

Other Services: Date: Run No.: Depth Driller: Depth Logger: Bottom Log Int.: Top Log Int.: Casing Driller: Casing Logger: Bit Size: Type Fluid in Hole: Dens.: Visc.: pH: Fluid Loss: Source of Sample: Rm @ Meas. Temp.: Rmf @ Meas. Temp.: Rmc @ Meas. Temp.: Source Rmf: Source Rmc: Rm @ BHT: Time Since Circ.: Max. Rec. Temp.: Equip. Location: Recorded By: Witnessed By:

Run No.	Bit Size	Casing Driller	Depth Driller	Depth Logger	Bottom Log Int.	Top Log Int.	Type Fluid in Hole	Dens.	Visc.
1	6.5								

Source	Rm	Rmf	Rmc	Rm @ BHT
Measured				
Estimated				

Equipment	Location
Recorded By	
Witnessed By	

Field Note This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

	Gamma Ray	Resistivity	Density	Caliper
Run No.	Thomas	Two	Dual	
Tool Model No.	VLC	L-9A	9-9C	
Diameter	1 3/8	2 3/8	2 3/8	
Detector Model No.	Nal	MC	MC	
Type	Scint			
Length	30		15	
Source			1 Ci	
Model			200 Mc/Sec	
Serial No.			N/A	
Location	Campbell River			

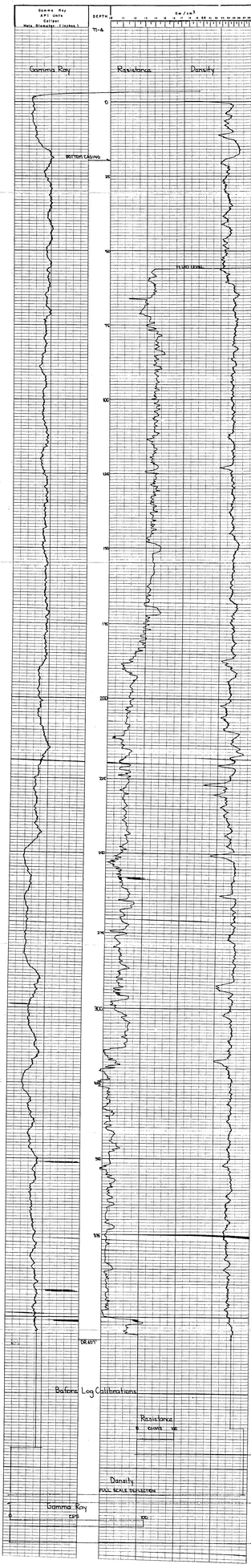
Recorder	Gamma Ray	Resistivity	Density
Model Truck No.		Source Model	U.O.V.P.
Unit Truck No.		Serial No.	8857
Location	Campbell River	Isotope	Cs-137
		Strength	125 mC

LOGGING DATA

Recorder	Gamma Ray							Density			
	Depths	Speed	T.C.	Gain	Zero	API GR Units		T.C.	Gain	Zero	
Run No.	From	To	ft/Min	Sec.	Settings	Div. L or R	per Log Div.	Sec.	Settings	Div. L or R	
1	60.5	0	30	.4	100	1R	11.0	1	1K	5L	

Reference Interface: N/A

Remarks: 1) Repeat
Excellent hole conditions, Flowing hole



LEXCO TESTING LTD
DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: January 15, 1977

COMPANY: Lexco

HOLE NO.: QU- 77-5

APPROX. LOCATION: SEC. TWP. RGE. W.

SURVEYED LOCATION: 4338 N 4435.2 W 40+00

ELEVATION: 1058.5

DRILLER: Lodoen J.

FROM	TO	LOG	REMARKS
0	15	Boulders	
15	45	Shattered sandstone	
45	70	sandstone	
70	90	siltstone	
90	97	sandstone	
97	113	siltstone	
113	122	grey shale: stringers of brown shale	
122	176	sandstone	
176	180	brown shale	
180	192	coal with partings of brown and carbonaceous shale	
192	195	brown & carbonaceous shale	
195	197	coal	
197	220	coal with partings of brown and carbonaceous	
220	252	sandstone	
252	255	basalt	

COMMENTS

WATER HORIZON FT.

Ex-Quinsam 7/5/8

CANADIAN ARCTIC SURVEY SYSTEMS LTD.
708 - 35 A STREET N.W. CALGARY, ALTA.

GAMMA DENSITY & RESISTANCE

COMPANY LEKCO TESTING LTD.
WELL DRILLHOLE QU-77-5 4135.2 W
FIELD QUINSAM N 30.00
PROVINCE BRITISH COLUMBIA

67

(15)

Lsd. Sec. Twp. Rge. W
Other Services

Permanent Datum G.L. Elev. 1155.5
Log measured from G.L. 11' above perm. Det.
Drill Measured from K.B. D.F. G.L.
Date 15-dec-77
Run No. One
Depth - Driller 252.2
Depth - Logger 252.1
Bottom logged interval 252.1
Top logged interval Surface
Type fluid in hole Water
Salinity PPM Cl. n/a
Density n/a
Max. rec. temp. deg. F n/a
Estimated cement top n/a
Witnessed by S. Bryan (Borehole equipt check out)

Elev. K.B.
D.F.
G.L.
Gamma Density
Type Logging Unit

Fold Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

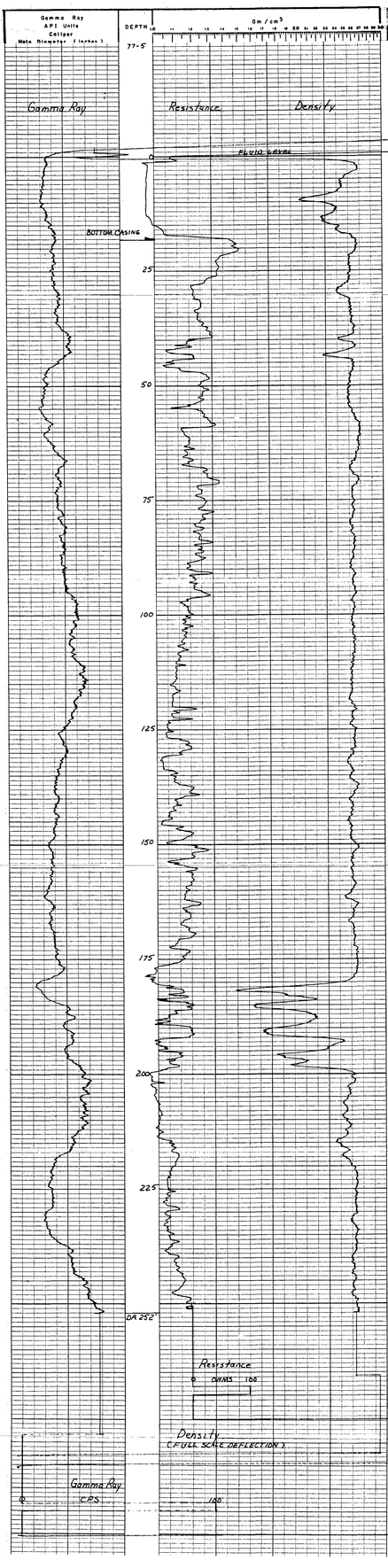
Gamma Ray				Resistance		Density	Caliper
Run No.	Two			Run No.	One	Three	
Tool Model No.	W.R.			Tool Model No.	L-103	L-103	
Diameter	1½"			Diameter	2 1/4"	2 1/4"	
Detector Model No.	No.			Type	AMC		
Type	Scint			Spacing		13"	
Length	3.0'			Length	1.0		
				Horiz. Scale	20Ω/div		
General				Rm @ °F	n/a		
Hoist Truck No.	1			Source Model		HDVP	
Inst. Truck No.	1			Serial No.		687	
Location	Campbell River			Isotope		Cs 137	
				Strength		125 mC	

LOGGING DATA

General				Gamma Ray				Density			
Run No.	Depths From	To	Speed Ft/Min	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
2	252	0	10	4	100	18	11.9			
3	252	0	10					1	16	5L

Reference Literature: n/a

Remarks: R. Ladsen
Excellent hole conditions



LEXCO TESTING LTD

DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: January 16, 1977

COMPANY: Lexco

HOLE NO.: QU-77-6

APPROX. LOCATION: SEC. TWP. RGE. W.

SURVEYED LOCATION: 40+00 3995.5 Lt

ELEVATION: 1089

DRILLER: D Broen

FROM	TO	LOG	REMARKS
0	4	Till	
4	50	Sandstone	
50	57	Grey shale	
57	86	" " sandstone	
86	91	Brown shale	
91	98	coal	
98	126	sandstone	water at 146' app. 40 gal min
126	230	brown shale	
230	243	sandstone	
243	248	coal	
248	260	carb shale with coal stringers	
260	270	grey sand stone	
270	282	white sand stone	

COMMENTS

WATER HORIZON FT.

LUSCAR LTD.
CORE HOLE LOG

HOLE NO. QU-77-6

40+00 3996 January 18, 1977

CORE NO.	CORE FOOTAGES DRILLED FROM	TO	TOT.	RECOVERED SEC.	TOT.	GEOLOGICAL DESCRIPTION (LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION)	TRUE DEPTH	LITH. COLUMN 1" = 10' TRUE DEPTH	LITH.	SEC.
1	82	87	4.8							
						Sandstone-med.gray-med.grained-med.hard massive fractured at 25% to core axis- thin coaly laminae.				
2	87	92	5.0'							
				4.9'		Sandstone as above				
				.1'		Coal;soft;dirty;calcite veining;massive;				
3	92	97	5.3							
				.25		Sandstone as above				
				.90		Coal massive;bright;blocky;soft pyritic				
				.1		Shale;carbonaceous;dk brown; soft				
				2.10		Coal;fractured;soft;dirty;dull&bright banded;calcite infills;pyrite nodules				
				.9		Sandstone as above				
				.75		Coal;massive;bright;blocky;abundant pyrite				
4	97	102	5.2							
				.25		Coal;bright;blocky;fractured;soft				
				.15		Sandstone as above				
				.35		Coal;massive;soft;bright;blocky;calcite infill on cleat surfaces				
				.1		Sandstone as above				
				.6		Coal;soft fractured;bright;blocky;calcite infills;clean				
				.65		Sandstone as above				
				.85		Coal;soft;fractured;abundant calcite; pyrite;blocky				
				.25		Sandstone;high carbon content;black				
				.5		Sandstone;med.gray;med grained;massive				
				.3		Coal;massive;bright blocky;shale laminae pyrite;calcite in abundance				
5	102	110	4.1							
				.5		Coal as above				
				.85		Sandstone as above				
				.45		Coal as above				
				.2		Siltstone dark brown;black carbonaceous soft plastic				
				.75		Sandstone;darkbrown to black;high carbon content;med.grained;shaley				
				1.3		Coal;fractured;broken up;dirty;shaley; calcite infills;				
TOTALS						÷ X100 = % REC. SEAM ÷ X100 = % TOT. REC. SEAM(S)				

LUSCAR LTD.
CORE HOLE LOG

HOLE NO. QU-77-6

CORE NO.	CORE FOOTAGES DRILLED FROM	TO	TOT.	RECOVERED SEC.	TOT.	GEOLOGICAL DESCRIPTION (LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION)	TRUE DEPTH	LITH. COLUMN 1" = 10' TRUE DEPTH	LITH.	SEC.
6	110	117								
				.8		Sandstone;med.grey;med. to coarse grained badly broken up; milled by coring action med. hard;				
				2.5		Sandstone;as above but massive and unbroken; RQD 100%				
				4.6		Sandstone;as above; massive RQD 100%				
7	117	121								
				3.25		Sandstone;as above;RQD=100%				
TOTALS				÷		X100 = % REC.	SEAM			
				÷		X100 = % TOT. REC.	SEAM(S)			

ex-Kimberley 77 (5)

CANADIAN ARCTIC SURVEY SYSTEMS LTD.

708 - 35 A STREET N.W. CALGARY 47, ALTA.

GAMMA DENSITY & RESISTANCE

COMPANY LEKO TESTING LTD.
WELL CORE HOLE 3926
FIELD DRILL HOLE NO. C77-6
PROVINCE QUINSAM
BRITISH COLUMBIA

67 (L6)

Lsd. Sec. Twp. Rge. W
Permanent Datum G.L. Elev. 1089
Log Measured from G.L. 11 above perm. Datum
Drilling Measured from G.L. 11 above perm. Datum

Elev. K.B.
D.F.
G.L.

Other Services

Date	21 Jan. '77
Run No.	Resistance Detail
Type Log	
Depth - Driller	121
Depth - Logger	121
Bottom Logged Interval	111
Top Log Interval	0
Type Fluid in Hole	Water
Salinity PPM Cl.	N/A
Density	1.0
Level	Full
Max. Rec. Temp. deg. F.	
Equipment ID Lines	
Operating Rig Time	
Witnessed By	G. Sandowski

CASING RECORD

No.	Size	Wgt.	From	To

BIT RECORD

No.	Bit	From	To
1	3 7/8 Surf	0	TD

Fold Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

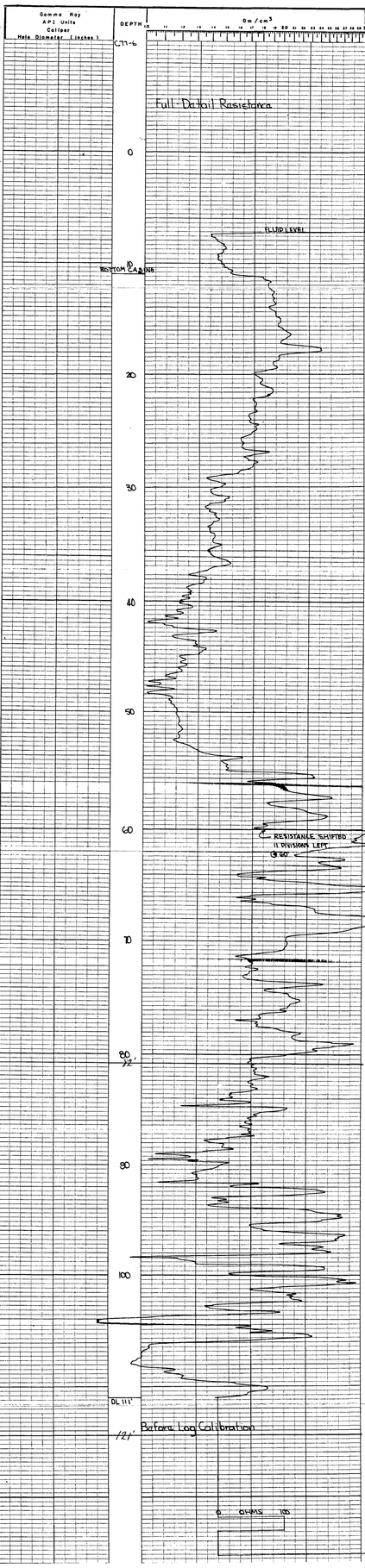
Gamma Ray				Resistance		Density	Caliper
Run No.				Run No.			
Tool Model No.				Tool Model No.	L-103		
Diameter				Diameter	3/8		
Detector Model No.				Type	MF		
Type				Spacing			
Length				Length	1.0		
General				Horiz. Scale	10 cm/div		
Hoist Truck No.				Res. @ 4V	N/A		
Inst. Truck No.				Source Model		HDVP	
Location				Serial No.		687	
				Isotope		Cs 137	
				Strength		125 mC	

LOGGING DATA

General			Gamma Ray						Density		
Run No.	Depths From	Depths To	Speed Ft./Min.	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
1	111	0	15							

Reference Literature: N/A

Remarks: D. Brown
Excellent hole conditions



ex-Glencoe 21 Gelc

CANADIAN ARCTIC SURVEY SYSTEMS LTD.
7828 - 51A STREET N.W. CALGARY, ALTA.

GAMMA DENSITY & RESISTANCE

COMPANY: LEXCO TESTING LTD.
ATTN: L.J.
WELL: ENGLEMAN 20-1-T14
FIELD: ARBUTHNOT
PROVINCE: BRITISH COLUMBIA

67

Permanent datum	G.L.	Elev.	0.0 ft
Log measured from	G.L.		14 ft above perm. Dat.
Drilling Measured from	G.L.		
Date	1-Jan-1		
Run number	One		
Depth-driller	2.19		
Depth-logger	2.19		
Bottom logged interval	2.19		
Top logged interval	N/A		
Type fluid in hole	Water		
Salinity, PPM Cl	N/A		
Density	N/A		
Level	Full		
Max. rec. temp. deg. F			
Estimated T. in			
System	Gamma Density		Res.
Recorded by	Cooper		
Witnessed by	Cooper		

Drill Pipe Data	
O.D.	
Weight	
Grade	
Thread	
Joints	
Length	

Power Source: Battery

Field Data

Field Here

This reading and Log Conforms to API RP 33

EQUIPMENT DATA

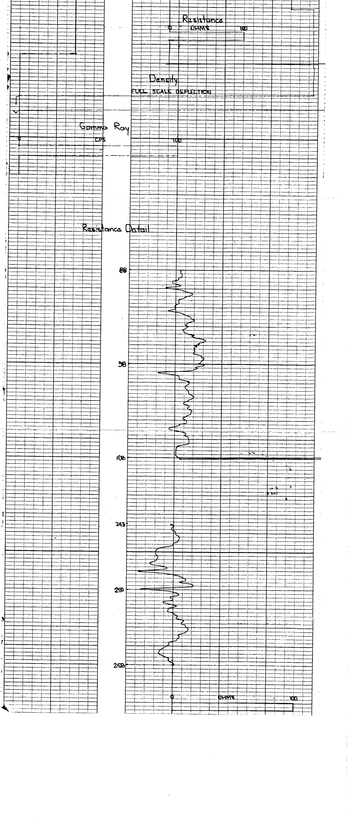
Gamma Ray		Resistivity		Density	Caliper
Run No.	One	Run No.		Model	
Tool Model No.	WGR	Tool Model No.		Diameter	1.90 in
Diameter	1 3/4	Diameter	2 3/4	Source	2.5
Detector Model No.	Not Scint.	Type Sensing	Mg	Detector	F.
Type		Spacing		Spacing	IN
Length	3.0	Length	1.0'		
		Meas. Scale	12.5 Ohm/div		
General		Sensitivity	N/A		
Hoist Truck No.		Source Model		Source	H.D.K.P.
Haul Truck No.		Serial No.		Serial No.	687
Location	Campbell River	Isotopes		Isotopes	Cs 137
		Strength		Strength	125 mc

LOGGING DATA

General					Gamma Ray				Density			
Run No.	Depth From	Depth To	Speed ft/min	T.C. Sec.	Sens. Settings	Zero On L.H.S.	API G.R. Units per Log Div.	T.C. Sec.	Sens. Settings	Zero On L.H.S.
1	2.19	0	5	4	10	1R	11.0		1A	2

Reference Attenuators: N/A

Remarks: 1) Poor location, hole conditions, 2nd attempt following washout repair.



LEXCO TESTING LTD
DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: January 18, 1977

COMPANY: Lexco

HOLE NO.: QU- 77-7

APPROX. LOCATION: SEC. TWP. RGE. W.

SURVEYED LOCATION: 3761 N 4883. Lt

ELEVATION: 1104

DRILLER: J. Lodoen

FROM	TO	LOG	REMARKS
0	4	Till	
4	11	Granite Boulders	
11	14	Coal wtih partings of sandstone	
14	20	sandstone	
20	21	coal	
21	28	brown and carbonaceous shale ;traces of coal	
28	43	siltstne ;traces of coal	
43	53	sandstone ;stringers of coal	
53	55	brown and carbonaceous shale	
55	56	coal	
56	57	brown shale	
57	65	sandstone stringers of brown shale coal	
65	76	siltstone	
76	90	sandstone	
90	136	siltstone and stringers of hard sandstone	
136	141	brown and carbanasous shale	

COMMENTS

WATER HORIZON FT.

98-Gunsam 77/3/2.

CANADIAN ARCTIC SURVEY SYSTEMS LTD.
708 - 35 A STREET N.W. CALGARY, ALTA.

GAMMA DENSITY & RESISTANCE

COMPANY LEXCO TESTING LTD.
WELL DRILLHOLE GW 71-7
FIELD GUNSAM
PROVINCE BRITISH COLUMBIA

Lsd. Sec. Twp. Rge. W
Permanent Datum G.L. Elev. 1103.7 Elev. K.B.
Log measured from G.L. ft. above perm. Det. D.F.
Drilling measured from G.L. G.L.

Other Services

Run No.	1B	Two
Type - Fluid	Sump	
Density - Lower	Density	Gamma Ray
Depth - Logger	212	
Depth - Logged Interval	212	
Top Logged Interval	0	
Type Fluid in Hole	Water	
Salinity PPM Cl.	N/A	
Density	12.6	
Level	Full	
Max. rec. temp. deg. F.		
Equipment - location	2 Miles	
Recorded by	G. Sandwick Jr.	
Witnessed by	G. Gardner	

BORE-HOLE RECORD

Bit No.	From	To
6 3/4	Surf.	212
4 3/4	212	T.D.

CASING RECORD

Size	Wgt.	From	To
3"		Surf.	20'

Fold Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

Gamma Ray					Resistance	Density	Caliper
Run No.	Two			Run No.	One	One	
Tool Model No.	WR			Tool Model No.	L-103	L-103	
Diameter	1 3/4"			Diameter	2 1/8"	2 1/8"	
Detector Model No	Na			Type	MF	E	
Type	Scint.			Spacing		15"	
Length	3.0'						
				Length	10'		
				Horiz. Scale	20 cps/div.		
				Rm @ °F	N/A		
				Source Model		HDVP	
				Serial No.		687	
				Isotope		Cs 137	
				Strength		125 mC	

General

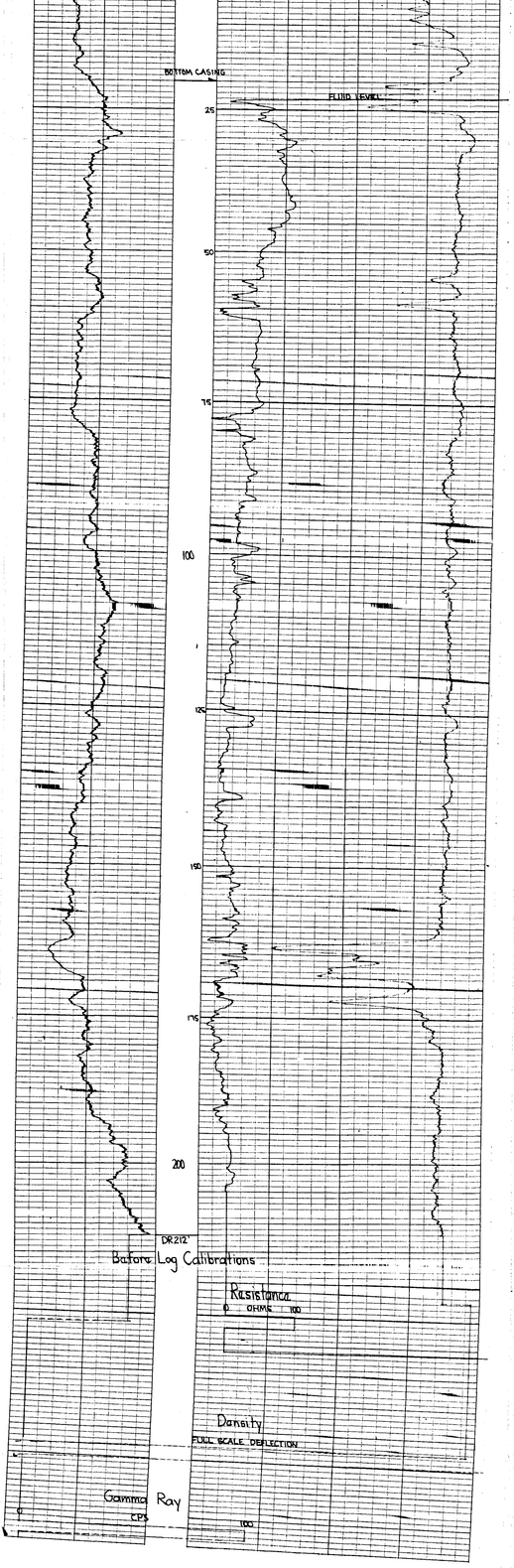
Hoist Truck No.	1
Inst. Truck No.	1
Location	Campbell River

LOGGING DATA

Gamma Ray									Density			
General												
Run No.	Depths From	Depths To	Speed Ft/Min	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		
1	212'	0	10	4	100	1R	12.5	1	1K	5L		

Reference Literature: N/A

Remarks: R Logger
Excellent hole conditions



LEXCO TESTING LTD

DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: January 18,77

COMPANY: Lexco

HOLE NO.: 45+00 5200 Lt. QU-77-8

APPROX. LOCATION: SEC. TWP. RGE. W.

SURVEYED LOCATION: 45+00 5242' Lt.

ELEVATION: 1121

DRILLER: D. Broen

FROM	TO	LOG	REMARKS
0	10	Till	
10	83	Grey sandstone	water at 20 ft
83	97	brown sandstone	approx. 10 gal per min
97	102	coal	
102	107	carb. shale	
107	119	grey sandstone	
119	125	green sandstone	
125	135	brown sandstone	
135	204	basalt	

COMMENTS

WATER HORIZON FT.

ok - Gunsam 72/8/16

CANADIAN ARCTIC SURVEY SYSTEMS LTD.

GAMMA DENSITY & RESISTANCE

708 - 33 A STREET N.W. CALGARY, ALTA.

COMPANY LESCO TESTING LTD.

WELL DRILLER GUTTA 52-42 Lt

FIELD QUINSAM 67

PROVINCE BRITISH COLUMBIA 56100 (L9)

Lsd. Sec. Twp. Rge. W.

Permanent Datum G.L. Elev. /2/

Log measured from G.L. ft. above perm. Dat.

Drilling measured from G.L. Elev. K.B.

D.F.

G.L.

Other Services

RUN No.	Bit	From	To	Size	Wgt.	From	To
	6 1/8	Surf	TD	5"		Surf	8'

BORE-HOLE RECORD

CASING RECORD

Operating time since last circulation

Max. rec. temp. deg. F

Equipment location

Recorded by G.S. Dacey

Witnessed by Scotchmer

Type Log Gamma Ray / Two Density

Depth-Logger 202'

Depth-Logged 202'

Bottom logged interval

Top log interval

Type fluid in hole

Salinity, PPM Cl.

Density

Fluid level

Rds.

This Heading and Log Conforms to API RP 33

Fold Here

EQUIPMENT DATA

Gamma Ray		Resistance	Density	Caliper
Run No.	Two	Run No.	Two	
Tool Model No.	WK	Tool Model No.	L-103	L-103
Diameter	1 3/8	Diameter	2 1/8	2 1/8
Detector Model No.	N/A	Type	ME	E
Type	Scint	Spacing		15"
Length	5.0"	Length	10"	
		Horiz. Scale	33.3 A/div	
		Rm @ °F	N/A	
		Source Model	HDVP	
		Serial No.	687	
		Isotope	Cs 137	
		Strength	125 mC	

General

Hoist Truck No.	1	
Inst. Truck No.		
Location	Campbell River	

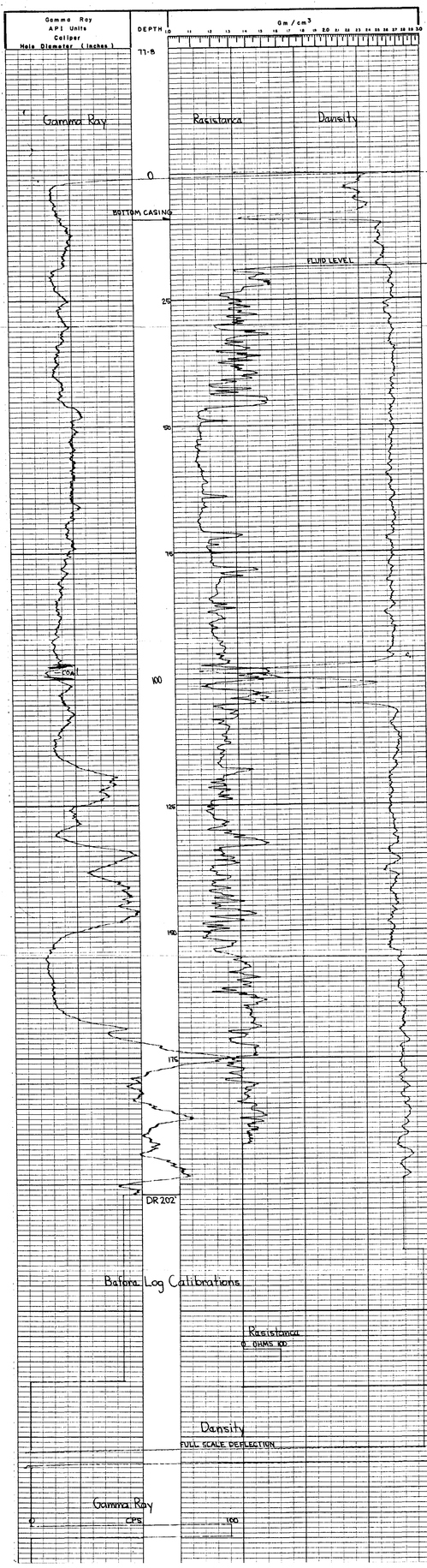
LOGGING DATA

Gamma Ray

Run No.	Depths From	Depths To	Speed Ft/Min	T.C. Sec.	Sens. Settings	Zero Div. L or R	API G.R. Units per Log Div.	T.C. Sec.	Density Sens. Settings	Density Zero Div. L or R
1	202'	0	10	1	100	1R	12.5	1	1K	5L

Reference Literature: N/A

Remarks: 1) Poor
Excellent hole conditions



LEXCO TESTING LTD

DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: January 20, 1977

COMPANY: Lexco Testing Ltd

HOLE NO.: 77-9

APPROX. LOCATION: SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: 4883.1 Lt 35+00

ELEVATION: 1109'

DRILLER: J.L. Lodoen

FROM	TO	LOG	REMARKS
0	6	Till	
6	14	Boulders	
14	16	Pea gravel	
16	18	Boulders	
18	24	Sandstone	
24	25	Coal	
25	27	Brown shale stringers sandstone	
27	29	Coal	
29	30	Sandstone	
30	32	Coal	
32	34	Sandstone	
34	36	Carbonoues shale	
36	43	Brown shale stringers coal	
43	58	Sandstone	
58	61	brown and carbonous shale	
61	74	sandstone	

COMMENTS

WATER HORIZON FT.

LUSCAR LTD.
CORE HOLE LOG

HOLE NO. QU-77-9

35+00 4883.1 Lt.. Jan.20/77

CORE NO.	CORE FOOTAGES DRILLED FROM	TO	TOT.	RECOVERED SEC.	TOT.	GEOLOGICAL DESCRIPTION (LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION)	TRUE DEPTH	LITH. COLUMN 1" = 10' TRUE DEPTH	LITH.	SEC.
1	18	25	6.3			Sandstone;med grained;grayish green; volcanic matrix;med. hard;massive;RQD= 80%;thin coaly laminae;present through-out;fractured in last 3 inches at 80° to core axis.				
2	25	30	4.25							
				.8		Coal;massive;blocky;dull & bright banded med. hard.;abundent pyrite;shaley				
				1.4		Shale;med grey; fissile;fractured; coaly laminae;RQD N 10%				
				.5		Shale;fractured at 80° to core axis;med brown to grey; not as fissile as above member.				
				.75		Coal;blocky; bright;massive;fractured at 80° to core axis; pyritic;calcite infills;brown shaly laminae present				
				.9		Sandstone; med grained;greenish grey massive;fractured at 60° to core axis				
3	30	34	4.1							
				.45		Sandstone;as above				
				1.6		Coal;massive;bright;blocky;pyritic; med.hard				
				1.1		sandstone;as above				
4	34	42	7.6							
				.6		Sandstone as above				
				.4		Coal;massive;blocky;dull;bright banded				
				.55		sandstone as above				
				.4		coal as above				
				2.35		sandstone as above				
				.5		coal as above				
				2.85		sandstne with coal laminae				
5	42	51	6.9							
				1.8		Sandstone;med grained to fine grained med grey with coaly laminae; massive med hard				
				1.5		coal;massive;blocky;shaly;hard;pyritic dull & bright banded				
				4.55		snadstone; as above;becoming finer ground near base; coaly laminae through out.				
6	51	57	1.6			sandstone;med grained; greenish; hard massive;				
TOTALS						÷ X100 = % REC. SEAM ÷ X100 = % TOT. REC. SEAM(S)				

LUSCAR LTD. corehole log

35+00 4883.1 Lt. January 20, 1977

HOLE NO. QU-77-9

CORE NO.	CORE FOOTAGES DRILLED FROM	TO	TOT.	RECOVERED SEC.	TOT.	GEOLOGICAL DESCRIPTION: LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.	TRUE DEPTH
1	18	25	6.3			Sandstone: medium grained; greyish green; volcanic matrix; medium hard, massive; RQD - 80% thin coaly laminae present throughout; fractured in last 3 inches 80° to core axis	
2	25	30	4.5				
				.8		Coal; massive, blocky, dull & bright banded; medium hard; abundant pyrite, shaley	
				1.4		Shale: medium grey; fissile, fractured; coaly, laminae; RQD - 10%	
				.5		Shale; fractured, 80° to core axis; medium brown to grey; not as fissile as above member	
				.75		Coal; blocky, bright, massive, fractured, at 80° to core axis; pyrite, calcite infills, brown, shaley laminae present	
				.9		Sandstone; medium grained, greenish grey, massive fractured, at 60° to core axis	
3	30	34	4.1				
				.45		Sandstone: as above	
				1.6		Coal; massive, bright, blocky; pyritic; medium hard	
				1.1		Sandstone; as above	
4	34	42	7.6				
				.6		Sandstone: as above	
				.4		Coal; massive, blocky, dull, bright banded	
				.55		Sandstone; as above	
				.4		Coal: as above	
	TOTALS					÷ X 100 = % REC. SEAM	
						÷ X 100 = % TOT. REC. SEAM(S)	

LUSCAR LTD. corehole log

HOLE NO. Qu-77-9

CORE NO.	CORE FOOTAGES DRILLED FROM	TO	TOT.	RECOVERED SEC.	TOT.	GEOLOGICAL DESCRIPTION: LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.	TRUE DEPTH
				2.85		Sandstone; with coal laminae	
5	42	51	6.9				
				1.8		Sandstone; medium grained to fine grained, medium grey with coaly laminae, massive, medium hard	
				1.5		Coal; massive, blocky, shaley; hard, pyritic; dull & bright; banded	
				4.55		Sandstone; as above, becoming finer grained near base; coaly laminae, throughout	
6	51	57	1.6			Sandstone; medium grained, greenish, hard, massive	
	TOTALS					÷ X 100 = % REC. SEAM ÷ X 100 = % TOT. REC. SEAM(S)	

CX-QUINSAM 77(3)e.

CANADIAN ARCTIC SURVEY SYSTEMS LTD.

708 - 35 A STREET N.W. CALGARY, ALTA.

RESISTANCE

COMPANY: LEXCO TESTING LTD.

WELL: CORE HOLE DRILLHOLE QUC 77-9

FIELD: QUINSAM

PROVINCE: BRITISH COLUMBIA

67

L10

Lsd. ___ Sec. ___ Twp. ___ Rge. ___ W. ___

Other Services

Permanent Datum: G.L. Elev. ___ Elev. K.B. ___

Log measured from: G.L. ___ ft. above perm. Dat. D.F. ___

Drilling measured from: G.L. G.L. ___

Date	22 Jan. '77			
Run No.	One			
Type Log	Res. Detail			
Depth - Driller	58'			
Depth - Logger	46'			
Bottom logged interval	46'			
Top logged interval	0			
Type fluid in hole	Water			
Salinity, PPM Cl.	N/A			
Density	N/A			
Level	5.5'			
Max. rec. temp. deg. F.				
Operating rig time	.5hr.			
Recorded by	G. Sammuck Jr.			
Witnessed by	S. Gardner			

RUN No.	BORE-HOLE RECORD Bit	From	To	CASING RECORD Size	Wgt.	From	To
1	8¾	Surf.	8'	7"		Surf.	8'
	5⅝	8'	T.D.				

Fold Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

Gamma Ray: Run No. ___ Tool Model No. ___ Diameter ___ Detector Model No. ___ Type ___ Length ___

Resistance: Run No. One; Tool Model No. L103; Diameter 2.6; Type MF; Spacing 1"; Length ___; Horiz. Scale 8.3 Ω/div.; Rem. @ °F N/A

Density: Source Model HDVP; Serial No. 687; Isotopes Cs-137; Strength 125 mC

Caliper

General: Hoist Truck No. ___ Inst. Truck No. ___ Location ___

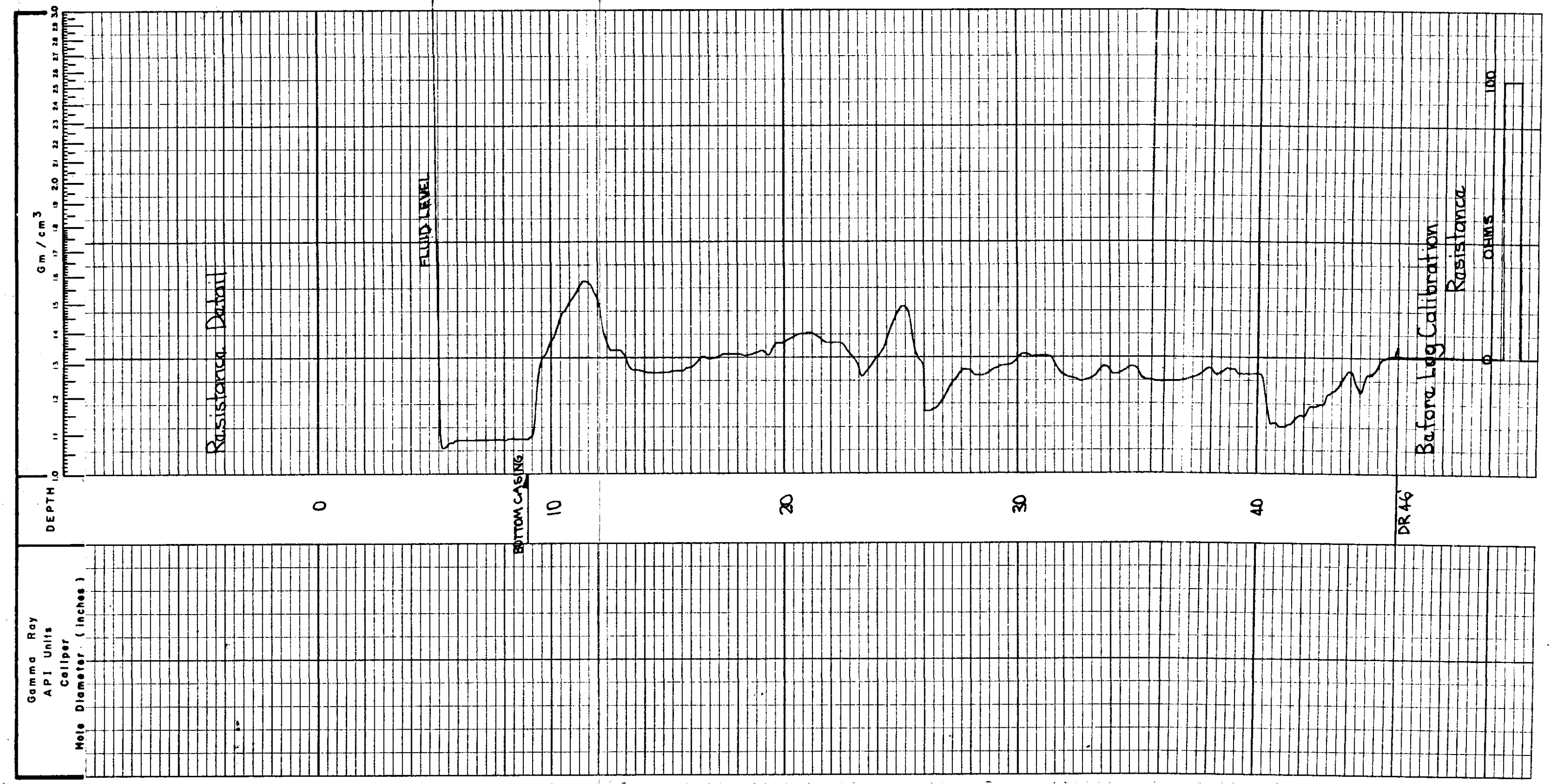
LOGGING DATA

Gamma Ray General: Run No. ___; Depths From 46 To 0; Speed Ft/Min. 5; T.C. Sec. ___; Sens. Settings ___; Zero Div. L or R ___

Density General: API G.R. Units per Log Div. ___; T.C. Sec. ___; Sens. Settings ___; Zero Div. L or R ___

Reference Literature: N/A

Remarks: D. Brown
Good hole, heavy mud



P.E. 411/5821 32/5/2

CANADIAN ARCTIC SURVEY SYSTEMS LTD.
708 - 39 A STREET N.W. CALGARY, ALTA.

GAMMA DENSITY & RESISTANCE

COMPANY: LEXCO TESTING LTD.
WELL: PRELIMINARY LIN. 4 & 8 & 3 / 4
WELL: DRILL HOLE G.U. 37-9
FIELD: GUNSHAM 37-00
PROVINCE: BRITISH COLUMBIA

(L-11) 79

Date: 6 Lu
Sec. Twp. Rge. W.
Elev. 6123.9
K.B. D.F. G.L.

Permanent Datum: G.L.
Log measured from: G.L. 16.00 ft. above perm. Dat.
Drilling measured from: G.L.

Other Services: Gamma Ray, Density, Resistance

Run No. 1
Max. rec. temp. deg. F
Equipment location
Recorded by: G. Semchuk
Witnessed by: G. Lindsay

BIT RECORD				CASING RECORD			
No.	Size	From	To	Size	Wt.	From	To
1	6 3/4 Short	0	30	3		0	30

Fold Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

Gamma Ray		Run No.	Resistance	Density	Density
Run No.	One	Tool Model No.	Two	Two	Three
Tool Model No.	WR	Diameter	L-103	L-103	L-103
Diameter	1 3/4	Type	2 7/8	2 7/8	2 7/8
Detector Model No	Nal	Spacing	AE	F	AE
Type	Scint.	Length		13"	
Length	30	Horiz. Scale	1.0		1.0"
		Source Model	25 Ω/div.		6.6 g/cm³/div
		Source Strength	N/A		N/A
		Serial No.		HDVP	
		Isotope		687	
		Strength		Cs 137	
				125 mC	

General

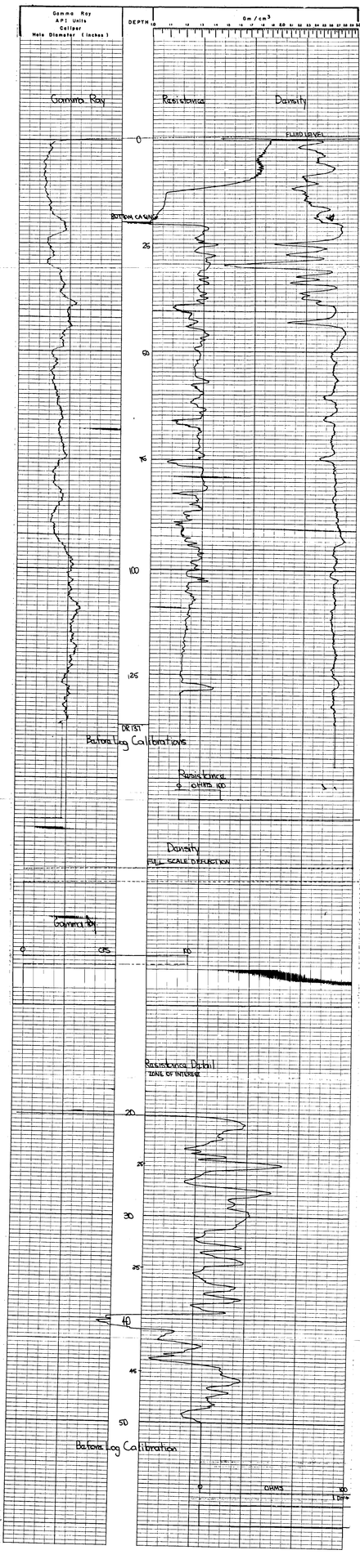
Hoist Truck No.	
Inst. Truck No.	
Location	Campbell River

LOGGING DATA

General				Gamma Ray				Density			
Run No.	Depths From	Depths To	Speed Ft/Min.	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
1&2	13.7	0	10	4	100	1R	12.5	1	1K	
3	90	20	10							

References: Literature: N/A

Remarks: Bottom
Excellent hole conditions



ex-Allison 71(3)e

CANADIAN ARCTIC SURVEY SYSTEMS LTD.

GAMMA DENSITY & RESISTANCE

708 - 35 A STREET N.W. CALGARY, ALTA.

COMPANY LEXCO TESTING LTD.
WELL FINAL
FIELD DRILLHOLE SU 71-9
PROVINCE BRITISH COLUMBIA

Lsd. Sec. Twp. Rge. W.
Permanent Datum G.L.
Log Measured from G.L.
Drilling Measured from G.L.
Elev. K.B. Elev. D.F. Elev. G.L.
ft. above perm. Dat.

Other Services

Fold Here

This Heading and Log Conforms to API RP 33

Run No.	Date	Depth - Driller	Depth - Logger	Bottom Logged Interval	Top Log Interval	Type Fluid in Hole	Salinity, PPM Cl.	Density	Level	Max. rec. temp. deg. F.	Equipment Location	Recorded By	Witnessed By
One	30 Jan 71	192	192	192	Surface	Water	N/A	N/A	Full		Nanaimo	J. Telfer	S. Sanchuck
Two													

BIT RECORD No.	Bit	From	To	Size
1	7 7/8	0	192	7 7/8

BORE-HOLE RECORD	Wgt.	From	To
	Sch.	0	20

CASING RECORD	Size
	5

EQUIPMENT DATA

Gamma Ray	One	Two
Run No.	One	One
Tool Model No.	WR	L-103
Diameter	1 3/8	1 3/8
Detector Model No.	Na I	ME
Type	Scint	F
Length	1	15

Resistance	One	Two
Run No.	One	One
Tool Model No.	L-103	L-103
Diameter	2 1/8	2 1/8
Type	ME	F
Spacing		15
Length	5'	
Horiz. Scale	20 Ω/div.	
Rm @ °F	N/A	

Density	One	Two
Run No.	One	One
Tool Model No.	L-103	L-103
Diameter	2 1/8	2 1/8
Type	F	F
Spacing		15
Source Model	H.O.V.P.	
Serial No.	667	
Isotope	Cs 137	
Strength	125 mC	

Caliper

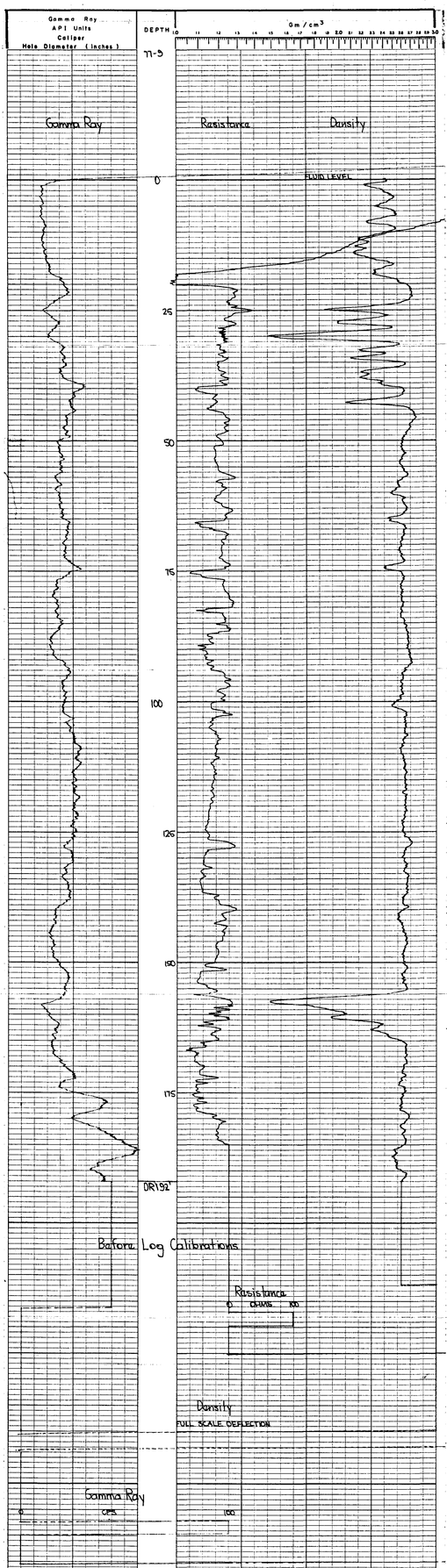
General	
Hoist Truck No.	1
Inst. Truck No.	1
Location	Campbell River

LOGGING DATA

General				Gamma Ray				Density			
Run No.	Depths From	Depths To	Speed Ft/Min.	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
1	192	0	10	1	100	16	12.5	1	11	

Reference Literature: N/A

Remarks: Logging
Excellent hole conditions



LEXCO TESTING LTD

DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: Jan 19, 77

COMPANY: Lexco

HOLE NO.: QU-77-10

APPROX. LOCATION: SEC. TWP. RGE. W.

SURVEYED LOCATION: 40+00 5660 Lt

ELEVATION: 1140.4'

DRILLER: D. Broen

FROM	TO	LOG	REMARKS
0	10	Till	
10	13	sandstone	
13	15	carb. shale	
15	97	brown ss	
97	220	grey ss	
220	226	brown shale	
226	228	coal	
228	243	carb shale	
243	275	brown shale	
275	276	coal	
276	280	carb shale	
280	295	coal	
295	312	white ss	
312	323	bisalt	

COMMENTS

WATER HORIZON FT.

ex-Gunsam 77 (3)C.

CANADIAN ARCTIC SURVEY SYSTEMS LTD.
708 - 35 A STREET N.W. CALGARY - ALTA.

GAMMA DENSITY & RESISTANCE

COMPANY: TEXCO TESTING LTD.
WELL: RE-LOG (COMPLETION OF SUITE)
FIELD: GUNSAM
PROVINCE: BRITISH COLUMBIA

Lsd. Sec. Twp. Rge. W
Permanent Datum: G.L. Elev.
Log measured from: G.L. ft. above perm. Dat.
Drilling measured from: G.L.
Elev. K.B. D.F. G.L.

Other Services

Date: 20 Dec 77
Type Log: Resistance Detail
Depth - Driller: 300'
Depth - Logger: 300'
Bottom Log Interval: 300'
Top Log Interval: 225'
Type fluid in hole: Water
Salinity, PPM Cl.: N/A
Density: N/A
Level: N/A
Max. rec. temp. deg. F.
Operating rig time:
Recorded by: S. Gerchuck
Witnessed by: G. Gerchuck

BORE-HOLE RECORD

RUN No.	Bit	From	To
1	6¼"	Surf.	300'
2	8"		T.D.

CASING RECORD

Size	Wgt.	From	To
8"		Surf.	8'

Fold Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

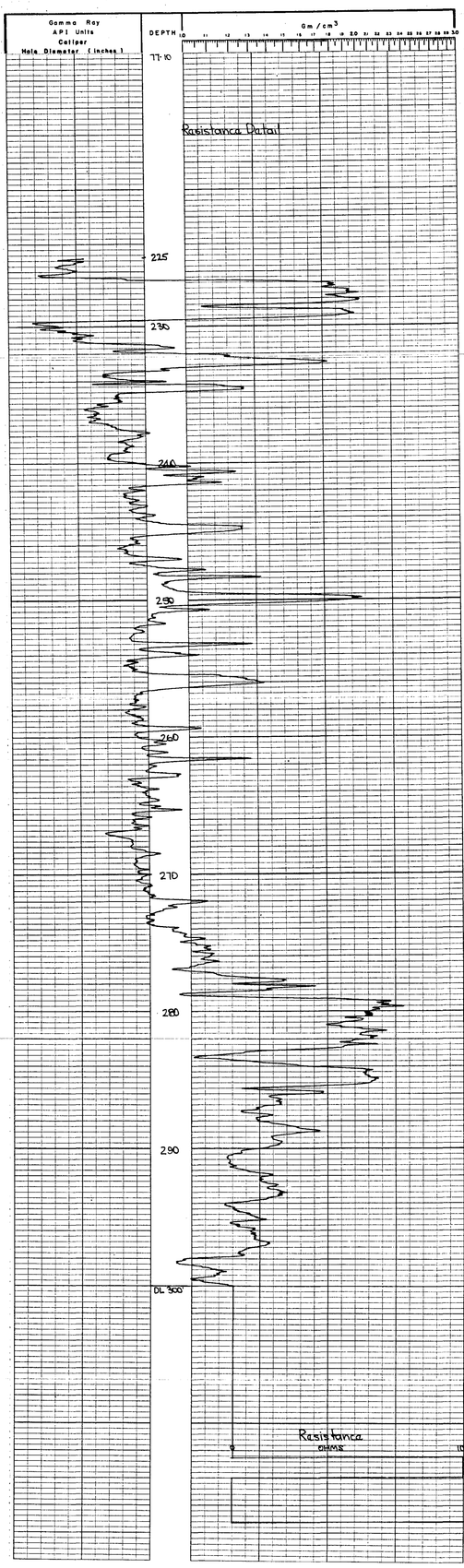
Gamma Ray				Resistance	Density	Caliper
Run No.				Run No.	Non	
Tool Model No.				Tool Model No.	L-103	
Diameter				Diameter	2⅛	
Detector Model No.				Type	ME	
Type				Spacing		
Length				Length	5"	
General				Horiz. Scale	5.88/div.	
Hoist Truck No.				Rm @ °F	N/A	
Inst. Truck No.				Source Model		HDVP
Location				Serial No.		687
				Isotope		Cs 137
				Strength		125 mC

LOGGING DATA

General				Gamma Ray				Density		
Depths										
Run No.	From	To	Speed Ft/Min.	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
1	300'	225'	10							

Reference Literature: N/A

Remarks: 1) Brown
Excellent hole conditions



Canadian Arctic Survey Systems Ltd.
708 - 324 Street N.W. Calgary, Alta.

GAMMA DENSITY & RESISTANCE

Company: LEXCO TESTING LTD.
Well: DRILLHOLE GW 77-10
Field: GUNSNAR 56-F-06
Province: BRITISH COLUMBIA
Date: 5-6-6-11
Run No. 67 (L14)
Drilling Service

Fold Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

Gamma Ray		Resistance		Density		Caliper
Run No.	Two	Run No.	One	Run No.	One	
Tool Model No.	WR	Tool Model No.	L-105	Tool Model No.	L-103	
Diameter	1¾	Diameter	2¾	Diameter	2¾	
Detector Model No	No 1	Type	ME	Type	F	
Type	Scint	Spacing		Spacing	15	
Length	3.0					
		Length	10'	Horiz. Scale	20 div/div	
		Horiz. Scale	N/A			

General		Source	
Hoist Truck No.	1	Source Model	HDVP
Inst. Truck No.	1	Serial No.	681
Location	Campbell River	Isotope	Cs 137
		Strength	125 mC

LOGGING DATA

General				Gamma Ray				Density			
Run No.	Depths From	Depths To	Speed Ft/Min	T.C. Sec.	Sens. Settings	Zero Div. L or R	API GR Units per Log Div.	T.C. Sec.	Sens. Settings	Zero Div. L or R
1	32.4	0	10	4	100	1R	12.5	1	1K	

References Literature: N/A

Remarks: 1) Brown
Excellent hole conditions.

Gamma Ray
API Units
Caliper
Hole Diameter (Inches)

DEPTH

Gm/cm³

Gamma Ray | Resistance | Density

BOTTOM CASING

FLUID LEVEL

RADIO TELEPHONE INTERFERENCE

DR 515

Before Log Calibrations

Resistance
OHMS 100

Density
FULL SCALE DEFLECTION

Gamma Ray
0 100

LEXCO TESTING LTD
DRILLHOLE REPORT

)AL FIELD: Campbell River DATE: Jan 22, 1977

COMPANY: Lexco Testing

HOLE NO.: 45+00 6000 Lt QU - 77 - 11

APPROX. LOCATION: _____ SEC. ____ TWP. ____ RGE. ____ W. ____

SURVEYED LOCATION: 45+00 5995 Lt

ELEVATION: 1135'

DRILLER: R. Bendfeld

FROM	TO	LOG	REMARKS
0	148	grey snadstone	
148	153.5	coal brown shale partings	
153.5	179	grey silty shale	
179	183.4	coal brown shale stringers	
183.4	198	grey siltstone	
198	215	basalt	

COMMENTS No geolograph on rig #07 Approx. estimation on formation structures to nearest footages

WATER HORIZON approx. 60 Ft FT. _____

CK - QUINSAM 77 (3) e.

CANADIAN ARCTIC SURVEY SYSTEMS LTD.

GAMMA DENSITY & RESISTANCE

708 - 35 A STREET N.W. CALGARY, ALTA.

COMPANY LEXCO TESTING LTD.

5995 Lt.

WELL DRILLHOLE QU 45 ~~5994~~ 5995 Lt.

FIELD QUINSAM GU-77-11

PROVINCE BRITISH COLUMBIA

67 (L15)

Lsd. Sec. Twp. Rge. W.

Other Services

Permanent Datum G.L. Elev. 1135.2 Elev. K.B.

Log measured from G.L. ft. above perm. Dat. D.F.

Drilling measured from G.L. G.L.

Date	21 Jan. '77		
Run No.	One	Two	
Type Log	Gamma Ray	Density	Res.
Depth - Driller	203'		
Depth - Logger	202'		
Bottom logged interval	202'		
Top logged interval	0		
Type fluid in hole	Water		
Salinity, PPM Cl.	N/A		
Density	N/A		
Level	0		
Max. rec. temp. deg. F.			
Operating rig time	2.0 hrs.		
Recorded by	G. Somchuck Jr.		
Witnessed by	S. Gardner		

RUN No.	BIT	BORE-HOLE RECORD From	To	CASING RECORD Size	Wgt.	From	To
1	6½	Surf.	T.D.				

Fold here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

Gamma Ray: Run No. One; Truck Model No. Van; Diameter 2 1/2"; Detector Model No. Na I; Type Scintil.; Length 3'

Resistance: Run No. Two; Truck Model No. Van; Diameter 2 1/2"; Detector Model No. ME; Type E; Spacing 16"; Length 35.5'; Horiz. Scale or Gain 1/div; Sensitivity Model N/A

Density: Run No. Two; Truck Model No. Van; Diameter 2 1/2"; Detector Model No. ME; Type E; Spacing 16"; Length 35.5'; Horiz. Scale or Gain 1/div; Sensitivity Model N/A

Caliper: Run No. Two; Truck Model No. Van; Diameter 2 1/2"; Detector Model No. ME; Type E; Spacing 16"; Length 35.5'; Horiz. Scale or Gain 1/div; Sensitivity Model N/A

General: Mast Truck No. 1; Inst. Truck No. 1; Location Campbell River

LOGGING DATA

Gamma Ray: Speed F/Min. 10; T.C. Sec. 4; Sens. Settings 100; Range Div. L or R 1R

API GR Units per Log Div. 12.5

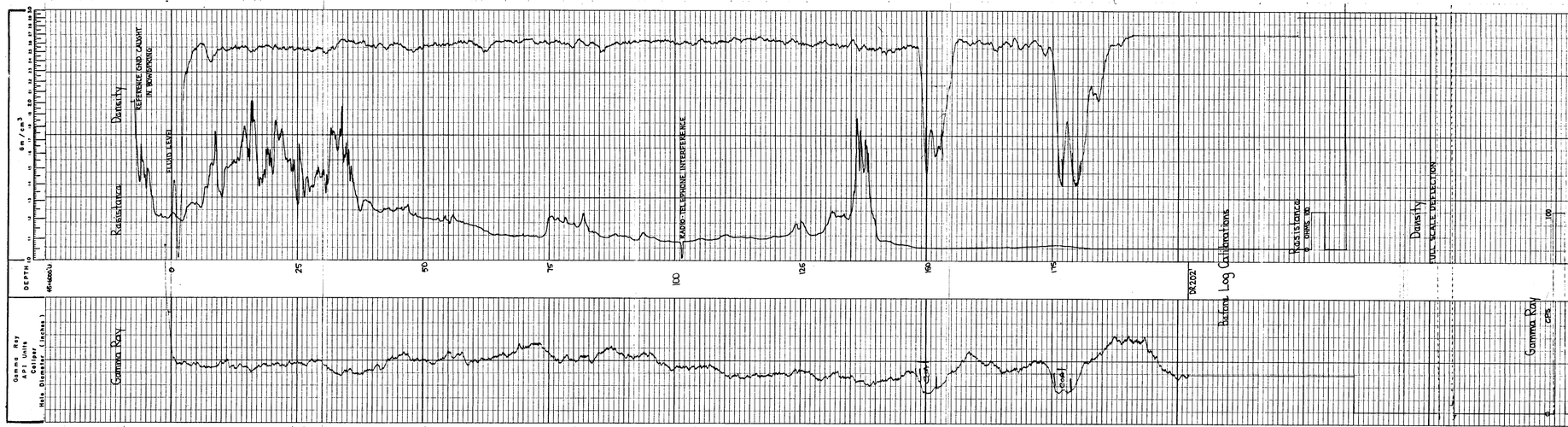
Resistance: Speed F/Min. 10; T.C. Sec. 4; Sens. Settings 1K; Range Div. L or R 5L

Density: Speed F/Min. 10; T.C. Sec. 4; Sens. Settings 1K; Range Div. L or R 5L

Run No. 1; Depths From 0; To 202'

Reference Litesides N/A

Remarks: Borehole Excellent hole conditions



LEXCO TESTING LTD.

DRILL HOLE REPORT

COALFIELD: Campbell River DATE: Jan 23-77

COMPANY: Lexco Testing

HOLE NO.: QU-77-12

APPROX. LOCATION: SEC. TWP. RGE. W.

SURVEYED LOCATION: 30+00 6320.6 Lt

ELEVATION: ~~1174.8~~ 1145 Dec 2/77

DRILLER: J.L Lodoen

FROM	TO	LOG	REMARKS
0	4	till	
4	27	sandstone	
27	32	brown and carbonaceous shale traces of coal	
32	48	sandstone	
48	52	brown shale	
52	82	sandstone	
82	85	coal partings of carbonaceous shale	
85	87	grey shale stringers of sandstone	
87	117	siltstne	
117	119	brown shale	
119	259	siltstone	
259	263	coal	
263	272	brown shale	
272	282	brown and carbonaceous shale	
282	296	coal partings of brown shale	
296	310	brown shale	
310	326	green sandstone	
326	331	basalt	

COMMENTS

WATER HORIZON FT.

Gr. Anderson 77/9/16

CANADIAN ARCTIC SURVEY SYSTEMS LTD.
708 - 334 8th STREET N.W. CALGARY, ALTA.

GAMMA DENSITY & RESISTANCE

COMPANY LEGCO MINING LTD.
WELL DRILLHOLE 00-77-2
FIELD QUINNAM 3m = 0.0
PROVINCE NORTHWEST TERRITORIES

6320 Lake Lt.

Other Services

Permanent Datum G.L.
Log Measured From G.L.
Drilling Measured From G.L.

Elev. 1155.5'
Elev. K.B. G.L.

Date 22 Jan. 77
Run No. One
Depth-Driller 232'
Depth-Logger 232'
Bottom Logged Interval 232'
Top Logged Interval Surface
Casing - Driller N/A
Casing - Logger N/A
Bit Size N/A
Type Fluid in Hole Dry
Density Viscosity N/A
Max. rec. temp. deg. F
Estimated cement top N/A
Equipment No. L-108
Location Campbell Racer

Run No.	Bottom Log Interval	Top Log Interval	Casing Size	Type Fluid in Hole	Density	Viscosity	Max. rec. temp. deg. F	Equipment No.	Location
One	232'	Surface	N/A	Dry	N/A	N/A	N/A	L-108	Campbell Racer

Fold Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

Gamma Ray		Resistance	Density	Caliper
Run No.	One	Run No.	One	
Tool Model No.	L-108	Tool Model No.	L-108	L-108
Diameter	2⅛"	Diameter	2⅛"	2⅛"
Detector Model No.	CP-514	Type Spacing	ME	F
Type	Scint.			15"
Length		Length	1'	
		Horiz. Scale	16.2 ft/div	
		Rm @ RF	N/A	
		Source Model		HOVP
		Serial No.		687
		Isotope		Cs .137
		Strength		125 mC

General

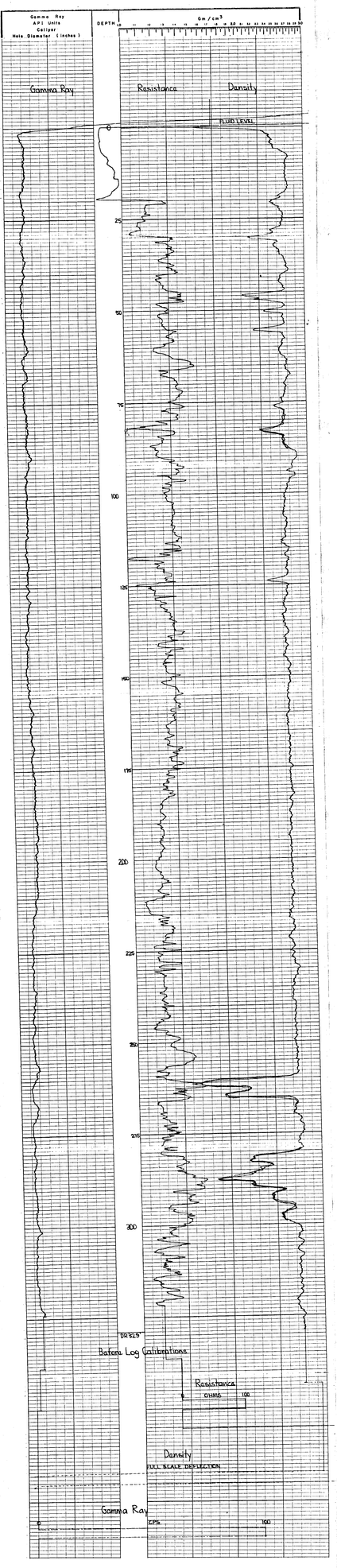
Hole: Track No.	
Inst. Track No.	
Location	Campbell Racer

LOGGING DATA

Gamma Ray								Density			
General											
Run No.	Depth From	Depth To	Speed Ft/Min	T.C. Sec.	Sens. Settings	API G.R. Units per Log Div.	T.C. Sec.	Sens. Settings	Zero Div. L or R	
1	229'	0	10	4	100	12.5	1	1K	GL	

Reference Literature: N/A

Remarks: R. Lipkan
Excellent hole conditions.



LEXCO TESTING LTD

DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: Jan 25, 1977

COMPANY: Lexco Testing

HOLE NO.: QU-77-13

APPROX. LOCATION: _____ SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: 40+00 2905 Lt

ELEVATION: 1043.4'

DRILLER: R. Bendfeld

FROM	TO	LOG	REMARKS
0	27	Grey sandstne	
27	164	greg siltstne	
164	181	coal brown shale partings	
181	220	hard white sandstone	

COMMENTS _____

WATER HORIZON 60 FT. _____

Ex-Quinsam 77 G.C.

CANADIAN ARCTIC SURVEY SYSTEMS LTD.
708 - 39 A STREET N.W. CALGARY, ALTA.

GAMMA DENSITY & RESISTANCE

COMPANY LEACO TESTING LTD.
WELL DRILLHOLE 00-77-13
FIELD QUINSAM
PROVINCE BRITISH COLUMBIA

29.05.77
Vancouver

Lsd. Sec. Twp. Rge. W.
Other Services

Permanent Datum G.L.
Log measured from G.L.
Drilling measured from G.L.
Elev. K.B. —
D.F. —
G.L. —
ft. above perm. Dat.

Date 26 Jan. 77
Type Fluid Dome
Dept.-Driller 220
Depth-Logger 220
Bottom logged interval 220
Top logged interval 0
Salinity PPM Cl Water
Density N/A
Level full
Max. rec. temp. deg. F. 60
Operating rig time
Recorded by E. Sanchuk
Witnessed by E. Sanchuk

BORE-HOLE RECORD

Bit No.	From	To	Size
1	0	220	4 3/8"
Surf.		12	
I.D.		12	

CASING RECORD

Wgt.	Size	From	To
	1.25 NPS		

Fold Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

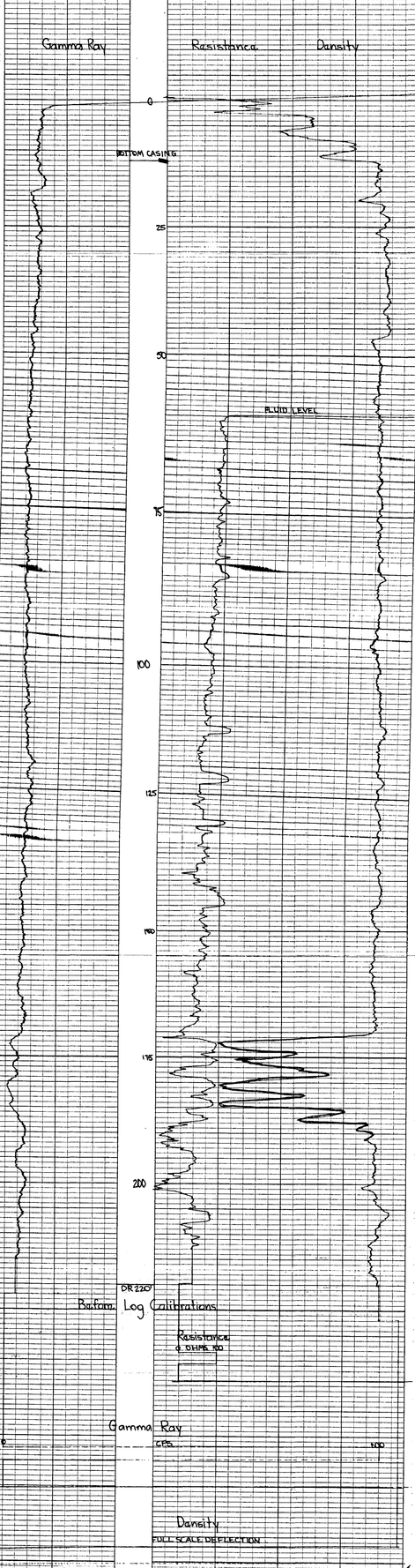
Gamma Ray				Resistance	Density	Caliper
Run No.	One			One	One	
Tool Model No.	L-103			L-103	L-103	
Diameter	2 1/2"			2 1/2"	2 1/2"	
Detector Model No.	CP-514			ME	E	
Type	Scint.				15	
Length	1.5'					
				Length 1'		
				Horiz. Scale 33.3 A/div		
				Res. @ °F N/A		
Hoist Truck No. 1				Source Model	H.D.V.P.	
Inst. Truck No. 1				Serial No.	687	
Location Campbell River				Isotope	Cs 137	
				Strength	125 mC	

LOGGING DATA

General					Gamma Ray				Density	
Run No.	Depths From	Depths To	Speed Ft/Min	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
1	220	0	10	4	100	1R	6.6	1	1K	.5L

Reference Literature: N/A

Remarks: R. Bandfield
Excellent hole conditions.



LEXCO TESTING LTD
DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: Feb 8, 1977

COMPANY: Lexco Testing

HOLE NO.: QU-77-14

APPROX. LOCATION: SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: 45+00 5500 Lt

ELEVATION: 1127'

DRILLER: H. Vincett

FROM	TO	LOG	REMARKS
0	104	Gray sandstone	
104	108	brown shale	
108	109	coal	
109	114	red shale	
114	132	brown shale	
132	135	carbonasous shale	
135	140	brown shale	
140	180	basalt	

COMMENTS

WATER HORIZON FT.

Ex Aquitain 7164

CANADIAN ARCTIC SURVEY SYSTEMS LTD.

GAMMA DENSITY & RESISTANCE

FOR - 35th STREET N.W. CALGARY, ALTA.

COMPANY: LEACO TESTING LTD.

WELL: RE-1106 — DRILLHOLE GULTICH — 65°00' LAT. — QUINSAM — 55°00'

FIELD: QUINSAM

PROVINCE: BRITISH COLUMBIA

67 (L18)

Lsd. Sec. Twp. Rge. W

Permanent Datum: G.L.

Log measured from: G.L.

Drilling measured from: G.L.

Elev. K.B. — D.F. — G.L.

Other Services

Date	Aug. 7/76	Date	Aug. 7/76
Run No.	1	Run No.	1
Depth-Driller	216	Depth-Driller	216
Depth-Logger	216	Depth-Logger	216
Bottom Log Interval	216	Bottom Log Interval	216
Top Log Interval	Surface	Top Log Interval	Surface
Type Fluid in Hole	Water	Type Fluid in Hole	Water
Salinity, P.P.M. Cl.		Salinity, P.P.M. Cl.	
Density	N/A	Density	N/A
Level	Full	Level	Full
Max. rec. temp. deg. F.		Max. rec. temp. deg. F.	
Equipment No.	6-S-10hr	Equipment No.	6-S-10hr
Location	Schomberg	Location	Schomberg
Recorded by		Recorded by	
Witnessed by		Witnessed by	

BORE-HOLE RECORD

Bit No.	From	To
4 3/4	Surf.	TD

CASING RECORD

Size	From	To
5	N/A	Surf.

Elev. 211 from TT

Rge. 5 W

Permanent Datum: Sea Level

Log measured from: G.L.

Drilling measured from: G.L.

Elev. 211 ft. above perm. Datum

Fold Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

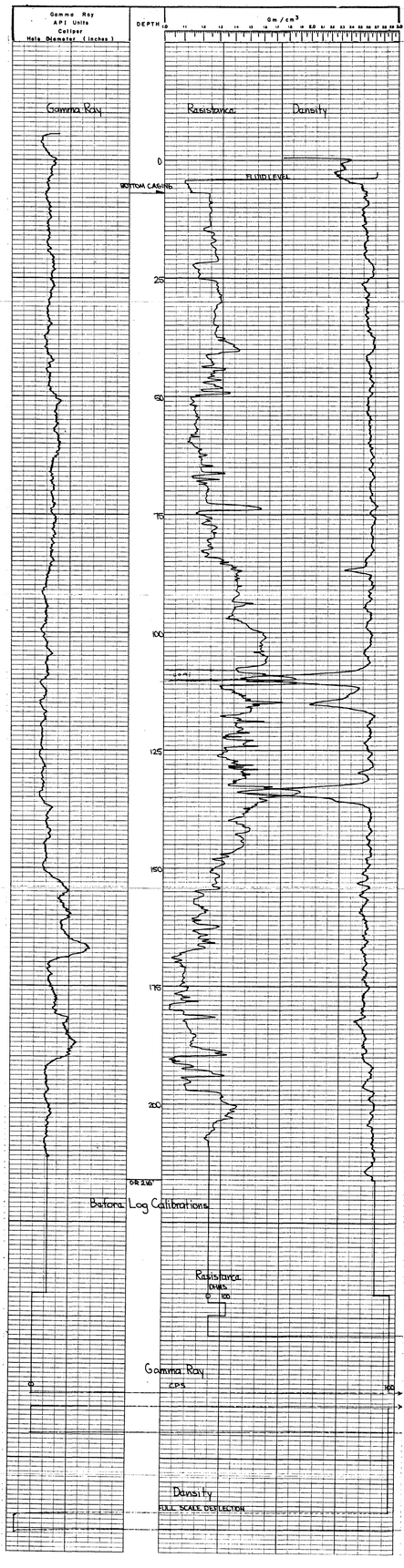
Gamma Ray		Resistance		Density		Caliper
Run No.	One	Run No.	One			
Tool Model No.	L-103	Tool Model No.	L-103	L-103		
Diameter	2 1/8	Diameter	2 1/8	2 1/8		
Detector Model No.	CP-514	Type	ME	F		
Type	Scint.	Spacing		13		
Length	1.5					
		Length	.5			
		Horiz. Scale	66 ft/div			
		Rm @ °F	N/A			
General		Source Model		HDVP		
Hoist Truck No.	1	Serial No.		687		
Inst. Truck No.	1	Isotope		Cs 137		
Location	Campbell River	Strength		125 mC		

LOGGING DATA

General				Gamma Ray						Density			
Run No.	Depths From	Depths To	Speed Ft./Min.	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
1	216	0	40	4	100	2R	5 A	1	1K	5L

Reference Litestrure: N/A

Remarks: H. Vincent, D. Brown
Drilled to 180 ft. by H. Vincent, deepened by D. Brown for lower formation correlation



ex-Quinsam 72/8/6

CANADIAN ARCTIC SURVEY SYSTEMS LTD.

708 - 35 A STREET N.W. CALGARY, ALTA.

GAMMA DENSITY & RESISTANCE

COMPANY LEXCO TESTING LTD.

WELL DRILLHOLE QU 46500 5500 L 4/9

FIELD QUINSAM QU-72-14

PROVINCE BRITISH COLUMBIA

Lsd ___ Sec ___ Twp ___ Rge ___ W ___

Other Services

Permanent Datum G.L. Elev. 442.7

Log measured from G.L. ft. above perm. Dat.

Drilling measured from G.L. Elev. K.B. ___ D.F. ___ G.L. ___

Bore No. 8

Type Log Resistance Density

Depth - Driller 180

Depth - Logger 174

Bottom Logged Interval 0

Top Logged Interval 0

Type Fluid in Hole Water

Salinity, PPM Cl. N/A

Density N/A

Level Full

Max. rec. temp. deg. F. 50

Operating rig time

Recorded by S. Lohr

Witnessed by S. Sandhage

BORE-HOLE RECORD

Bit No.	From	To
1	0	174

Size 5"

CASING RECORD

Wgt.	From	To
	Surf.	7

Fold Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

Gamma Ray			Resistance	Density	Caliper
Run No.	One	Run No.	One	One	
Tool Model No.	L-103	Tool Model No.	L-103	L-103	
Diameter	2.6	Diameter	2.6	2.6	
Detector Model No	CP-516	Type	ME	E	
Type	Lit (Scint)	Spacing		13"	
Length	1.5	Length	5"		
		Horiz. Scale	50 n/div.		
		Rm @ °F	N/A		
		Source Model		HDVP	
		Serial No.		687	
		Isotope		Cs 137	
		Strength		125 mC	

General

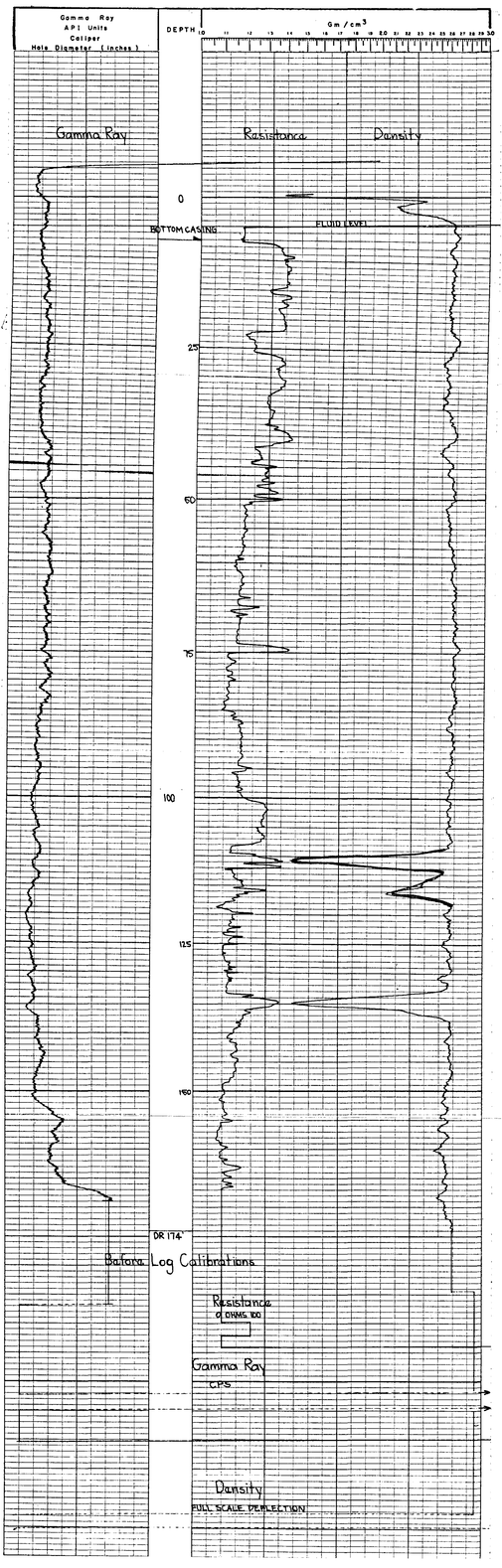
Hoist Truck No.	1
Inst. Truck No.	1
Location	Campbell River

LOGGING DATA

General				Gamma Ray					Density			
Run No.	Depths From	Depths To	Speed Ft/Min.	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		
1	174'	0	10	4	100	1R	6.4	1	1K	.5L		

Reference Literature: N/A

Remarks: H. Vincatt
Excellent hole conditions



LEXCO TESTING LTD

DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: Feb 7, 1977

COMPANY: Lexco Testing Ltd.

HOLE NO.: QU-77-15

APPROX. LOCATION: SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: 3936- 6049.4 Lt

ELEVATION: 1141.2

DRILLER: JL LODOEN

FROM	TO	LOG	REMARKS
0	7	Boulders	
7	72	sandstone	
72	73	brown shale	
73	90	sandstone and stringers of shale	
90	110	siltstone	
110	217	sandstone	
217	218	brown shale	
218	224	coal	
224	256	dark brown shale stringers of sandstone	
256	266	coal partings of dark brown shale	
266	293	dark brown shale	
293	304	bisalt	

COMMENTS

WATER HORIZON FT.

ex-QUINSAM 77 Core.

CANADIAN ARCTIC SURVEY SYSTEMS LTD.

GAMMA DENSITY & RESISTANCE

708 - 35 A STREET N.W. CALGARY, ALTA.

COMPANY LEXCO TESTING LTD.

6049.4 ft

WELL DRILLHOLE QU-77-15

FIELD QUINSAM 39+36

67

PROVINCE BRITISH COLUMBIA

L-20

Lsd.	Sec.	Twp.	Rge.	W.

Other Devices

Permanent Datum G.L. Elev. 1141.2 Elev. K.B.

Log measured from G.L. ft. above perm. Dat. D.F.

Drilling measured from G.L. G.L.

Date	8 Feb 77		
Run No.	One		
Type Log	Nuclear	Res.	
Depth - Driller	246'		
Depth - Logger	251'		
Bottom logged interval	251'		
Top logged interval	G.		
Type fluid in hole	Water		
Salinity, PPM Cl.	N/A		
Density	N/A		
Level	full		
Max. rec. temp. deg. F.			
Operating rig time			
Recorded by	Lowe		
Witnessed by	G. Sandnack Jr		
	S. Sandner		

RUN No.	BIT Size	BORE-HOLE RECORD From	To	CASING RECORD Size	Wgt.	From	To
1	8 3/4	Surf.	12	5"		Surf.	12'
	6	12	T.D.				

Fold here

This heading and Log Conform to API RP 33

COMPANY DATA

Company	Lexco
Well	DRILLHOLE QU-77-15
Field	QUINSAM 39+36
County	
State	B.C.
Other Services	N/E
Location	
Elev. K.B.	
Elev. D.F.	
Elev. G.L.	15'
Date	8 Feb 77
Run No.	One
Depth Driller	246'
Depth Logger	251'
Bottom Log Interval	251'
Top Log Interval	G.
Casing Driller	5" @ 12'
Casing Logger	N/A
Bit Size	8 3/4
Type Fluid in Hole	Water
Dens. Visc.	N/A
pH	
Fluid Loss	
Source of Sample	
Rm @ Meas. Temp.	
Rmf @ Meas. Temp.	
Rmc @ Meas. Temp.	
Source Rmf / Rmc	
Rm @ BHT	
Time Since Circ.	
Time on Bottom	
Max. Rec. Temp. deg. F.	
Equip. Location	Campbell River
Recorded by	Lowe
Witnessed by	G. Sandnack Jr, S. Sandner

Run No.	Service Order	Depth Driller	Depth Logger	Bottom Log Int.	Top Log Int.	Casing Driller	Casing Logger	Bit Size	Type Fluid in Hole	Dens. Visc.	pH	Fluid Loss	Source of Sample	Rm @ Meas. Temp.	Rmf @ Meas. Temp.	Rmc @ Meas. Temp.	Source Rmf / Rmc	Rm @ BHT	Time Since Circ.	Time on Bottom	Max. Rec. Temp. deg. F.	Equip. Location	Recorded by	Witnessed by
1		246'	251'	251'	G.	5" @ 12'	N/A	8 3/4	Water	N/A												Campbell River	Lowe	G. Sandnack Jr, S. Sandner

Equipment Data

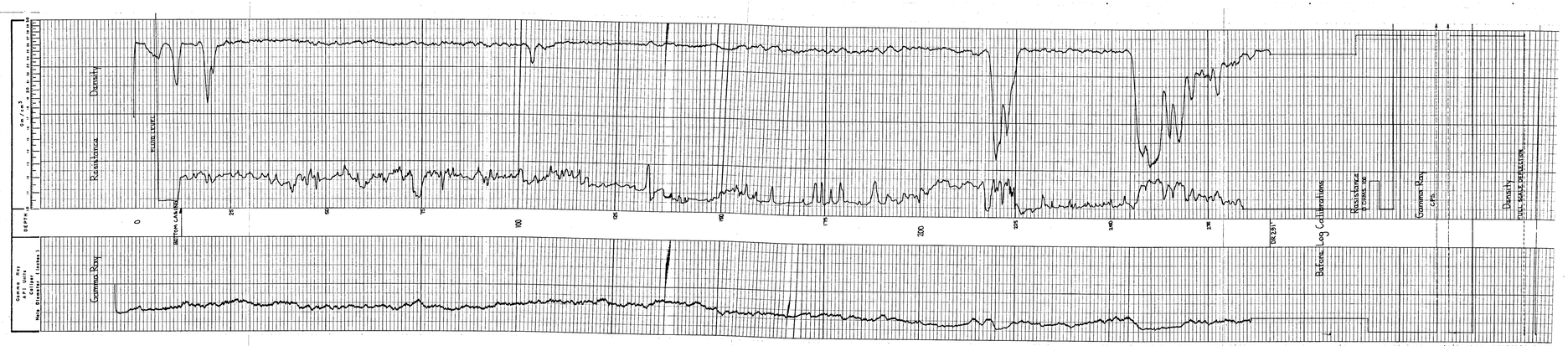
Run No.	Tool No.	Detector Model No.	Detector Serial No.	Length	Hole Clock No.	Amplifier No.	Serial No.	Location	Calibration Date	Source Type	Source Strength	Source Serial No.	Calibration Date	Source Type	Source Strength	Source Serial No.	Calibration Date
1	N/A	N/A	N/E	15'						0.5 X.R.P.	0.137 Ra.	10 mC					

Fluid Data

Run No.	Fluid Type	Fluid Level	Dens.	Visc.	pH	Fluid Loss	Source of Sample	Rm @ Meas. Temp.	Rmf @ Meas. Temp.	Rmc @ Meas. Temp.	Source Rmf / Rmc	Rm @ BHT	Time Since Circ.	Time on Bottom	Max. Rec. Temp. deg. F.
1	Water	full	N/A												

Remarks, Unusual N/A

Remarks Logged with Lexco Scintillation Probe, Calibrated Rock-Equivalent.



LEXCO TESTING LTD
DRILLHOLE REPORT

OAL FIELD: ~~Campbell River~~ DATE: Feb 9, 1977

COMPANY: Lexco Testing

HOLE NO.: QU-77-16

APPROX. LOCATION: SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: 45+00 7543 Lt.

ELEVATION: 1146

DRILLER: H. Vincett

FROM	TO	LOG	REMARKS
0	3	Till	
3	102	gray sandstone	
102	106	brown shale	
106	109	coal	
109	167	brown shale	
167	172	coal with shale partings	
172	182	coal	
182	206	brown shale	
206	212	gray sandstone	
212	218	green sandstone	
218	240	bisalt	

COMMENTS

WATER HORIZON FT.

CANADIAN ARCTIC SURVEY SYSTEMS LTD.

700 - 35 A STREET N.W. CALGARY - ALTA.

GAMMA DENSITY & RESISTANCE

COMPANY LEXCO TESTING LTD.

WELL DRILL-HOLE DH-MS-00-77-16

FIELD QUINSAM

PROVINCE BRITISH COLUMBIA

Permanent Datum G.L. Elev. 0.0
Log measured from G.L. ft. above perm. Dat.
Drilling Measured from G.L.

Date	28 Feb. 77
Run No.	One
Depth - Driller	240'
Depth - Logger	237'
Bottom logged interval	234'
Top logged interval	Surf.
Type of fluid in hole	Water
Salinity, PPM Cl	N/A
Level	Full
Max. rec. temp. deg. F	104°F
Estimated cement top	N/A
Witnessed by	S. Sandhouse

RUN	BIT	CASING RECORD		
		Size	Wgt.	Depth
1	8 3/4"	8 5/8"	24#	24'
Surf.	T.D.	5½"		Surf.

Log No. 67

Permanent Datum: G.L.

Log measured from: G.L.

Drilling Measured from: G.L.

Elev. K.B. O.F. G.L.

Formation Density Log L-41

Field Notes

Fold Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

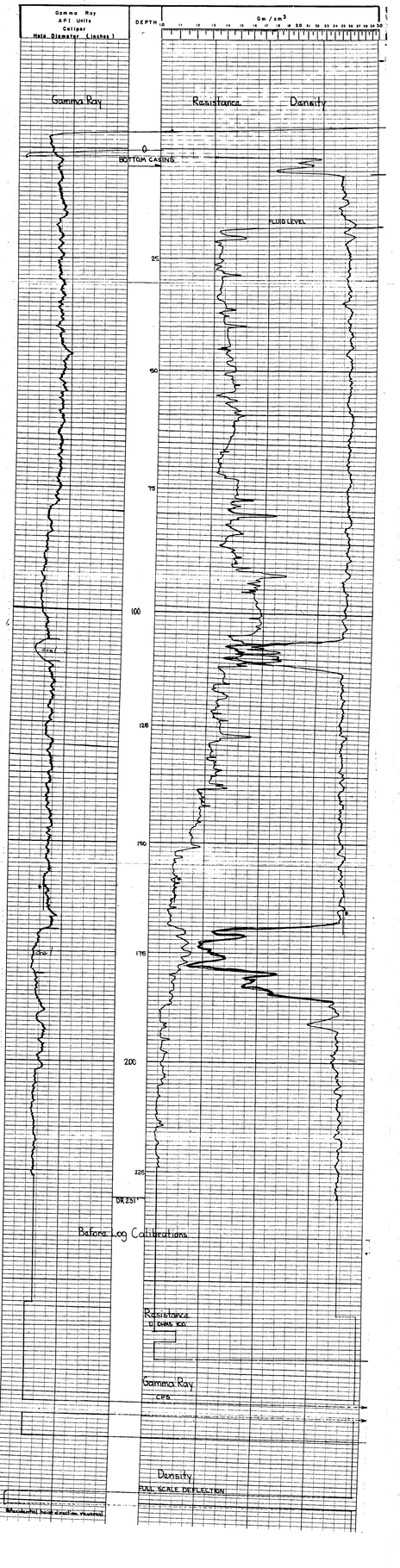
Gamma Ray		Resistance	Density	Caliper
Run No.	One	Run No.	One	
Tool Model No.	L-103	Tool Model No.	L-103	
Diameter	2⅞"	Diameter	2⅞"	
Detector Model No.	LP-614	Type	ME	
Type	Scint.	Spacing	13"	
Length	15'	Length	5'	
		Horiz. Scale	50A/div.	
		Rm @ °F	N/A	
General		Source Model	HDVP	
Hoist Truck No.	1	Serial No.	687	
Inst. Truck No.	1	Isotope	Cs 137	
Location	Campbell River	Strength	125 mC	

LOGGING DATA

General				Gamma Ray				Density			
Run No.	Depths From	Depths To	Speed Ft/Min	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	
1	234'	0	16	4	100	2.5	5.4	1	116	.5L	

Reference Literature: N/A

Remarks: H. Vincett
Excellent hole conditions



LEXCO TESTING LTD
DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: ~~February~~ -9-77

COMPANY: Lexco Testing

HOLE NO.: Line 45 QU-77-17

APPROX. LOCATION: _____ SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: 45+00 6505 Lt

ELEVATION: 1144

DRILLER: J.L. Lodoen

FROM	TO	LOG	REMARKS
0	18	Boulders and till	
18	105	sandstone	
105	107	brown and carbonasous shale	
107	155	sandstone	
155	162	brown shale	
162	166	coal	
166	168	carbonasous shale	
168	170	brown shale	
170	173	sandstone	
173	199	brown shale	
199	207	coal	
207	211	brown and carbonasous shale	
211	213	brown shale	
213	219	coal	
219	256	brown shale and stringers of sandstone	
256	264	basalt	

COMMENTS _____

WATER HORIZON _____ FT. _____

ex - Gunsam 77 file.

CANADIAN ARCTIC SURVEY SYSTEMS LTD.

GAMMA DENSITY & RESISTANCE

708 - 333 - 5 STREET N.W. CALGARY, ALTA.

COMPANY LEXCO TESTING LTD.

WELL DRILLHOLE GD-85500 GSOOT 1 (L-2)

FIELD GUNSAM G.U.-77-77

PROVINCE BRITISH COLUMBIA

Other Services

Permanent Datum Elev. 0 Log Measured from G.L. 0 ft. above perm. Dat.

Drilling measured from G.L. Elev. D.F. G.L.

Run No.	1		
Type Log	Gamma Density		
Depth-Driller	263'		
Depth-Logger	263'		
Top Log Interval	Surface		
Type Fluid in Hole	Water		
Salinity, PPM Cl.	N/A		
Density	N/A		
Max. rec. temp. deg. F.			
Operating rig time			
Recorded by	G.S. Valen		
Witnessed by	Schlumberger		

BORE-HOLE RECORD

Bit No.	Size	From	To
1	3 7/8	0	263'

CASING RECORD

Size	Wgt.	From	To
3		Surf.	21'

Fold Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

Gamma Ray		Resistance		Density		Caliper
Run No.	One	Run No.	One			
Tool Model No.	L-103	Tool Model No.	L-103	L-103		
Diameter	2 1/2"	Diameter	2 1/2"	2 1/2"		
Detector Model No.	CP-114	Type	MC	F		
Type	1 1/2" (Scint)	Spacing		15"		
Length	1.5'	Length	5'			
		Horiz. Scale	50 A/div			
		Rm @ °F	N/A			
		Source Model		HOVP		
		Serial No.		687		
		Isotope		Cs 137		
		Strength		125 mC		

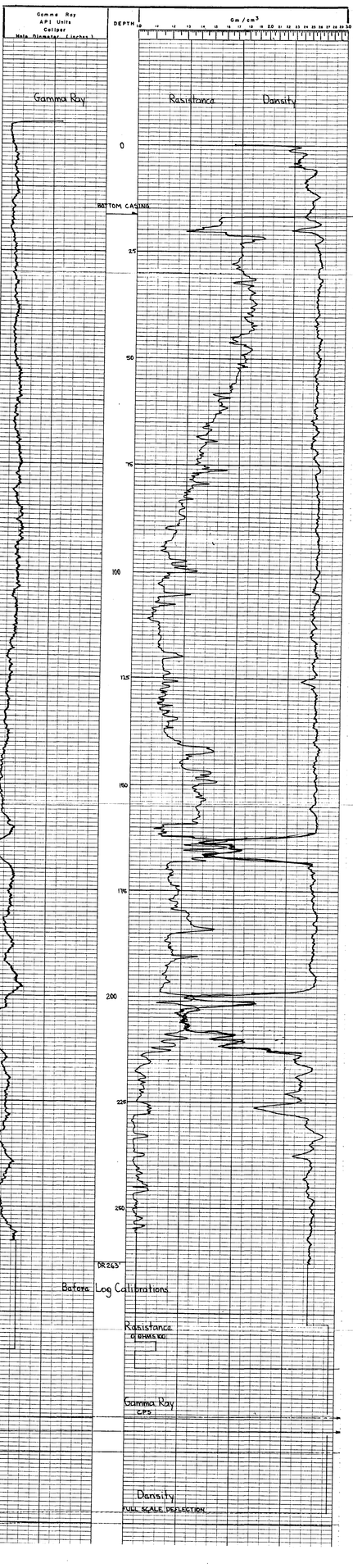
General	
Hoist Truck No.	1
Inst. Truck No.	
Location	Campbell River

LOGGING DATA

Gamma Ray							Density			
Run No.	Depths From	To	Speed Ft./Min.	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
1	263'	0	15	4	100	15R	5.4	1	1K	.5L

Reference Literature: N/A

Remarks: R. Lodge
Excellent hole conditions



LEXCO TESTING LTD

DRILLHOLE REPORT

OAL FIELD: Campbell River DATE: February 10, 1977

COMPANY: Lexco Testing

HOLE NO.: Line 30 QU-77-18

APPROX. LOCATION: SEC. TWP. RGE. W.

SURVEYED LOCATION: 30+00 5175 Lt of B/L

ELEVATION: 1148.2

DRILLER: H. Vincett

FROM	TO	LOG	REMARKS
0	7	Till	
7	48	gray sandstone	
48	56	carb. shale	
56	58	coal	
58	150	gray sandstone	
150	153	carb shale	
153	156	coal	
156	164	green sandstone	
164	170	gray sandstone	
170	200	Basalt	

COMMENTS

WATER HORIZON FT.

CK-Quinsam 77(3)e.

CANADIAN ARCTIC SURVEY SYSTEMS LTD.

GAMMA DENSITY & RESISTANCE

708 - 35 A STREET N.W. CALGARY, ALTA.

COMPANY: LEXCO TESTING LTD

5175 ft

WELL: DRILLHOLE QU 80+00 - 77-18

FIELD: QUINSAM

67

PROVINCE: BRITISH COLUMBIA

Lsd. ___ Sec. ___ Twp. ___ Rge. ___ W.

Other Services: L23

Permanent Datum: G.L. Elev. 1118.4' Elev. K.B. ___

Log measured from: G.L. ___ ft. above perm. Dat. D.F. ___

Drilling measured from: G.L. G.L. ___

Date	10 Feb. '77		
Run No.	One		Two
Type Log	Nuclear	Res.	Res. Detail (one of above)
Depth - Driller	5175		
Depth - Logger	5180		
Bottom logged interval	5180		
Top logged interval	0		
Type fluid in hole	Water		
Salinity, PPM Cl.	N/A		
Density	N/A		
Level	Full		
Max. rec. temp. deg. F.			
Operating rig time	1 Shift		
Recorded by	G. Samchuk Jr.		
Witnessed by	G. Samchuk		

RUN No.	BIT	BORE-HOLE RECORD From	To	CASING RECORD Size	Wgt	From	To
1	9 7/8	Surf.	80	5"		Surf.	80
2	7 7/8	80	T.D.				

Field Data

This Header is to Conform to API RP 33

Gamma Ray — Density — Caliper

EQUIPMENT DATA

	Run No. 1	Run No. 2
Tool Model No.	Logic	Logic
Detector	Density	Density
Detector Make No.	DP-5A	DP-5A
Source	3 Ci Cs137	3 Ci Cs137
Length	5'	5'
Resistivity Cell	Logic	Logic
Tool Model No.	Logic	Logic
Electrode Spacing	16"	16"
Length	5'	5'
Gamma Ray	Logic	Logic
Tool Model No.	Logic	Logic
Detector	Scintillation	Scintillation
Length	5'	5'
Hole Finder	Logic	Logic
Tool Model No.	Logic	Logic
Detector	Mechanical	Mechanical
Length	5'	5'

Operator: Lexco Testing

Logging Engineer: Samchuk Kuser

Recorder: Logic

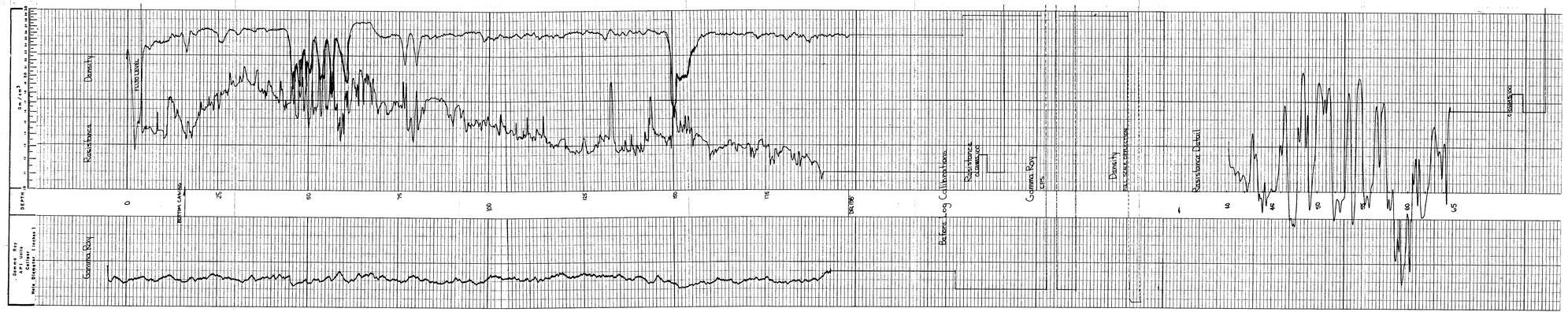
Witnesses: Lexco

LOGGING DATA

Run No.	Date	Time From	Time To	Gamma Ray Sens. Div.	Res. Sens. Div.	T.C. Sec.	Res. Sens. Div.	T.C. Sec.	Res. Sensitiv. Div. Settings	Res. Sensitiv. Div. Settings	Res. Sensitiv. Div. Settings
1	10/2			5	5	1	1	1	1K	5K	
2		1200	0	10	10	1	1	1	2K	5K	

Reference: Lithology N/A

Remarks: Vacuum Excellent hole condition.



LEXCO TESTING LTD

DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: Feb 11, 1977

COMPANY: Lexco Testing

HOLE NO.: QU-77-20

APPROX. LOCATION: SEC. ___ TWP. ___ RGE. ___ W. ___

Line 21+30 4800.7 Lt

SURVEYED LOCATION:

ELEVATION: 1114.6

DRILLER: H. Vincett

FROM	TO	LOG	REMARKS
0	3	till	
3	104	gray sandstone	
104	117	coal (shale partings)	
117	119	carbonaceous shale	
118	167	grey sandstone	
167	173	carbonaceous shale	
173	194	brown shale	
194	206	green sandstone	
206	260	hard grey shale	gold colored specks mix in shale.

COMMENTS

WATER HORIZON 169 FT. 5-10 gal per min

Ex Gladstone 7-16-16

CANADIAN ARCTIC SURVEYS SYSTEMS LTD.

GAMMA DENSITY & RESISTANCE

TOW - 334 STREET N.W. CALGARY ALTA.

COMPANY LENAC PETROLEUM LTD.

WELL DELLA-BLUE GLACE C-00-77-J-9

FIELD GLADSTONE

PROVINCE BRITISH COLUMBIA

67

Permanent Datum: Elev. 0 ft.
Log Measured from: G.L.
Drilling Measured from: G.L.

Elev. 2075
All Elevations Are Above Sea Level

Elev. K.B. —
D.F. —
G.L. —

Log No.	Date	Time	Elev.	Depth
1	3-3-77			200
2				
3				
4				

Run No. 1
Depth Driller 200
Depth Logger 200
Bottom Logged Interval 200
Top Log Interval Surface
Casing Driller 13 3/8 @ 30
Casing Logger
Bit Size 12 1/4
Type Fluid in Hole Water
Density
Viscosity
Level Full
Max. Rec. Temp. 50°F
Estimated Cement Top Surface
Time Since Circulation
Time Since Last Log
Max. Rec. Temp. 50°F
Equipment No. 5
Location Calgary
Recorded By C. Gunderson
Witnessed By

Paid Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

Gamma Ray		Resistance (Long & Lat)		Density	Caliper
Run No.	1	Run No.	1	Run No.	1
Tool Model No.	L-505	Tool Model No.	L-505	Tool Model No.	L-505
Diameter	2 3/8	Diameter	2 3/8	Diameter	2 3/8
Detector Model No.	LP-514	Type	MAL	Type	F
Type	Geiger	Spacing		Spacing	15
Length	16	Length	10'		
		Hardy Scale	200 Ω/Volts		
		Lab. Ω/V	N/A		

General	
Hoist Truck No.	
Inst. Truck No.	
Location	Campbell River

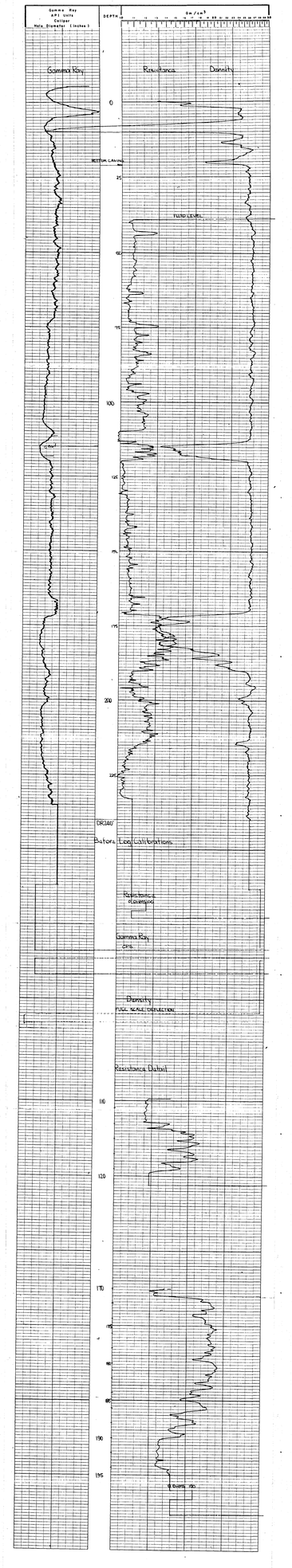
General	
Sonde Model	2-2-P
Sonde Serial No.	687
Instrument	Ck. 187
Strength	125 mC

LOGGING TYPE

General						Gamma Ray						Density			
Run No.	Depths From	To	Hoses Fl./Min.	T.C. Sec.	Sens. Settings	Zero Ch. L or R	API G.R. Units per Log Ch.	T.C. Sec.	Sens. Settings	Zero Ch. L or R					
1	Surf.	G.	N.	4	10	R.	6	1	10	L.					

Reference Literature: N/A

Remarks: Location
Excellent hole conditions


Gamma Ray
API Units
Caliper
Hole Diameter (Inches)
DEPTH
Gm/cm³
Gamma Ray
Resistance
Density
BOTTOM CASING
FLUID LEVEL
DRILL
DRILL
DRIL

ex Question 22/81

CANADIAN ARCTIC SURVEY SERVICES LTD.

GAMMA DENSITY & RESISTANCE

FOR - 3SA STREET N.W. CALGARY, ALTA.

COMPANY: LEXCO TESTING LTD.

WELL: DRUMHOLE QUITS-20

FIELD: QUINSAM

PROVINCE: BRITISH COLUMBIA

Log Interval From: 0 To: 128 Depth Measured From: G.L. Permanent Datum: G.L. Elev.: G.L. 0 K.B. 0

Drilling Measured From: G.L.

Run No. | Date | Type Log | Depth Driller | Depth Logger | Bottom Logged Interval | Top Logged Interval | Type Fluid in Hole | Salinity, PPM Cl | Density | Level | Max. Rec. Temp. | Equipment Location | Recorded By | Witnessed By

1 | 25-7 | Gamma Density Resistance | 128 | 128 | G.L. | G.L. | Water | N/A | N/A | Full | N/A | Calgary | Campbell | Vincell

Field Data

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

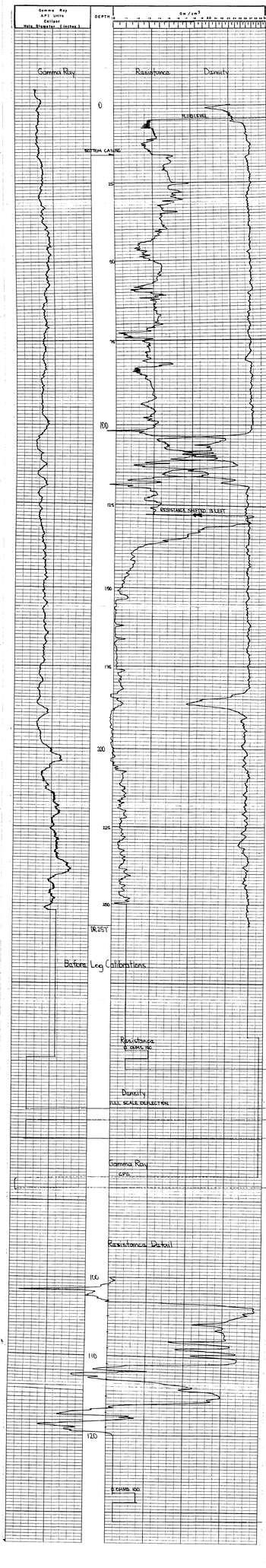
Gamma Ray		Resistance	Density	Caliper
Run No.	One	Run No.	One	
Tool Model No.	L-104	Tool Model No.	L-104	L-104
Diameter	2.5	Diameter	2.5	2.5
Detector Model No.	Geiger Scint.	Spec.	NE	E
Tape	1R	Spacing		1A
Length		Length		
		Meas. Scale	50-50/div	
		Res. @ Hz	N/A	
General		Source Model		HDVP
Hotel Truck No.	1	Serial No.		887
Location	Campbell River	Isotope		Cs 137
		Strength		125 mC

LOGGING DATA

General															
	Depths														
Run No.	From	To	Speed Ft/Min	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	Density				
1	25-7	0	10	4	100	2R	5A		1K	5L					

Reference Literature: N/A

Remarks: Hi Vincell
Persistent hole conditions
Resistance whitout instructions left on 1/04



LEXCO TESTING LTD
DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: Feb 12, 1977

COMPANY: Lexco Testing

HOLE NO.: QU-77-21

APPROX. LOCATION: SEC. TWP. RGE. W.

SURVEYED LOCATION: 22+73 6750.2 Lt

ELEVATION: 1207.8'

DRILLER: D. Broen

FROM	TO	LOG	REMARKS
0	11	boulders	
11	38	sand stone	
38	40	carbonaceous shale	
40	45	sandstone	
45	46	carbonaceous shale	
46	118	grey sandstone	
118	121	carbonaceous shale	
121	151	green siltstone	
151	204	basalt	

COMMENTS

WATER HORIZON FT.

CX-Quinsam 77/3/12.

CANADIAN ARCTIC SURVEY SYSTEMS LTD. 708 - 35 A STREET N.W., CALGARY, ALTA.

GAMMA DENSITY & RESISTANCE

COMPANY LEXCO TESTING LTD.

WELL DRILLHOLE QU 77-21

FIELD QUINSAM 22-73

PROVINCE BRITISH COLUMBIA

67

Log Service (L.S.)

Permanent Datum G.L. Elev. 1228 G.L.

Log measured from G.L. 11' above perm. Dat.

Drilling measured from G.L.

Date	13 Feb. 77
Run No.	One
Type Log	Nuclear
Depth-Driller	202'
Depth-Logger	198'
Bottom logged interval	198'
Top logged interval	Surface
Kind of fluid	Water
Salinity, PPM Cl.	N/A
Density	11.5
Max. rec. temp. deg. F.	
Operating rig time	
Recorded by	G. Scandrett
Witnessed by	G. Scandrett

BORE-HOLE RECORD			CASING RECORD		
Run	Bit	From	To	Size	Wgt.	From	To
1	8 3/4"	Surf.	12"				
	12"	T.D.					

Fold Here — This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

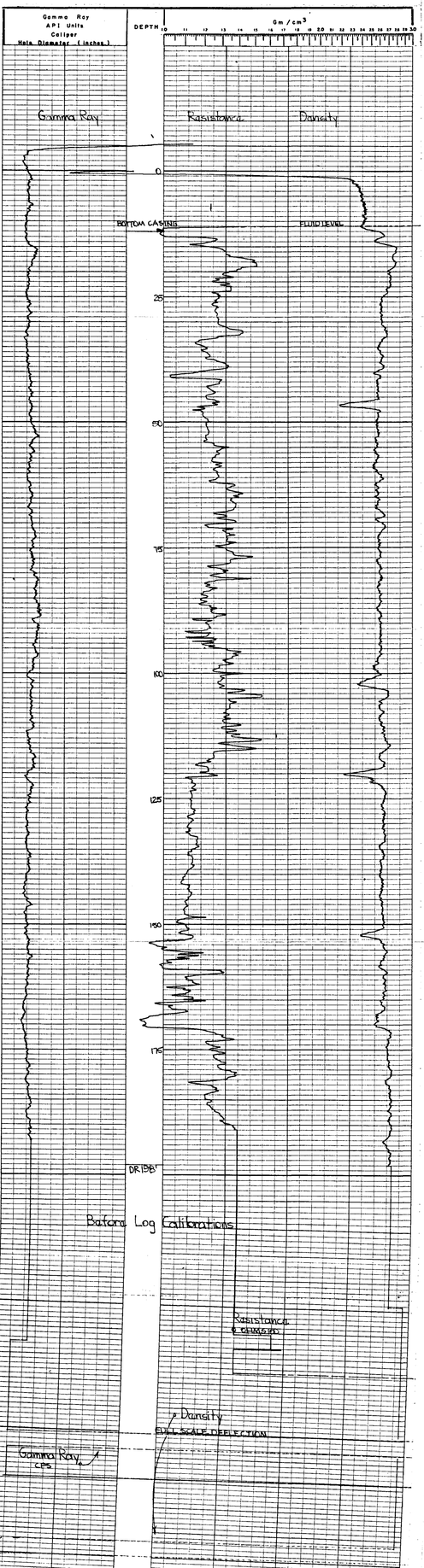
Gamma Ray			Resistance	Density	Caliper
Run No.	One			One	
Tool Model No.	1-103		1-103	1-103	
Diameter	2.25"		2.25"	2.25"	
Detector Model No.	CP-514			FH	
Type	Scint.		ME		
Length	1.5'			13'	
			6'		
General			333 Ω/div		
Hoist Truck No.	1		N/A		
Inst. Truck No.	1			H.D.V.P.	
Location	Campbell River		6.67		
			Cs 137		
			125 mC		

LOGGING DATA

General					Gamma Ray				Density		
Depths			Speed	T.C.	Sens.	Zero	API G.R. Units	T.C.	Sens.	Zero	
Run No.	From	To	Ft./Min.	Sec.	Settings	Div. L or R	per Log Div.	Sec.	Settings	Div. L or R	
1	198'	0	10	4	100	2R	5.4	1	1K	.5L	

Reference Literature: N/A

Remarks: D. Brown



LEXCO TESTING LTD
DRILLHOLE REPORT

AL FIELD: Campbell River DATE: February 13, 1977

COMPANY: Lexco

HOLE NO.: Line 30.00 1502.5 Lt QU-77-22

APPROX. LOCATION: SEC. TWP. RGE. W.

QU-77-22

SURVEYED LOCATION: 30+00 1502.5 Lt B/L

ELEVATION: 1040'

DRILLER: Vincett H.

FROM	TO	LOG	REMARKS
0	5	Till	
5	353	Gray Sandstone	
353	362	Coal	
362	372	Carb Shale	
372	378	Brown Shale	
378	390	Gray Sandstone	
390	420	Soft White Sandstone	

COMMENTS

WATER HORIZON FT.

LEXCO TESTING LTD.

GAMMA-DENSITY & RESISTANCE CALIPER

COMPANY LEXCO TESTING LTD.

WELL DRILLHOLE LQ 77-95

FIELD LOWER QUINSAM

PROVINCE BRITISH COLUMBIA

Permanent Datum G.L. Elev. 0.0

Log measured from G.L. 5.0 ft. above perm. Dat.

Drilling measured from G.L.

Date	22 JUNE '77	
Run No.	ONE	
Depth - Driller	20.0 ft.	
Depth - Logger	20.0 ft.	
Top logged interval	0.0 ft.	
Type fluid in hole	WATER	
Salinity, PPM Cl.	—	
Density	FRESH	
Max. rec. temp. deg. F	—	
Equipment No.	D-105 HR	
Recorded by	R. LEGAL	
Witnessed by	S. GARDNER	

Elev. K.B. G.L.

Other Services

Log Sec. Twp. Rge. W4

Lat. 49° 51' 0" N Long. 126° 32' 0" W

67

(L 34)

Pole Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

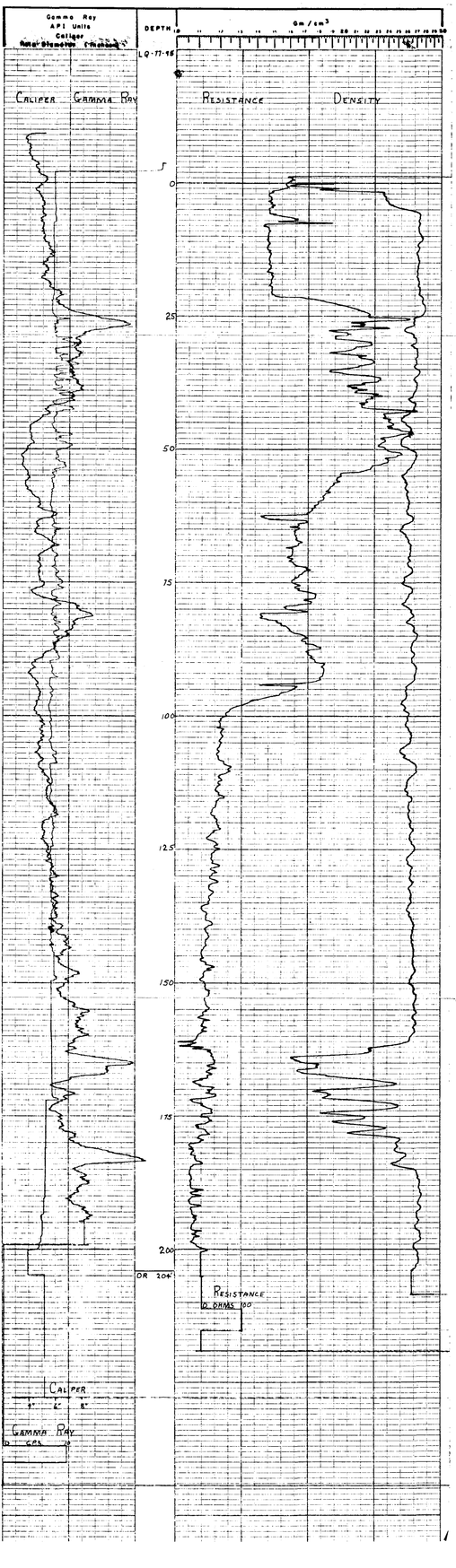
Gamma Ray				Resistance	Density	Caliper
Run No.	ONE			ONE	ONE	ONE
Tool Model No.	L-103			L-103	L-103	L-103
Diameter	2 1/8"			2 1/8"	2 1/8"	2 1/4"
Detector Model No	CP-516			MR	F	EM
Type	2 UNF				13"	
Length	2'					
				Length	1"	
				Horiz. Scale	333.0 / DIV	
				Rm @ °F	—	
Holst Truck No.	2			Source Model	HDVP	
Inst. Truck No.	2			Serial No.	687	
Location	CAMPBELL RIVER			Isotope	Cs 137	
				Strength	125 mC	

LOGGING DATA

General							Gamma Ray			Density		
Run No.	Depths From	Depths To	Speed Ft/Min.	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	20+	0	12	4	100		5	1	1K	0.5L

Reference Literature:

Remarks: DENNIS



LEXCO TESTING LTD
DRILLHOLE REPORT

AL FIELD: Campbell River DATE: February 14, 1977

COMPANY: Lexco Testing

HOLE NO.: QU-77-23

APPROX. LOCATION: SEC. TWP. RGE. W.

SURVEYED LOCATION: 30+00 5671 Lt of B/L

ELEVATION: ~~1184.7~~ 1155

DRILLER: D. Broen

FROM	TO	LOG	REMARKS
0	5	Boulders	
5	27	sandstone	
27	32	carb shale	
32	34'	coal	
34	43	sand stone	
43	52	brown shale with coal stringers	
52	65	green ss	
65	215	grey sand stone	
215	220'	coal	
220	231	sand stone	
231	283	bisalt	

COMMENTS

WATER HORIZON FT.

CANADIAN ARCTIC SURVEY SYSTEMS LTD.

709 - 35 A STREET N.W. CALGARY, ALTA.

GAMMA DENSITY & RESISTANCE

COMPANY LEXCO TESTING LTD.

WELL DRILLANCE 86-37-23 56.71 66

FIELD QUESNAM 34-C-10

PROVINCE BRITISH COLUMBIA

Other Services

Permanent Datum G.L. Elev. 4.5 C

Log Measured from K.B. 6 ft. above perm. Datum

Drilling Measured from K.B.

Date 14 Feb. 77

Type Fluid in Hole Water

Max. rec. temp. deg. F 32

Equipment Location Kam

Recorded by Nielsen

Witnessed by Walker

Run No. One

Depth-Driller 282'

Depth-Logger 280'

Bottom logged interval 278'

Top logged interval Surface

Casing - Driller 13 3/8" @ 0'

Casing - Logger N/A

Bit Size 12 1/4"

Type Fluid in Hole Water

Dens. Visc. 1.0 / N/A

pH / Fluid loss N/A / N/A

Source of Sample Circulation

Rm @ Meas. Temp. N/A @ N/A

Rmf @ Meas. Temp. N/A @ N/A

Rmc @ Meas. Temp. N/A @ N/A

Source: Rmf N/A Rmc N/A

Rm @ BHT N/A @ N/A

Time Since Circ. 6 hrs.

Time Logger on Bottom 1 hr.

Max. recorded temp. deg. F 32

Equipment Location Kam

Recorded by Nielsen

Witnessed by Walker

CASING RECORD

No.	Size	Wgt.	From	To
1	13 3/8"	54.5#	0'	16'
2				

Elev. K.B. 6'

G.L.

Fold Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

Gamma Ray		Resistance	Density	Caliper
Run No.	One	One	One	
Tool Model No.	L-103	L-103	L-103	
Diameter	2 1/8	2 1/8	2 1/8	
Detector Model No.	CP-114	ME	F	
Type	Scint.		13"	
Length	15'			

General			
Hotel Truck No.	1	Source Model	HDVP
Inst. Truck No.		Serial No.	687
Location	Campbell River	Isotope	Cs 137
		Strength	125 mC

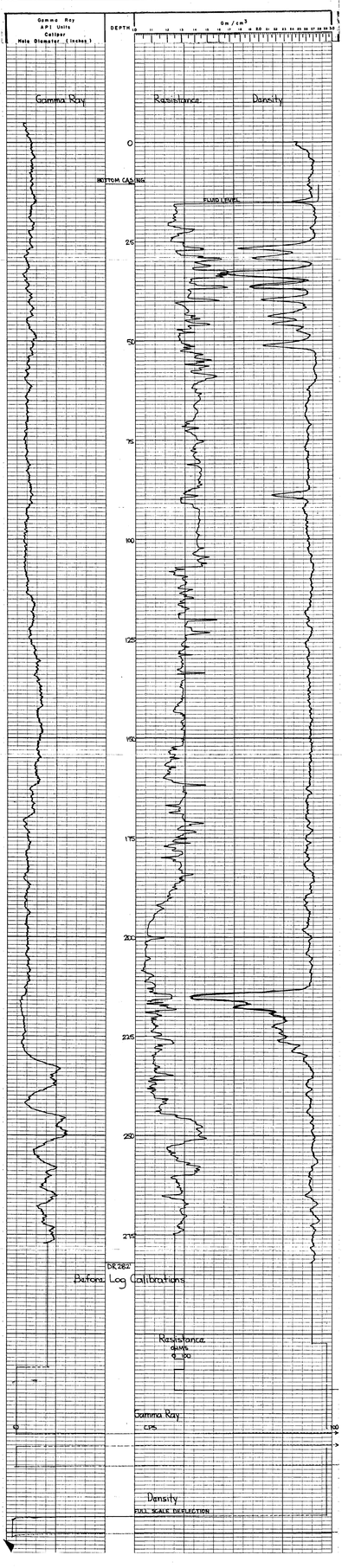
Resistance: Mono Type 5'; Spacing N/A; Length 5'; Metric Scale 100Ω/div; Rm @ °F N/A

LOGGING DATA

Gamma Ray General										Density					
Run No.	Depths From	Depths To	Speed Ft./Min.	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	
1	280'	0	10	4	100	28	5.4	1	1K	5L	

Reference Literature: N/A

Remarks: D. Brown



LEXCO TESTING LTD
DRILLHOLE REPORT

AL FIELD: Campbell River DATE: Feb 15,1977

COMPANY: Lexco Testing

HOLE NO.: QU-77-24

APPROX. LOCATION: SEC. TWP. RGE. W.

SURVEYED LOCATION: 20+00 485.2 Lt of B/L

ELEVATION: 1026.2'

DRILLER: H. Vincett

FROM	TO	LOG	REMARKS
0	2	till	
2	202	grey sandstone	
202	210	carbonaceous shale	
210	280	grey sandstne	
280	288	hard green sandstone	
288	331	grey sandstone	
341	345	carbonaseous shale	
345	420	grey sandstone	
TD	420		

COMMENTS

WATER HORIZON FT.

Ex Gulf Canada 77/81

CANADIAN SPECTRE SERVICES LTD.

GAMMA DENSITY & RESISTANCE

COMPANY: GULF CANADA RESOURCES LTD.
WELL: DRILLBACK 6d 77-24
FIELD: QUINSAM
PROVINCE: BRITISH COLUMBIA
Lat. Km. Twp. Rge. W
Permanent Datum: G.L.
Elevation: G.L.
Log Measured from: K.B.
Drilling Measured from: K.B.
Elev.: K.B. 0.0 G.L.
Date: 1-Jan-77
Run No.: 67
Depth Driller: 1.8
Depth Logger: 1.8
Bottom Log Interval: 1.8
Top Log Interval: Surface
Casing - Driller: 0.0
Casing - Logger: 0.0
Bit Size: 0.0
Type Fluid in Hole: Water
Dens. / Visc.: N/A
pH / Fluid Loss: N/A
Source of Sample: Circulation
Rm @ Meas. Temp.: N/A
Rmf @ Meas. Temp.: N/A
Rmc @ Meas. Temp.: N/A
Source Rmf / Rmc: N/A
Rm @ BHT: N/A
Time Since Circ.: 1 Hr.
Max. Rec. Temp.: 0.0
Equip. Location: Campbell River
Recorded By: Vincent
Witnessed By: Mr. Gaudet

Gamma Ray	Resistivity	Density	Caliper
Run No.	Run No.	Run No.	
Test Model No.	Test Model No.	Test Model No.	
Diameter	Diameter	Diameter	
Detector Model No.	Type Sensing	Type Sensing	
Type	Length	Length	
Length	Hole Size	Hole Size	
General	Rm @ Rf	Rm @ Rf	
Hand Track No.	Special Model	Special Model	
Test Track No.	Serial No.	Serial No.	
Location	Location	Location	
	Length	Length	

Field Data This Heading and Log Conform to API RP 33

EQUIPMENT DATA

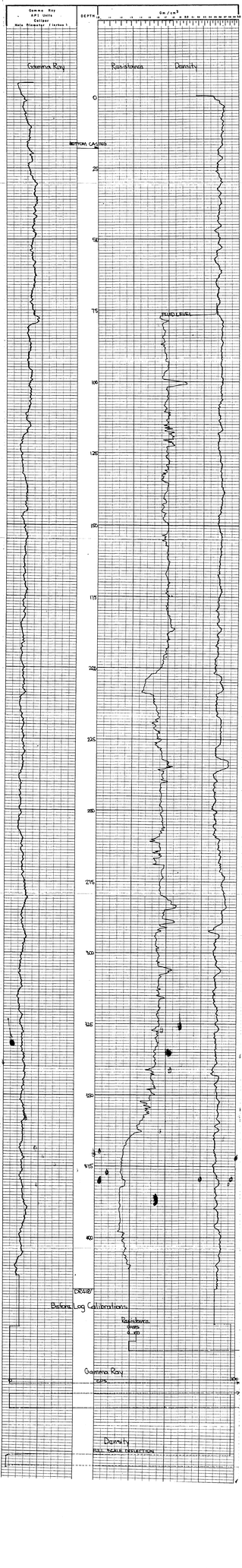
Gamma Ray					Resistivity				Density				Caliper
Run No.	Cnd.				Run No.	Cnd.			Run No.	Cnd.			
Test Model No.	L-3CR				Test Model No.	L-3CR			Test Model No.	L-3CR			
Diameter	6.0				Diameter	6.0			Diameter	6.0			
Detector Model No.	CP-5AL				Type Sensing	NOE			Type Sensing	NOE			
Type	CP-5AL				Length	1.5			Length	1.5			
Length	1.5				Hole Size				Hole Size				
General					Rm @ Rf				Rm @ Rf				
Hand Track No.	1				Special Model				Special Model	N.D.V.P.			
Test Track No.					Serial No.				Serial No.	487			
Location	Campbell River				Location				Location	Ca 132			
					Length				Length	100 m.c.			

LOGGING DATA

General					Gamma Ray					Density			
Run No.	Depths From	To	Speed Ft/Min	T.C. Sec.	Sens. Settings	Zero Div. L.H.S.	API G.R. Units Per Log Div.	T.C. Sec.	Sens. Settings	Zero Div. L.H.S.			
1	6.8	0	16.	4.	100	2.C.	6.4.	1.	11A.	.6C.			

Remarks: Litho-Log: N/A

Remarks: H. Vincent



LEXCO TESTING LTD
DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: February 15,1977

COMPANY: Lexco

HOLE NO.: Qu-77-25

APPROX. LOCATION: SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: 45+00 8444' Lt of B/L

ELEVATION: 1163'

DRILLER: D. Broen

FROM	TO	LOG	REMARKS
0	10	Boulders	
10	51	Grey Sand Stone	
51	56	Coal	
56	81	Brown Shale	
81	95	Brown Sand stone	
95	118	" " Shale	
118	131	Coal	
131	136	Brown Shale	
136	140	Brown Silt Stone	
140	150	Brown Shale	
150	163	Brown Sand Stone	
163	184	Basalt	

COMMENTS

WATER HORIZON FT.

Cc Quinsam 22 Gas

CANADIAN ARCTIC SURVEY SYSTEMS LTD.
708 - 334 STREET N.W. CALGARY - ALTA.

GAMMA DENSITY & RESISTANCE

COMPANY LEXCO TESTING LTD.
WELL DRILLHOLE QU 77-25
FIELD QUINSAM
PROVINCE BRITISH COLUMBIA

8444 ft
67
(230)

Permanent Datum G.L. Elev. 1143 ft
Log Measured From G.L. 7 ft. Above Perm. Dat.
Drilling Measured From G.L.

Other Services

Date	15 Feb. 77	
Depth - Driller	178	
Depth - Logger	178	
Depth Logged Interval	178	
Bottom Log Interval	178	
Type Fluid in Hole	Water	
Salinity, PPM Cl.	N/A	
Level	Full	
Max. Rec. Temp. °F		
Operating rig time		
Recorded By	G. Sandowski	
Witnessed By		

Casing Record	No.	Size	Wgt.	From	To
Surface	1	6 5/8		Surf.	10
Surface	2	5		Surf.	10

Bit Record	No.	Size	From	To
	1	6 1/2	Surf.	10

Fold Here — This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

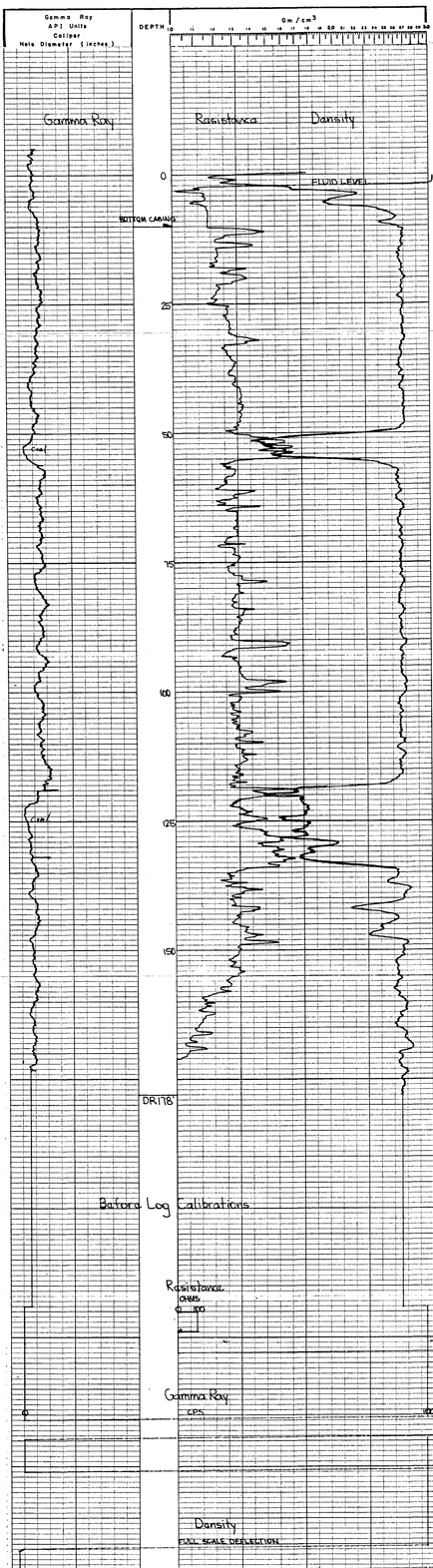
Gamma Ray		Resistance		Density		Caliper
Run No.	One	Run No.	One	Run No.	One	
Tool Model No.	L-103	Tool Model No.	L-105	Tool Model No.	L-103	
Diameter	2 1/8	Diameter	2 1/8	Diameter	2 1/8	
Detector Model No.	CP-514	Type	ME	Type	E	
Type	Scint.	Spacing		Spacing	12	
Length	15					
		Length	5'			
		Horiz. Scale	06 Cps/div			
		Rm @ °F	N/A			
General		Source Model	HOVP			
Hoist Truck No.		Serial No.	687			
Inst. Truck No.		Isotope	Cs 137			
Location	Campbell River	Strength	125 mC			

LOGGING DATA

General				Gamma Ray					Density			
Run No.	Depths From	Depths To	Speed Ft/Min	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		
1	178'	0	10	4	100	21	5.4	1	1K	61		

Reference Literature: N/A

Remarks: D. Brown



LEXCO TESTING LTD

DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: April 15,1977

COMPANY: Lexco Testing

HOLE NO.: QU-77-51

APPROX. LOCATION: SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: " 36+77 9743'It of B/L

ELEVATION: 1180'

DRILLER: H. Vincett

FROM	TO	LOG	REMARKS
0	9	till	
9	11	coal	
11	30	brown shale	
[illegible]	35	bisalt	

COMMENTS

WATER HORIZON FT.

CX- QUINSAM 77(3)C.

LEXCO TESTING LTD.

GAMMA, CALIPER DENSITY & RESISTANCE

67

COMPANY LEXCO TESTING LTD.

WELL DRILL HOLE QU-77-51 (L1)

FIELD QUINSAM 360+77 9743 L.L

PROVINCE B.C

Lsd. ___ Sec. ___ Twp. ___ Rge. ___ W. ___

Other Services

Permanent Datum G.L. Elev. 1180'

Log measured from G.L. ___ ft. above perm. Dat.

Drilling measured from G.L.

Elev. K.B. ___ D.F. ___ G.L. ___

Date	15 APRIL 77		
Run No.	1		
Type Log	NUCLEAR RES CALIPER		
Depth - Driller	35		
Depth - Logger	33		
Bottom logged interval	33		
Top logged interval	0		
Type fluid in hole	WATER		
Salinity, PPM Cl.	n/a		
Density	n/a		
Level	FULL		
Max. rec. temp. deg. F.	n/a		
Operating rig time	1/2 HR		
Recorded by	V. KAUFFER		
Witnessed by	S. GARDNER		

RUN No.	BORE-HOLE RECORD Bit	From	To	CASING RECORD Size	Wgt.	From	To
1	6 3/4	0	TD				

This Heading and Log Conforms to API RP 33 - Pale nere

EQUIPMENT DATA

	Gamma Ray	Resistance	Density	Caliper
Run No.	1	1	1	1
Tool Model No.	L-103	L-103	L-103	L-103
Diameter	2 1/8	2 1/8	2 1/8	2 1/8
Detector Model No.	CS-516			
Type		DC	F	SA
Spacing	36"		12"	
Length	5'			
Horiz. Scale		1"		
Rm @ 8°F		100 OHM		

General

Source Model	HDVP
Serial No.	687
Isotope	Cs 137
Strength	125 mC

General

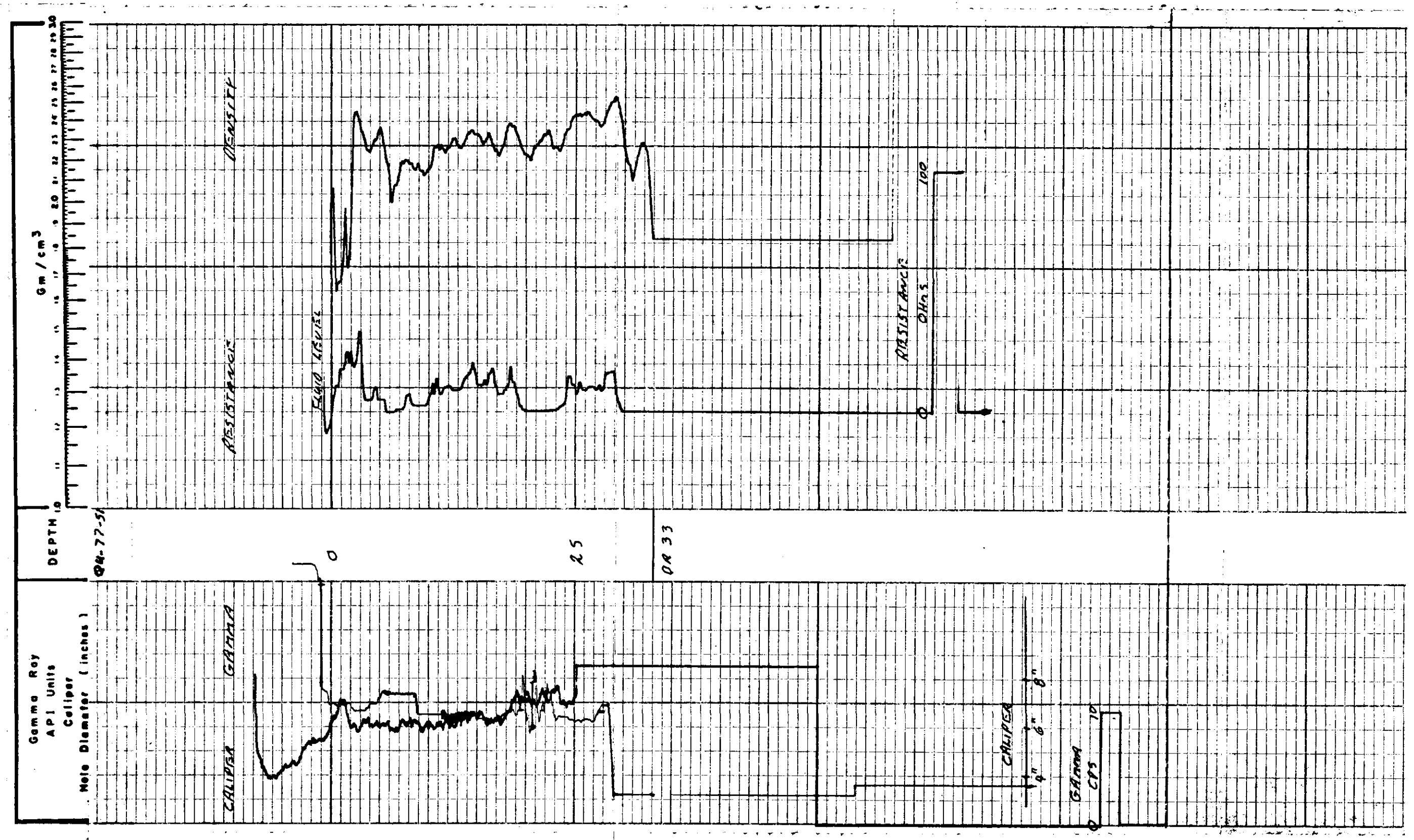
Hoist Truck No.	2
Inst. Truck No.	4
Location	CAMPBELL RIVER

LOGGING DATA

Run No.	Depths From	Depths To	Speed Ft/Min.	T.C. Sec.	Sens. Settings	Gamma Ray Zero Dis. L or R	Gamma Ray API G.R. Units per Log Div.	T.C. Sec.	Sens. Settings	Density Zero Dis. L or R
1	33	0	12	4	100		5	1	1K	5L

Reference Literature:

Remarks: H. VIGGAST



LEXCO TESTING LTD

DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: April 18, 1977

COMPANY: Lexco Testing

HOLE NO.: QW-77-52

APPROX. LOCATION: SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: 35+00 9096' Lt of B/L

ELEVATION: 1180'

DRILLER: H. Vincett

FROM	TO	LOG	REMARKS
0	3	till	
3	236	grey sandstone	
236	240	coal	
240	283	brown shale	
283	290	coal	
290	300	carbonaceous shale	
300	316	brown shale	
316	354	green sandstone	
354	380	bisalt	

COMMENTS

WATER HORIZON FT.

LOGS LTD.

DOWNHOLE SURVEYS & RESEARCH

Company: ARCO, TEXAS LTD.

Well: Prudhoe Bay Unit

Field: ARCTIC SLOPE, ALASKA

Date: 1-1-1-

LEXCO TESTING LTD
DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: April 19, 1977

COMPANY: Lexco Testing

HOLE NO.: QU-77-53

APPROX. LOCATION: Line 19+69 400 Rt. of B/L SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: 19+69 15.2 Rt. of B/L

ELEVATION: 1030'

DRILLER: D. Broen

FROM	TO	LOG	REMARKS
0	245	grey sandstone	
245	289	brown sandstone	
289	292	coal with shale stringers	
292	296	brown sandstone	
296	300	coal	
300	385	brown sandstone	
385	390	brown shale	
390	386	brown sandstone	
396	417	green sandstone	
417	470	grey sandstone	
470	482	coal	
482	495	brown shale with coal stringers	
495	536	grey sandstone	
536	539	coal	
539	580	brown shale	
580	600	brown sandstone	

COMMENTS

WATER HORIZON ___ FT. ___

Schlumberger

Well Name: Kaiser-Francis Oil Co. Gas Unit Well No. 1
Field: Wildcat
County: Morton
State: Kansas
Other Services: Dual Induction Laterolog, Borehole Compensated Sonic Log, Compensated Neutron Formation Density Log

Permanent Datum: Ground Level
Log Measured From: K.B. 10 Ft. Above Perm. Datum
Drilling Measured From: K.B.

Date	12-4-78		
Run No.	ONE		
Depth-Driller	6100		
Depth-Logger	6102		
Bottom Logged Interval	6100		
Top Log Interval	3		
Casing-Driller	8 5/8 @ 1700		
Casing-Logger	1700		
Bit Size	7 7/8		
Type Fluid in Hole	Chemical		
Dens.	9.2		
Visc.	45		
Max. Rec. Temp.	120°F		
Estimated Cement Top	2400		
Equipment	8		
Location	Ulysses, Kansas		
Recorded By	Hoffman		
Witnessed By	Mr. Bell		

Run No.	Bit No.	Type Log	Depth-Driller	Depth-Logger	Scale	Max. Rec. Temp.	Equipment	Location
ONE		DIL	6100	6102	5	120°F	8	Ulysses, Kansas
		BHC						
		CNFD						

Remarks: Run ONE: DIL/BHC/CNFD - 6100

Run 1: Dual Induction Laterolog/ Sonic Borehole Prof.

Mr. Bell

LEXCO TESTING LTD

DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: April 21, 1977

COMPANY: Lexco Testing

HOLE NO.: CH-77-54

APPROX. LOCATION: SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: 9+00 403.6 lt of B/L

ELEVATION: 1009.9

DRILLER: D. Broen

FROM	TO	LOG	REMARKS
0	9	till	
9	95	grey sandstone	
95	100	brown shale	
100	157	grey sandstone	
157	158	coal	
158	192	grey sandstone	
192	199	coal with sandstone partings	
199	260	grey sandstone	
260	261	coal	
261	272	brown shale	
272	282	brown sandstone	
282	342	grey sandstone	
342	355	coal	
355	368	brown shale	
368	388	grey sandstone	
388	400	basalt	

COMMENTS

WATER HORIZON ___ FT. ___

LEXCO TESTING LTD
DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: April 21, 1977

COMPANY: Lexco Testing

HOLE NO.: QU-77-54

APPROX. LOCATION: SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION:

ELEVATION:

DRILLER: H. Vincett

FROM	TO	LOG	REMARKS
261	266	coal	shale partings
266	274	carbonaceous shale	coal partings
274	280	brown shale	coal partings
280	295	grey sandstone	
295	317	basalt	

COMMENTS

WATER HORIZON FT.

LEXCO TESTING LTD.

GAMMA DENSITY & RESISTIVITY

Lic. Glendon 77-G-16

COMPANY: LEXCO TESTING LTD.

WELL: Glendon Oil 77-34

FIELD: Glendon Pool

PROVINCE: B.C.

Other Services: Gamma Density Resistivity

Log: Run: Date: Time:

Permanent Datum: G.L. Elev. 1625.5

Log Measured from: G.L. 11 above perm. Dat.

Drilling Measured from: G.L. Elev. K.B. G.L.

Run No.

Depth - Driller

Depth - Logger

Bottom Log Interval

Top Log Interval

Casing - Driller

Casing - Logger

Bit Size

Type Fluid in Hole

Density

Viscosity

pH

Fluid Loss

Source of Sample

Rm @ Meas. Temp.

Rmf @ Meas. Temp.

Rmc @ Meas. Temp.

Source of Rmf & Rmc

Rm @ BHT

Time Since Circ.

Max. Rec. Temp.

Equip. Location

Recorded By

Witnessed By

Date: Day 27 Month 5 Year 1977

Time: Start 13:00 Finish 16:00

Run No. 1

Depth - Driller 1977.5

Depth - Logger 1974.5

Bottom Log Interval 1974.5

Top Log Interval 0

Casing - Driller 11 3/4

Casing - Logger 11 3/4

Bit Size 7 7/8

Type Fluid in Hole Water

Density 1.0

Viscosity 50

pH 7.5

Fluid Loss 10 cc

Source of Sample Circulation

Rm @ Meas. Temp. 0.5 @ 70°F

Rmf @ Meas. Temp. 0.4 @ 70°F

Rmc @ Meas. Temp. 0.6 @ 70°F

Source of Rmf & Rmc Calculated

Rm @ BHT 0.3 @ 125°F

Time Since Circ. 3 hrs.

Max. Rec. Temp. 125°F

Equip. Location 1

Recorded By Brock

Witnessed By Ryan

Date: Day 27 Month 5 Year 1977

Time: Start 16:00 Finish 17:00

Field Data Checked by: Ryan

Office Data Checked by: Brock

Field Data Checked: Yes

Office Data Checked: Yes

Field Here.

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

	Gamma Ray		Resistivity	Density	Caliper
Run No.	1		1	1	
Tool Model No.	LC-3		LC-3	LC-3	
Diameter	5 CR		5 CR	5 CR	
Detector Model No.	CP-114		MN	C	
Type	Scint			LS	
Length	3"				
Length			1		
Meas. Scale			50 ohm		
Rm @ °F					
Source Model				HDVP	
Serial No.				867	
Isotope				Cs 137	
Strength				125 mC	

General

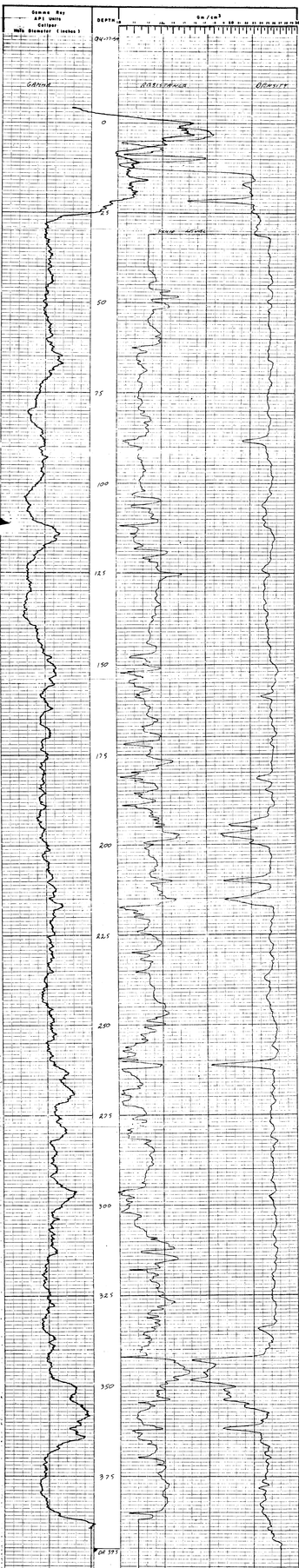
Model Truck No.	2	Source Model	HDVP
Inst. Truck No.	2	Serial No.	867
Location	Penticton Office	Isotope	Cs 137
		Strength	125 mC

LOGGING DATA

General						Gamma Ray				Density			
Run No.	Depth From	Depth To	Speed Ft/Min	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
1	1975	0	10	1	100		5	1	1.5	8.5

References (Literature):

Remarks: G. Brock



LEXCO TESTING LTD

DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: April 21, 1977

COMPANY: Lexco Testing

HOLE NO.: QU-77-55

APPROX. LOCATION: SEC. TWP. RGE. W.

SURVEYED LOCATION: 35+00 5670 Lt

ELEVATION: 1053.8

DRILLER: H.. Vincett

FROM	TO	LOG	REMARKS
0	11	till	
11	40	grey sandstone	
40	44	brown shale	
44	50	grey sandstone	
50	70	green sandstone	
70	85	grey sandstone	
85	90	brown shale	
90	180	grey sandstone	
180	186	brown shale	
186	226	grey sandstone	
226	232	coal	shale partings
232	236	brown shale	
236	246	grey sandstone	
246	256	siltstone	
256	258	coal	
258	261	brown shale	

COMMENTS

WATER HORIZON FT.

ex-Gunsan 77/3/6

LEXCO TESTING LTD.

GAMMA DENSITY & RESISTANCE

COMPANY LEXCO TESTING LTD.
WELL [illegible]
FIELD Gunsan Area
PROVINCE B.C.

67

Permanent Datum: Elev. 0 ft
Log Measured from: G.L. Elev. 0 ft
Drilling Measured from: G.L. Elev. 0 ft
Date: 77-03-06
Run No.: 1
Depth-Driller: 313
Depth-Logger: 313
Bottom Logged Interval: 313
Top Log Interval: GROUND
Casing: Driller: 0 Logger: 0
Bit Size: 12 in
Type Fluid in Hole: GEL
Density: 1.04
Viscosity: 40 s
Source of Sample: Flowline
Rm @ Measured Temp: 0.6 @ 24 C
Rmf @ Measured Temp: 0.6 @ 24 C
Rmc @ Measured Temp: 0.6 @ 24 C
Source of Rmf & Rmc: Calculated
Rm @ BHT: 0.6 @ 100 C
Time Since Circulation: 12 hrs
Time Since Logged: 4 hrs
Max. Rec. Temp.: 100 C
Equipment Location: Gunsan
Recorded By: H. Gingrich
Witnessed By: [illegible]

Other Services

Field Rerun: ____ This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

	Gamma Ray			Resistance	Density	Caliper
Run No.	1					
Tool Model No.	L-103			L-103	L-103	
Diameter	2.0 in			2.0 in	2.0 in	
Detector Model No.	CP-54			N/A	P	
Type	Scint				13	
Length	4					
Length				1		
Horiz. Scale				10 Ω-m		
Rm @ °F						
Source Model					HDVP	
Serial No.					687	
Isotope					Cs 137	
Strength					125 mC	

General

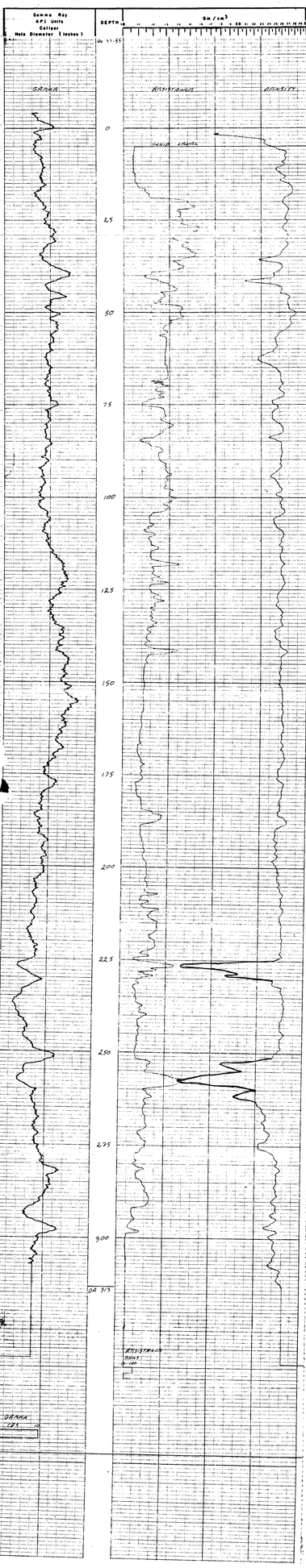
Model Truck No.	2	Source Model	HDVP
Inst. Truck No.	2	Serial No.	687
Location	Gunsan, Korea	Isotope	Cs 137
		Strength	125 mC

LOGGING DATA

General							Gamma Ray						Density		
Run No.	Depths From	To	Speed Ft/Min.	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
1	313	0	12	4	100		5	1	1X	3X

Reference Literature:

Remarks: H. Gingrich



LEXCO TESTING LTD

DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: April 17, 1977

COMPANY: Lexco Testing

HOLE NO.: QU-77-56

APPROX. LOCATION: Line 30+00 9000 Lt ofB/L SEC.___ TWP.___ RGE.___ W.___

SURVEYED LOCATION: 30+00 8754.2 Lt. of B/L

ELEVATION: H. Vincett

DRILLER: 1190'

FROM	TO	LOG	REMARKS
0	45	Till	
45	47	granite	

COMMENTS

WATER HORIZON FT.

LEXCO TESTING LTD

DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: April 27, 1977

COMPANY: Lexco Testing

HOLE NO.: QU-77-57

APPROX. LOCATION: SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: Line 35+00 8758.3 lt of B/L

ELEVATION: 1182'

DRILLER: Vincett

FROM	TO	LOG	REMARKS
0	43	Till	2 coal stringers
43	76	Basalt	

COMMENTS

WATER HORIZON FT.

ex-Quinsam 27(3)e.

LEXCO TESTING LTD.

GAMMA DENSITY & RESISTANCE

67

(L7)

COMPANY LEXCO TESTING LTD.

WELL DRILL HOLE 04-77-57

FIELD QUINSAM 35500 8758.3 4

PROVINCE B.C.

Lsd. ___ Sec. ___ Twp. ___ Rge. ___ W. ___

Other Services

Permanent Datum G.L. Elev. 1182.44 Elev. K.B. ___

Log measured from G.L. ___ ft. above perm. Dat. D.F. ___

Drilling measured from G.L. G.L. ___

Date	25 APRIL 77		
Run No.	1		
Type Log	NUCLEAR RES		
Depth - Driller	26		
Depth - Logger	62		
Bottom logged interval	62		
Top logged interval	0		
Type fluid in hole	WATER		
Salinity, PPM Cl.	n/a		
Density	n/a		
Level	4.5'		
Max. rec. temp. deg. F.	n/a		
Operating rig time	1½ HR		
Recorded by	V. KRANSSA		
Witnessed by	S. GARDINA		

RUN No.	BORE-HOLE RECORD Bit	From	To	CASING RECORD Size	Wgt.	From	To

Fold Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

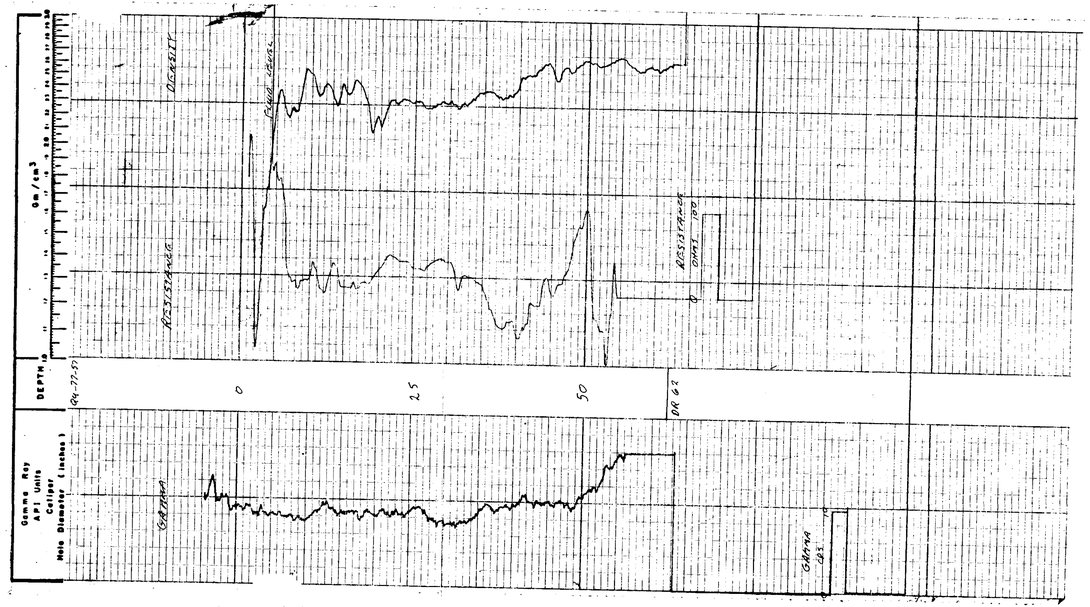
Gamma Ray		Resistance		Density	Caliper
Run No.	1	Run No.	1		
Tool Model No.	L-103	Tool Model No.	L-107	L-103	
Diameter	2.18	Diameter	2.18	2.18	
Detector Model No.	CP-518	Type	MN	MN	
Type	Stand	Spacing		12"	
Length	4				
		Length	1'		
		Hoist. Scale	25 div		
		Rm @ °F			
General				H.D.V.P.	
Hoist Truck No.	2	Source Model		687	
Hoist Truck No.	2	Serial No.		137	
Logging Truck	Gardina	Insulation		CS. RC	
		Strength			

LOGGING DATA

General Depths Run No.	From	To	Speed Ft/Min.	T.C. Sec.	Sens. Settings	Gamma Ray Zero Dis. L or R	API C.R. Units per in. Div.	T.C. Sec.	Sens. Settings	Density Zero Dis. L or R
1	62	0	12	4	100		5		1/16	RC

Reference Literature:

Remarks: H. Hart



LEXCO TESTING LTD
DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: April 27, 1977

COMPANY: Lexco Testing

HOLE NO.: OU-77-58

APPROX. LOCATION: SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: Line 35+00 9096 Lt of B/L

ELEVATION: 1180'

DRILLER: H. Vincett

FROM	TO	LOG	REMARKS
0	43	Till	
43	71	Basalt	

COMMENTS

WATER HORIZON FT.

Ex-Quinsam 77(3)c

LEXCO TESTING LTD.

GAMMA DENSITY & RESISTANCE

COMPANY LEXCO TESTING LTD. 67

WELL DRILLHOLE QU-77-58 (L8)

FIELD QUINSAM 35100 9075.98 N.

PROVINCE B.C.

Lsd. ___ Sec. ___ Twp. ___ Rge. ___ W. ___

Other Services

Permanent Datum	G.L.	Elev. 1180.22	Elev. K.B.
Log measured from	G.L.	ft. above perm. Dat.	D.F.
Drilling measured from	G.L.		G.L.

Date	25 APRIL 77
Run No.	1
Type Log	RESISTANCE RGS
Depth - Driller	71
Depth - Logger	59
Bottom logged interval	59
Top logged interval	0
Type fluid in hole	WATER
Salinity, PPM Cl.	N/A
Density	N/A
Level	4.5'
Max. rec. temp. deg. F.	N/A
Operating rig time	1½ HR
Recorded by	W. HARNCASTLE
Witnessed by	S. GARDNER

BORE-HOLE RECORD			CASING RECORD		
RUN No.	Bit	From	To	Size	Wgt.	From	To

Fold Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

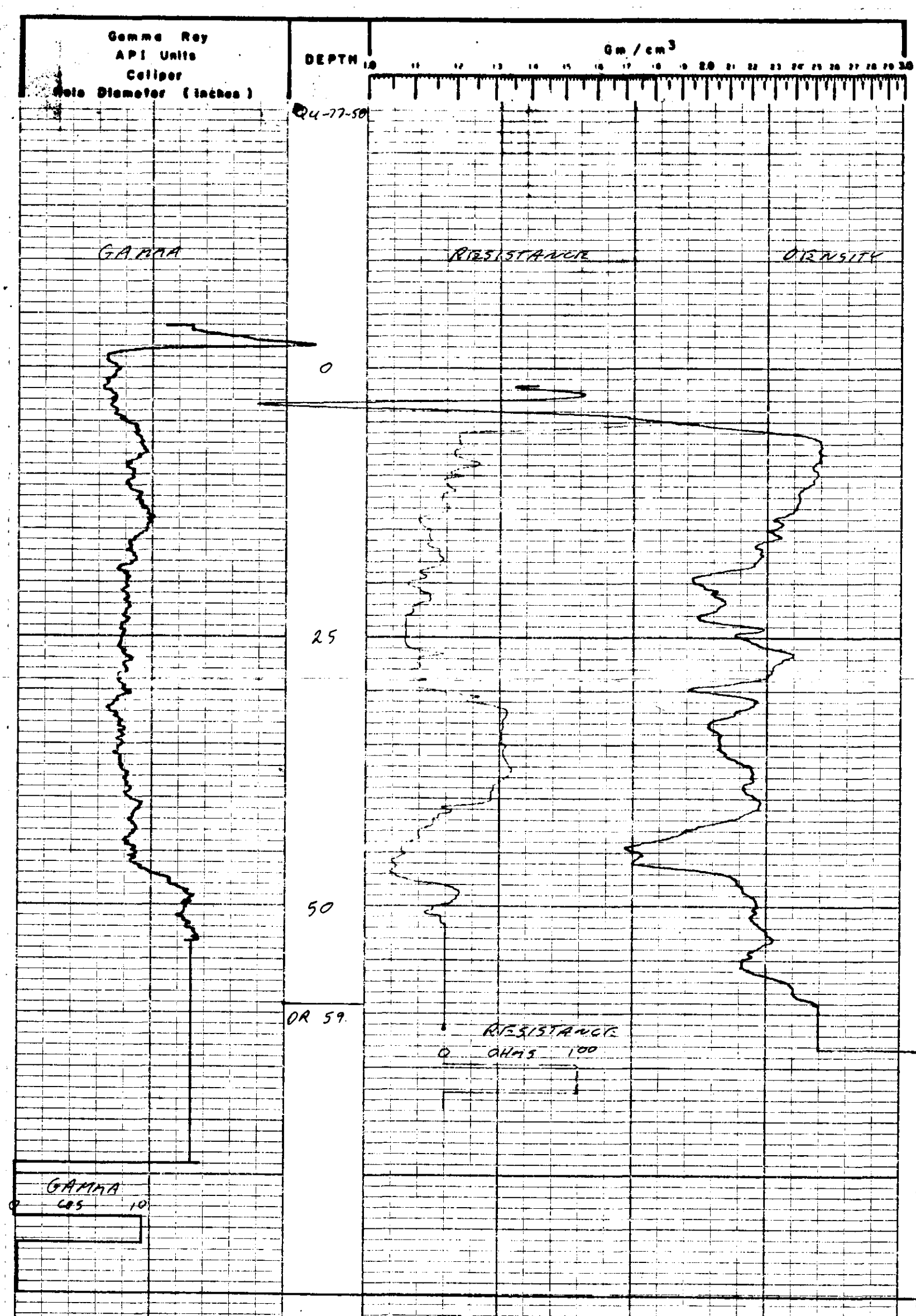
Gamma Ray					Resistance	Density	Caliper
Run No.	1			Run No.	1	1	
Tool Model No.	L-103			Tool Model No.	L-103	L-103	
Diameter	2 1/8			Diameter	2 1/8	2 1/8	
Detector Model No	CP-516			Type	MC	IF	
Type	SCINT			Spacing		13"	
Length	3"						
				Length	1"		
				Horiz. Scale	20 Ω 10K		
General				Rm @ °F			
Hoist Truck No.	2			Source Model		HDVP	
Inst. Truck No.	2			Serial No.		687	
Location	CAMPBELL RIVER			Isotope		Cs 137	
				Strength		125 mC	

LOGGING DATA

General				Gamma Ray				Density			
Run No.	Depths From	Depths To	Speed Ft/Min.	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	
1	59	0	12	4	100		5	1	1K	.5L	

Reference Literature:

Remarks: H. VINCETT



LEXCO TESTING LTD

DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: April 24, 1977

COMPANY: Lexco Testing

HOLE NO.: CU-77-50

APPROX. LOCATION: SEC. TWP. RGE. W.

SURVEYED LOCATION: 38+03 9026 Lt of B/L

ELEVATION: 1175.6'

DRILLER: H. Vincett

FROM	TO	LOG	REMARKS
0	60	till	
60	92	grey sandstone	

COMMENTS

WATER HORIZON FT.

CX - QUINSAM 77(3)C.

LEXCO TESTING LTD.

GAMMA DENSITY & RESISTANCE

67

(L9)

COMPANY LEXCO TESTING LTD.

WELL DRILLHOLE QU-77-59

FIELD QUINSAM 38403 9025.7 4t

PROVINCE B.C.

Lsd. ___ Sec. ___ Twp. ___ Rge. ___ W. ___

Other Services

Permanent Datum G.L. Elev. 1175.6 Elev. K.B. ___

Log measured from G.L. ___ ft. above perm. Dat. D.F. ___

Drilling measured from G.L. G.L. ___

Date	28 APRIL 77		
Run No.	1		
Type Log	NUCLEAR RES		
Depth - Driller	92		
Depth - Logger	76		
Bottom logged interval	76		
Top logged interval	0		
Type fluid in hole	WATER		
Salinity, PPM Cl.	n/a		
Density	n/a		
Level	4.5'		
Max. rec. temp. deg. F.	n/a		
Operating rig time	1/2 HR.		
Recorded by	V. HAUSERA		
Witnessed by	S. GARDNER		

RUN No.	BORE-HOLE RECORD Bit	From	To	CASING RECORD Size	Wgt.	From	To

Fold Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

Gamma Ray	
Run No.	1
Tool Model No.	L-103
Diameter	2 1/8
Detector Model No	CP-56
Type	ECAT
Length	3'

General	
Hoist Truck No.	2
Inst. Truck No.	2
Location	Kamloops

Resistance	
Run No.	1
Tool Model No.	L-103
Diameter	2 1/8
Type	MC
Spacing	1"
Length	1'
Horiz. Scale	1 Ω-m/in
Rm @ °F	

Density	
Source Model	HDVP
Serial No.	687
Isotope	Cs 137
Strength	125 mC

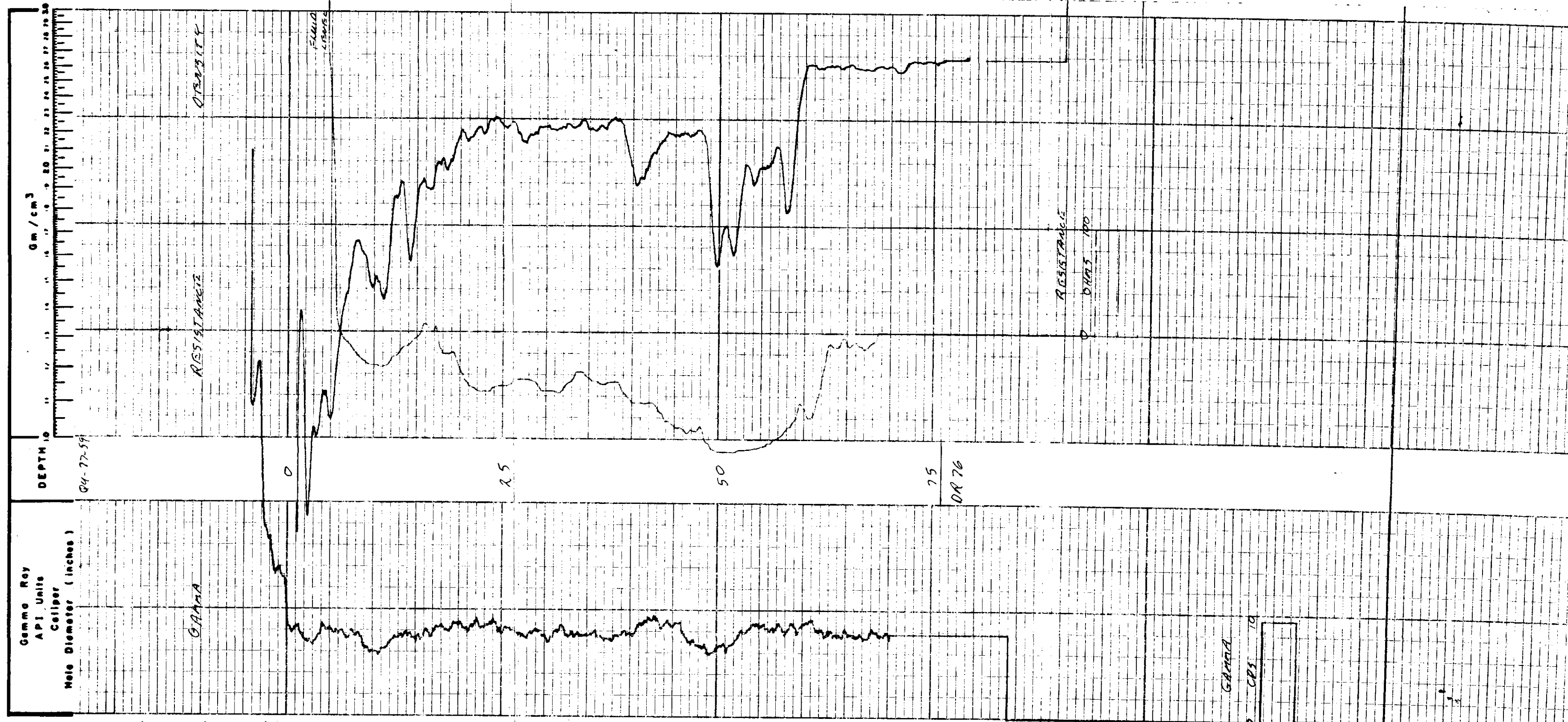
Caliper

LOGGING DATA

General Depths Run No.	From	To	Speed Ft/Min.	T.C. Sec.	Sens. Settings	Gamma Ray Zero Div. L or R	API G.R. Units per Log Div.	T.C. Sec.	Sens. Settings	Density Zero Div. L or R
1	76	0	12	4	100		5	1	1K	5L

Reference Literature:

Remarks: H. Lovatt



LEXCO TESTING LTD

DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: April 25, 1977

COMPANY: Lexco Testing

HOLE NO.: CU-77-60 Corehole

APPROX. LOCATION: SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: line 50+00 8982.4 Lt of B/L

ELEVATION: 1123'

DRILLER: D Broen

FROM	TO	LOG	REMARKS
0	8	Till Core #	1-20-28
8	24	brown shale	2-28-36
24	34	coal	3-36-44
34	52	brown shale	4-44-52

COMMENTS

WATER HORIZON FT.

LEXCO TESTING LTD
DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: April 24, 1977

COMPANY: Lexco Testing

HOLE NO.: DH-77-60

APPROX. LOCATION: SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: Line 50+00 8982.4 Lt of B/L

ELEVATION: 1123'

DRILLER: H. Vincett

FROM	TO	LOG	REMARKS
0	6	brown sandstone	
6	14	grey sandstone	
14	25	siltstone	
25	41	coal	
41	45	carbonaceous shale	
45	60	Brown shale	

COMMENTS

WATER HORIZON FT.

LUSCAR LTD. corehole log

HOLE NO. QU-77-60

line 50+00 8982 ' Lt of B/L Apr.25,1977

CORE NO.	CORE FOOTAGES DRILLED FROM	TO	TOT.	RECOVERED SEC.	TOT.	GEOLOGICAL DESCRIPTION: LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.	TRUE DEPTH
1	20	28	8.2				
				2.00		siltstone;med to dark grey;alternating	
						massive and fractured bands of 1-3";fine	
						sandstone layers throughout	
				1.50		siltstone;massive;unbroken;med grey hard;	
				1.45		siltstone;med grey;softer and shalier;	
						fissile;coaly imprints;	
				.75		crushed coal;soft;crushed by coring action	
						bright;fairly clean;	
				1.50		coal;clean;unbroken and massive; bright	
						and blocky;some visible pyrite and calcite	
						fairly hard	
				.35		mudstone; 50% coal content;soft;crushed;	
				.75		coal;bright and blocky;fairly massive;some	
						visible pyrite and calcite	
2	28	36	8.0				
				1.15		coal;bright and blocky; as above;hard;	
						some visible pyrite and calcite;	
				.75		coal;softer;crushed;	
				.90		coal;hard;massive;bright;blocky pyrite	
						and calcite on cleats	
				.75		coal;softer;crushed;	
				.90		coal;hard;massive;bright;blocky pyrite	
						and calcite on cleats	
				.75		coal;soft;crushed;becoming dirty	
				.25		mudstone;soft;plastic; 50%coaly	
				.45		coal;soft;crushed;some dirt	
				.15		mudstone;soft;med grey; 25% coaly	
				1.1		bony coal;dirty;silty matrix;bright coaly	
						bands	
	TOTALS					÷ X 100 = % REC. SEAM	
						÷ X 100 = % TOT. REC. SEAM(S)	

LUSCAR LTD. corehole log

HOLE NO.	QU-77-60
PAGE 2	OF 3

CORE NO.	CORE FOOTAGES DRILLED FROM	TO	TOT.	RECOVERED SEC.	TOT.	GEOLOGICAL DESCRIPTION: LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.	TRUE DEPTH
				1.35		siltstone;light to med grey; clean; alternating soft and hard bands;dry; powdery on outside	
3	36	44	7.75				
				1.45		siltstone;as above	
				.15		coal;bright and dull banded	
				.40		siltstone;dark greyish brown; thin bright coaly bands throughout;	
				1.40		siltstone;dark to med grey;massive;hard	
				2.00		sandstone;med grey;fine grained with lenses of siltstone;massive; hard	
				.70		siltstone;very hard; med grey; some coaly material;garnet present;	
				.40		coal;soft;fissile;banded;abundant pyrite finely disseminated;	
				.10		siltstone;med brown;soft;dry;powdery	
				.45		coal;soft;crushed;abundant pyrite and calcite	
				.05		siltstone;abundant garnet;bright coaly bands;dark grey	
				.65		siltstone;as above;garnet and calcite, pyrite;soft;bright coaly bands	
6	44	52	7.35				
				1.15		siltstone;med grey; as above;fine coaly laminae throughout; coalier at base;	
				2.55		siltstone;harder;loaded and squeezed as above	
				.1		coal;massive abundant pyrite;soft;crushed	
				.1		siltstone;shiny coal bands	
				.75		siltstone;soft;powdery;dry;coaly	
	TOTALS					÷ X 100 = % REC. SEAM	
						÷ X 100 = % TOT. REC. SEAM(S)	

LUSCAR LTD. corehole log

HOLE NO. QU-77-60

CORE NO.	CORE FOOTAGES					GEOLOGICAL DESCRIPTION	TRUE DEPTH
	DRILLED			RECOVERED		: LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.	
	FROM	TO	TOT.	SEC.	TOT.		
				2.65		siltstone; soft becoming hard and massive at base; coaly bands.	
TOTALS						÷ X 100 = % REC. SEAM ÷ X 100 = % TOT. REC. SEAM(S)	

CX- QUINSAM 77(3)C.

LEXCO TESTING LTD.

GAMMA DENSITY & RESISTANCE

67

LIO

COMPANY LEXCO TESTING LTD.

WELL DRILLHOLE QU-77-60

FIELD QUINSAM 50+00 8982.4 LL

PROVINCE B.C.

Lsd. ___ Sec. ___ Twp. ___ Rge. ___ W. ___

Other Services

Permanent Datum G.L. Elev. 1122.7 Elev. K.B. ___

Log measured from G.L. ___ ft. above perm. Dat. D.F. ___

Drilling measured from G.L. G.L. ___

Date	25 MARCH 77		
Run No.	1		
Type Log	NUCLEAR RES		
Depth - Driller	60		
Depth - Logger	57		
Bottom logged interval	57		
Top logged interval	0		
Type fluid in hole	WATER		
Salinity, PPM Cl.	n/a		
Density	n/a		
Level	15'		
Max. rec. temp. deg. F.	n/a		
Operating rig time	1/2 HR		
Recorded by	L. KAUGGIA		
Witnessed by	S. GARDNER		

RUN No.	BORE-HOLE RECORD Bit	From	To	CASING RECORD Size	Wgt.	From	To

This Heading and Log Conforms to API RP 33

Fold Here

EQUIPMENT DATA

Gamma Ray		Resistance		Density		Caliper
Run No.	1	Run No.	1	Run No.	1	
Tool Model No.	L-103	Tool Model No.	L-103	Tool Model No.	L-103	
Diameter	2 1/8	Diameter	2 1/8	Diameter	2 1/8	
Detector Model No.	GR 516	Type	MC	Type	15	
Type	SCINT	Spacing	13"	Spacing	13"	
Length	3"	Length	1"	Length		
		Horiz. Scale	50 ADJ	Horiz. Scale		

General

Rm @ °F		H.D.V.P	
Source Model		687	
Serial No.		Cs 137	
Isotope		125 mC	
Strength			

General				
Hoist Truck No.	2			
Inst. Truck No.	2			
Location	CANADIAN KIWA			

LOGGING DATA

| Gamma Ray | | | | | | |

LEXCO TESTING LTD

DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: April 25, 1977

COMPANY: Lexco Testing

HOLE NO.: 9U-77-61 Line 50 8000 ft left

APPROX. LOCATION: SEC. TWP. RGE. W.

SURVEYED LOCATION: Line 50+00 7941 Lt

ELEVATION: 1098'

DRILLER: H. Vincett

FROM	TO	LOG	REMARKS
0	58	Till	
58	70	coal	
72	101	brown shale	
101	119	basalt	
TD	119		

COMMENTS

WATER HORIZON FT.

EX- QUINSAM 77(3)C.

LEXCO TESTING LTD.

GAMMA DENSITY & RESISTANCE

67

L11

COMPANY LEXCO TESTING LTD.

WELL DRILLHOLE QU-77-61

FIELD QUINSAM 50+00 7940.7 LT

PROVINCE B.C.

Lsd. ___ Sec. ___ Twp. ___ Rge. ___ W. ___

Other Services

Permanent Datum G.L. Elev. 1098.4 Elev. K.B. ___

Log measured from G.L. ___ ft. above perm. Dat. D.F. ___

Drilling measured from G.L. G.L. ___

Date	25 APR 77			
Run No.	1			
Type Log	NUCLEAR RES			
Depth - Driller	119			
Depth - Logger	115			
Bottom logged interval	115			
Top logged interval	0			
Type fluid in hole	WATER			
Salinity, PPM Cl.	n/a			
Density	n/a			
Level	FULL			
Max. rec. temp. deg. F.	n/a			
Operating rig time	1/2 HR			
Recorded by	V. KRUGER			
Witnessed by	S. GARANTA			

RUN No.	BORE-HOLE RECORD Bit	From	To	CASING RECORD Size	Wgt.	From	To
1	3 7/8	0	TD				

This Heading and Log Conforms to API RP 33

Field Note

EQUIPMENT DATA

	Gamma Ray	Resistance	Density	Caliper
Run No.	1	1	1	
Tool Model No.	L-103	L-103	L-103	
Diameter	2 1/8	2 1/8	2 1/8	
Detector Model No.	CP-516			
Type	SCINT			
Length	3"	1"		
Hole Diam. Scale		SCALE		
Rm @ °F				
Source Model			HDVP	
Serial No.			687	
Isotope			Cs 137	
Strength			125 mC	

General

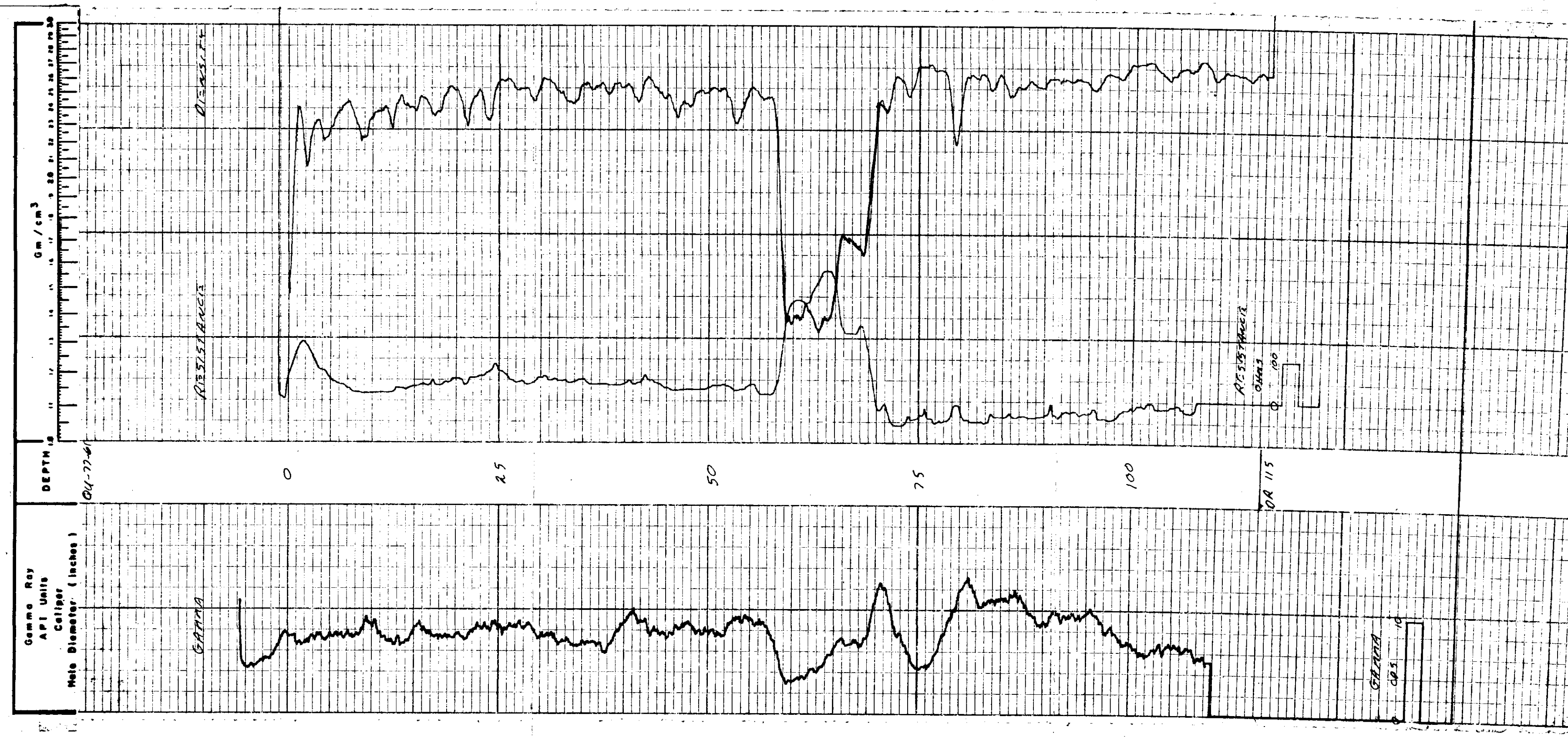
Hoist Truck No.	2
Inst. Truck No.	2
Location	CANADA RIVER

LOGGING DATA

General Depths Run No.	From	To	Speed Ft/Min.	T.C. Sec.	Sens. Settings	Zero Dis. L or R	API G.R. Units per Log Div.	T.C. Sec.	Sens. Settings	Density Zero Dis. L or R
1	115	0	12	4	100		5	1	1K	5K

References Literature:

Remarks: H. Uhart



LEXCO TESTING LTD
DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: April 26, 1977

COMPANY: Lexco Testing

HOLE NO.: QU - 77- 62

APPROX. LOCATION: _____ SEC. ____ TWP. ____ RGE. ____ W. ____

SURVEYED LOCATION: 50+00 6028.6 Lt of B/L

ELEVATION: 1123'

DRILLER: H. Vincett

FROM	TO	LOG	REMARKS
0	5	brown sandstone	
5	122	grey sandstone	
125	136	brown shale	
136	145	siltstone	
145	151	brown shale	
151	152	siltstone	
152	160	brown shale	
160	168	siltstone	
168	179	coal	
179	185	coal (shale partings)	
185	193	brown shale (coal partings)	
193	205	grey sandstone	
205	216	green sandstone	
216	231	basalt	

COMMENTS _____

WATER HORIZON _____ FT. _____

Ex Gunderson Field.

LEXCO TESTING LTD.

GAMMA DENSITY & RESISTANCE

67

COMPANY: LEXCO TESTING LTD.
WELL: Williams Gas 32-6A (L-18)
FIELD: Gunderson
PROVINCE: B.C.

Lat. Sec. Twp. Rge. W
Permanent Datum: G.L. Elev. 1132.2
Log measured from: G.L. ft. above perm. Dat.
Drilling measured from: G.L. D.F. G.L.
Elev. G.L.

Other Services

Run No. 1
Type Log: Gamma Density
Date: 14-Mar-77
Depth - Driller: 229
Depth - Logger: 229
Top logged interval: 0
Type fluid in hole: Gas Fresh
Salinity, PPM Cl: n/a
Density: n/a
Level: n/a
Max. rec. temp. deg. F: n/a
Operating rig time: n/a
Witnessed By: H. Vinkoff

BIT RECORD

No.	Size	From	To

BORE-HOLE RECORD

From	To	Size

CASING RECORD

Wgt.	From	To

Fold Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

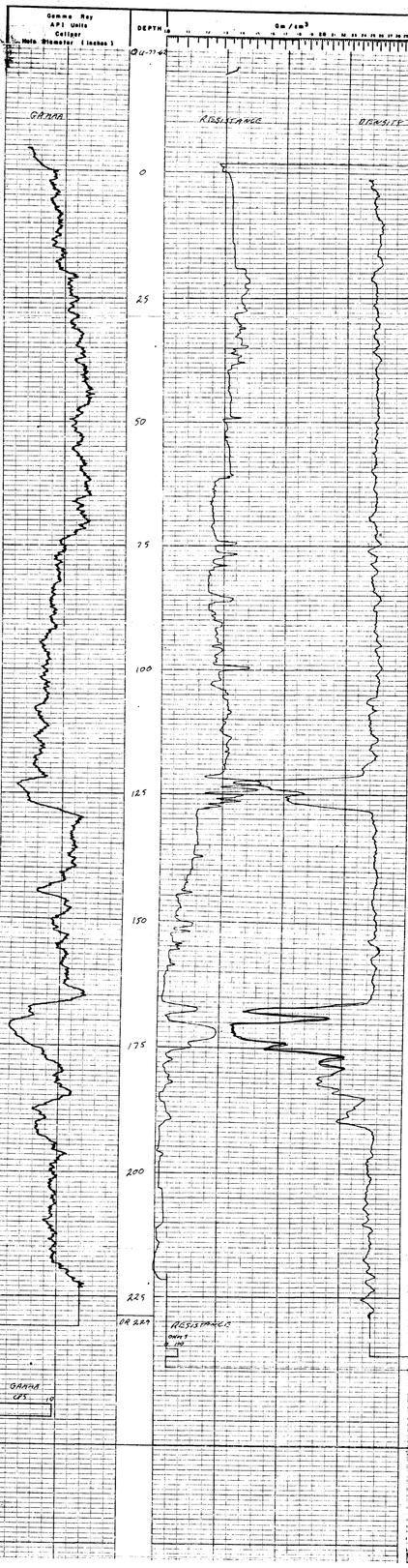
Gamma Ray				Resistance	Density	Caliper
Run No.	1			Run No.		
Tool Model No.	L-103			Tool Model No.	L-103	L-103
Diameter	2 7/8			Diameter	2 7/8	2 7/8
Detector Model No.	CP-56			Type	n/a	F
Type	SCINT			Spacing		13"
Length	2'			Length	1'	
General				Horiz. Scale	10 cm/div	
Hoist Truck No.	2			Rm @ °F		
Inst. Truck No.	2			Source Model		HDVP
Location	Campbell River			Serial No.		687
				Isotope		Cs 137
				Strength		125 mC

LOGGING DATA

Run No.	Gamma Ray General Depths From	To	Speed Ft/Min	T.C. Sec.	Sens. Settings	Zero Dis. L or R	API G.R. Units per Log Div.	Density T.C. Sec.	Sens. Settings	Zero Dis. L or R
1	229	0	12	.1	40	125	5	1	1.2	.5R
									1	

Reference Literature:

Remarks: H. Vinkoff



LEXCO TESTING LTD
DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: April 26 1977

COMPANY: Lexco Testing

HOLE NO.: QU - 77- 63

APPROX. LOCATION: SEC. TWP. RGE. W.

SURVEYED LOCATION: Line 25+17 4946.8 Lt

ELEVATION: 1139

DRILLER: D Broen

FROM	TO	LOG	REMARKS
0	7	Till	
7	47	sandstone	
47	57	coal with shale stringers	
57	60	brown shale	
60	64	coal	
64	69	brown shale	
69	80	gray sandstone	
80	105	green sandstone	

COMMENTS

WATER HORIZON FT.

LEXCO TESTING LTD
DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: April 26, 1977

COMPANY: Lexco Testing

HOLE NO.: QU-77-63

APPROX. LOCATION: _____ SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: Line 25+00

ELEVATION: 1139

DRILLER: D. Broen

FROM	TO	LOG	REMARKS
0	45	Sandstone	Core #1-45-54
			#2-54-62
			#3-62-71

COMMENTS _____

WATER HORIZON _____ FT. _____

LUSCAR LTD. corehole log

HOLE NO. QU-77-63

PAGE 1 OF 2

line 25+00 4900Lt April 25, 1977

CORE NO.	CORE FOOTAGES DRILLED FROM	TO	TOT.	RECOVERED SEC.	TOT.	GEOLOGICAL DESCRIPTION: LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.	TRUE DEPTH
1	45	54	9.35				
				2.40		Sandstone; light to med grey;massive	
						at top;fractured at base; coal lenses	
						in the fractued zone	
				.25		coal;bright and blocky;massive breaks	
						cleanfrom sandstone calcite on fractures;	
						some pyrite finely disseminated	
				.60		sandstone; dark grey;fine grained; coal	
						lenses;pyritic;	
				.15		coal;bright;blocky;breaks clean	
				.05		sandstone;fine grained as above; coaly	
				2.75		coal;breaks clean from siltstone;bright	
						and blocky;massive;pyrite very finely	
						disseminated; calcite in very fine crystal	
				.30		sandstone;med grained, med grey;with coal	
						stringers	
				1.95		coal;massive;bright and blocky breaks	
						clean;pyrite and calcite on cleats	
				.45		sandstone;med grained; med grey	
				.40		coal;softer;much more pyrite;calcite;	
						more fractured	
2	54	62	8.0'				
				1.8		siltstone;fractured area; formation is	
						soft;crushed and milled; fracturing at	
						60° to core axis; grading downward from	
						siltstone to fine sandstone.	
				1.25		coal;bright and blocky but crushed	
						especially at top; pyrite and calcite	
				.25		sandstone;fine frained; med grey; contains	
						fractured at 60° to core axis;	
	TOTALS					÷ X 100 = % REC. SEAM	
						÷ X 100 = % TOT. REC. SEAM(S)	

LUSCAR LTD. corehole log

HOLE NO. QU-77-63

CORE NO.	CORE FOOTAGES DRILLED FROM	TO	TOT.	RECOVERED SEC.	TOT.	GEOLOGICAL DESCRIPTION: LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.	TRUE DEPTH
				.75		coal;crumbly and bony;pyrite and calcite	
				1.35		siltstone;med grey;badly crushed and rolled	
						fault zone; fractures at 30° to core axis	
				1.30		siltstone;med to dark grey; grading into	
						coal;coaly stringers throughout;pyritic;	
						finely disseminated;calcite	
				1.35		coal;breaks clean;bright and blocky some	
						pyrite and calcite in bony lenses;massive	
						garnets	
3	62	71	7.8				
				.40		coal;as above;crushed;shiny;	
				.95		sandstone with coal stringers; dark grey;	
						greater than 50% carbon	
				.35		coal;clean;crushed;calcite;pyrite;	
				.45		siltstone;crushed;coaly;pyritic	
				.70		sandstone;fine grained;dark grey;coal	
						particles;	
				2.05		mudstone;crushed;soft;crushed coal string-	
						ers	
				.70		crushed coal;mudstone mixed throughout	
						60% coal;soft;	
				.35		mudstone;as above;soft;crushed;	
				.30		crushed coal;mudstone mixed	
				.75		sandstone;coal stringers;fine grained;	
						dark grey;abundent calcite;bony lenses	
	TOTALS					÷ X 100 = % REC. SEAM	
						÷ X 100 = % TOT. REC. SEAM(S)	

ex- QUINSAM 77(3)c.

LEXCO TESTING LTD.

GAMMA DENSITY & RESISTANCE

67
L13

COMPANY LEXCO TESTING LTD.

WELL DRILL HOLE QU-77-63

FIELD QUINSAM 2617 4946.84

PROVINCE B.C.

Other Services

Lsd. ___ Sec. ___ Twp. ___ Rge. ___ W. ___

Permanent Datum G.L. Elev. 1138.7 Elev. K.B. ___

Log measured from G.L. ___ ft. above perm. Dat. D.F. ___

Drilling measured from G.L. G.L. ___

Date	26 APRIL 77		
Run No.	1		
Type Log	RESISTANCE		
Depth - Driller	105		
Depth - Logger	103		
Bottom logged interval	103		
Top logged interval	0		
Type fluid in hole	WATER		
Salinity, PPM Cl.	n/a		
Density	n/a		
Level	FULL		
Max. rec. temp. deg. F.	n/a		
Operating rig time	1/2 HR		
Recorded by	V. KRUGER		
Witnessed by	S. GAMONTA		

RUN No.	BORE-HOLE RECORD Bit	From	To	CASING RECORD Size	Wgt.	From	To
1	9 1/4	0	17	7		0	17
	6	17	TD				

Field Note

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

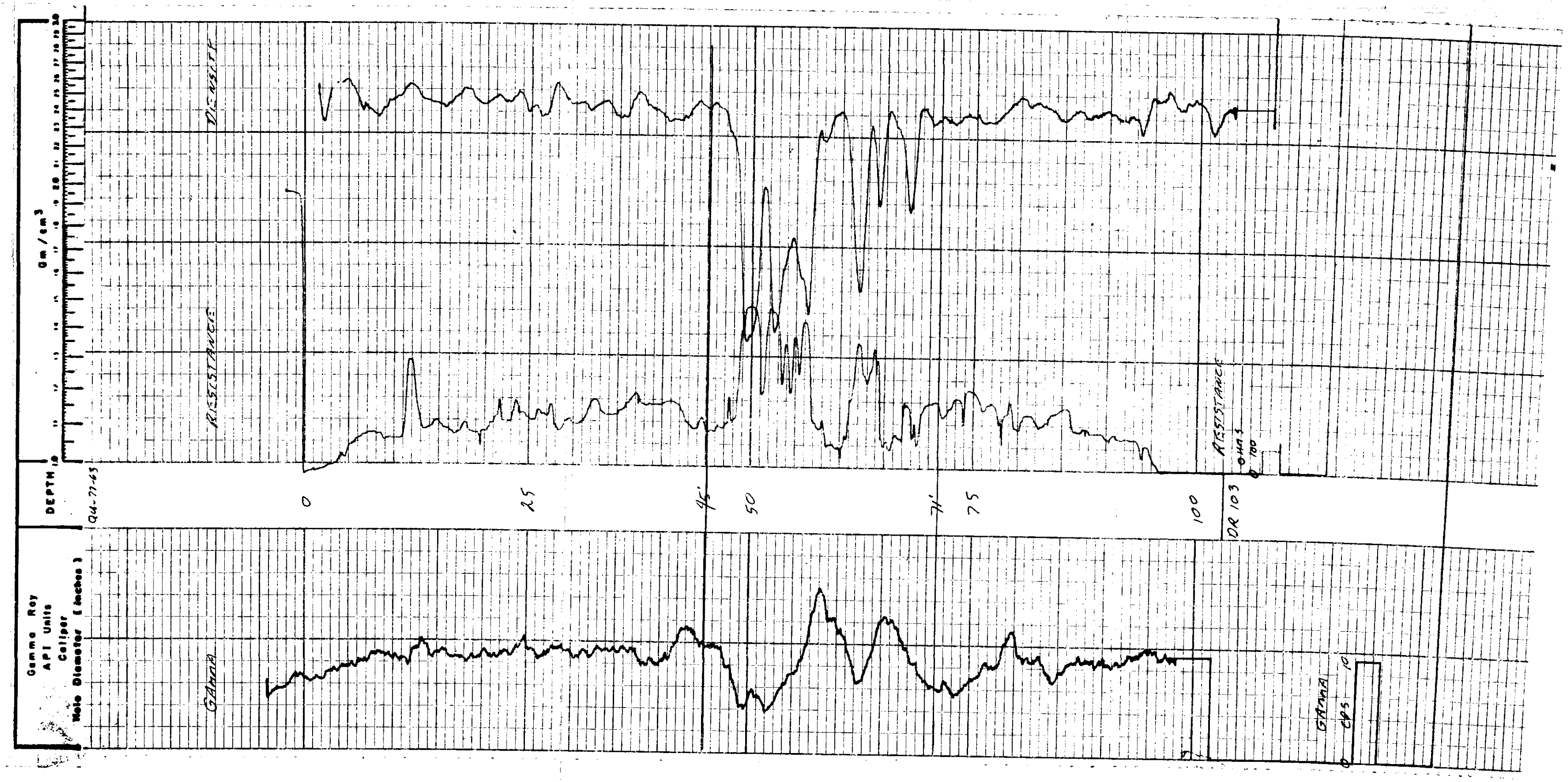
Gamma Ray		Resistance		Density	Caliper
Run No.	1	Run No.	1	1	
Tool Model No.	L-103	Tool Model No.	L-103	L-103	
Diameter	2 1/8	Diameter	2 1/8	2 1/8	
Detector Model No.	CP-518	Type	AF	F	
Type	SCINT	Spacing		13"	
Length	3"	Length	1		
		Horiz. Scale	100 ft/in		
		Rm @ °F			
General		Source Model		HOVP	
		Serial No.		687	
Hoist Truck No. 2		Isotope		Co 137	
Inst. Truck No.		Strength		125 mC	
Location	Cabrada Area				

LOGGING DATA

General				Gamma Ray						Density			
Run No.	Depths From	Depths To	Speed Ft/Min.	T.C. Sec.	Sens. Settings	Zero Dis. L or R	API G.R. Units per Leg Div.	T.C. Sec.	Sens. Settings	Zero Dis. L or R
1	103	0	12	4	1000		5	1	1R	.52

Reference Literature:

Remarks: O. Baron



LEXCO TESTING LTD

DRILLHOLE REPORT

COAL FIELD: Campbell River, B.C. DATE: April27, 1977

COMPANY: Lexco Testing

HOLE NO.: QU-77-64

APPROX. LOCATION: _____ SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: Line 50+00 5482 Lt pf B/L

ELEVATION: 1086'

DRILLER: H. Vincett

FROM	TO	LOG	REMARKS
0	4	Brown sandstone	
4	12	grey sandstone	
12	30	green sandstone	
30	64	grey sandstone	
64	78	brown shale	coal stringers
78	93	siltstone	
93	95	coal	
95	99	brom shale	
99	119	siltstone	
119	130	hard black sandstone	

COMMENTS _____

WATER HORIZON _____ FT. _____

LEXCO TESTING LTD.

GAMMA DENSITY & RESISTANCE

COMPANY LEXCO TESTING LTD.

WELL Drill Hole Div 2-1964

FIELD Quinsam Steel Site

PROVINCE B.C.

67

44

Ex-Quinsam Pole

Lsd ___ Sec. ___ Twp. ___ Rge. ___ W.

Permanent Datum G.L. Elev. -1.5'

Log measured from G.L. ___ ft. above perm. Dat.

Drilling measured from G.L.

Date	23-Dec-77
Run No.	1
Type Log	Resistance
Depth - Driller	126
Depth - Logger	126
Bottom logged interval	126
Top logged interval	0
Type fluid in hole	water
Salinity, PPM Cl.	n/a
Density	n/a
Level	full
Max. rec. temp. deg. F.	n/a
Operating rig times	1½ hr
Recorded by	S. Wilcox
Witnessed by	S. Gorsuch

Elev. K.B. ___ D.F. ___ G.L. ___

Other Services

BORE-HOLE RECORD				CASING RECORD			
RUN No.	Bit From	To	Size	Wgt.	From	To
1	6"	126	3½		0	126

Fold Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

Gamma Ray				Resistance	Density	Caliper
Run No.	1				1	
Tool Model No.	L-103			L-103	L-103	
Diameter	2⅛			2⅛	2⅛	
Detector Model No.	CP-516			712	5"	
Type	SCINT				13"	
Length	3"					
General						
Hoist Truck No.	2					
Inst. Truck No.	2					
Location	CAMPBELL RIVER					

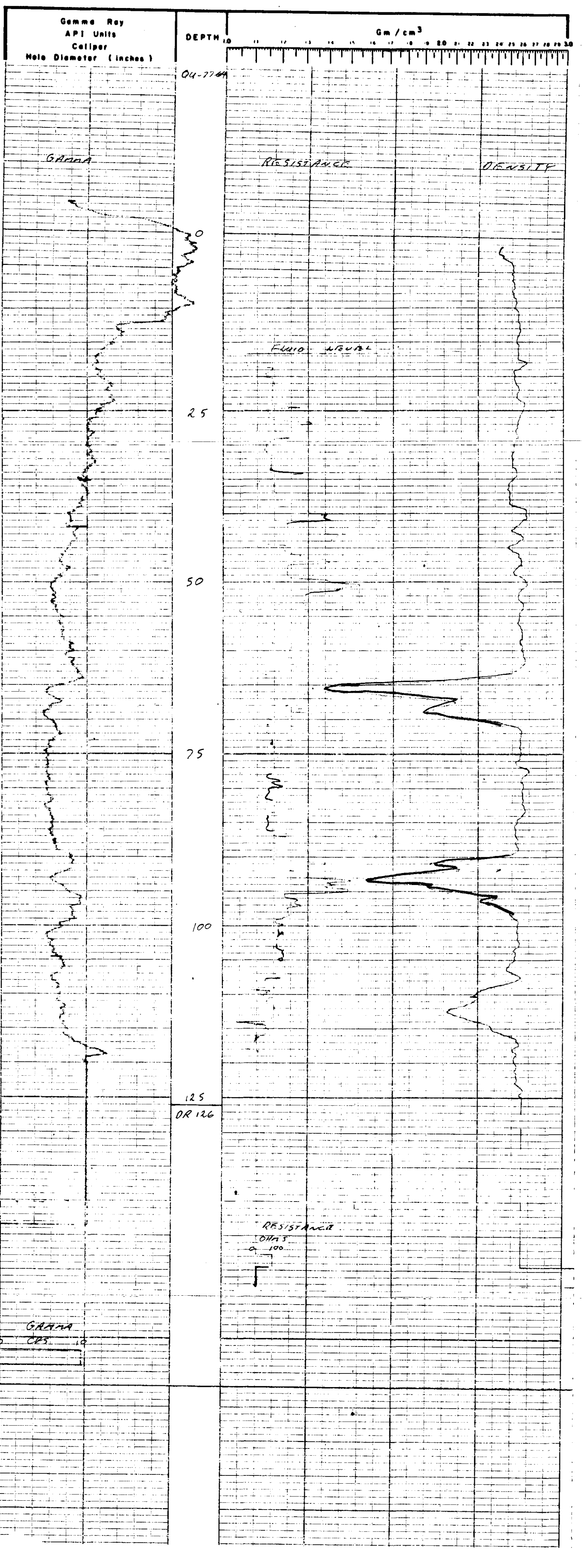
	Resistance	Density
Run No.		1
Tool Model No.	L-103	L-103
Diameter	2⅛	2⅛
Type	712	5"
Spacing		13"
Length	1"	
Horiz. Scale	100 Ω/in	
Rm @ °F		
Source Model		HDVP
Serial No.		687
Isotope		Cs 137
Strength		125 mC

LOGGING DATA

General				Gamma Ray				Density			
Run No.	Depths From	To	Speed Ft/Min.	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
1	126	0	12	4	100		5	1	1K	55

Reference Literature:

Remarks: W. Wilcott



LEXCO TESTING LTD

DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: April 27,1977

COMPANY: Lexco Testing

HOLE NO.: QU-77-65

APPROX. LOCATION: SEC. TWP. RGE. W.

SURVEYED LOCATION: Line 40+00 7988 lt of B/L

ELEVATION: 1179'

DRILLER: D. Boen

FROM	TO	LOG	REMARKS
0	114	sandstone	
114	121	coal	
121	134	brown shale	
134	170	brown sandstone	
170	183	coal	
183	200	brown sandstone	
200	225	basalt	

COMMENTS

WATER HORIZON FT.

LEXCO TESTING LTD.

GAMMA DENSITY & RESISTANCE

COMPANY LEXCO TESTING LTD.

WELL Okanagan Dr. 22-65

FIELD Okanagan Lexco Test Site

PROVINCE B.C.

Lsd. Sec. Twp. Rge. W

Permanent Datum G.L. Elev. 0

Log measured from G.L. ft. above perm. Datum

Drilling measured from G.L. D.F. G.L.

Other Services

Elev. K.B. D.F. G.L.

Field Note

This Heading and Log Conforms to API RP 33

RUN No.	BIT From	BIT To	BORE-HOLE RECORD Size	WGT.	Type	CASING RECORD Size	WGT.	Type	From	To
1	0	223	2 1/8							

Recorded by S. Lindsay

Witnessed by S. Lindsay

Run No.	1
Date	Oct 7-65
Depth - Driller	223
Depth - Logger	223
Bottom logged interval	223
Top log interval	0
Type fluid in hole	Air
Salinity PPM Cl.	n/a
Level	Air
Max. rec. temp. deg F	n/a
Estimated cement top	n/a

EQUIPMENT DATA

Gamma Ray					Resistance	Density	Caliper
Run No.				Run No.			
Tool Model No.	L-103			Tool Model No.	L-103	L-103	
Diameter	2 1/8			Diameter	2 1/8	2 1/8	
Detector Model No.	CP-516			Type	MC	C	
Type	Scint			Spacing		12"	
Length	3'						
				Length			
				Horiz. Scale	1/100 A 100		
General				Rm @ °F			
Hoist Truck No.	2			Source Model		HDVP	
Inst. Truck No.	2			Serial No.		687	
Location	Okanagan	River		Isotope		Cs 137	
				Strength		125 mC	

LOGGING DATA

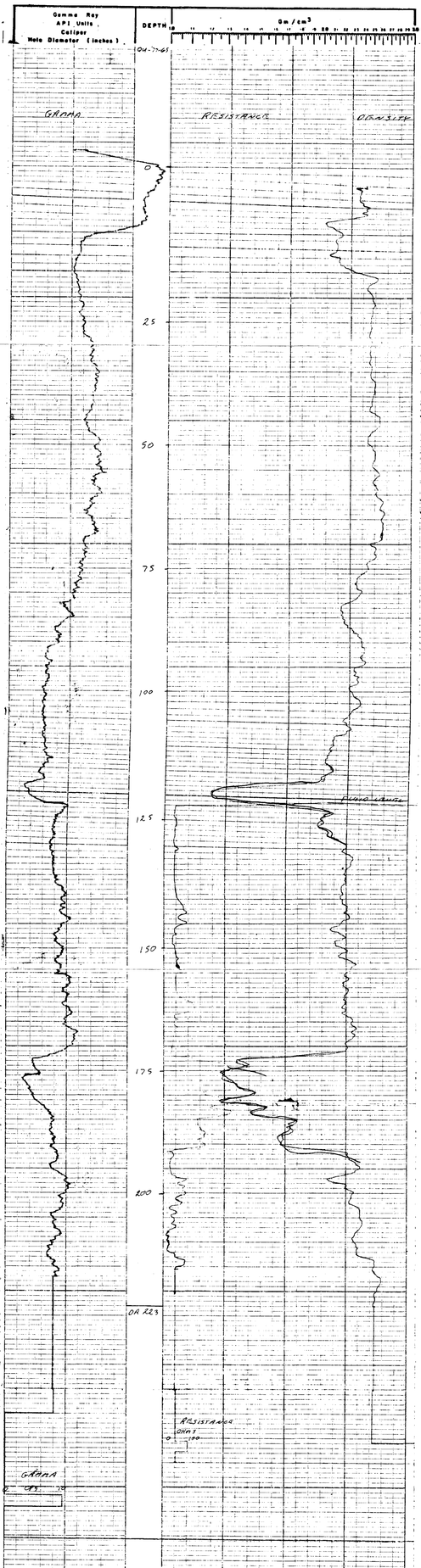
General Depths Run No.	From	To	Speed Ft/Min.	Gamma Ray T.C. Sec.	Sens. Settings	Zero Div. L or R	API G.R. Units per Log Div.	Density T.C. Sec.	Sens. Settings	Zero Div. L or R
1	223	0	12	4	100		5	1	1K	2.C

Reference Literature:

Remarks: R. Hanson

Hole dried not hold water

3 Ft shift in depth track



LEXCO TESTING LTD

DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: April 29, 1977

COMPANY: Lexco Testing

HOLE NO.: GU-77-66 Line 25

APPROX. LOCATION: SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: Line 25+00 5408 Lt of B/L

ELEVATION: 1175'

DRILLER: H. Vincett

FROM	TO	LOG	REMARKS
0	5	brown sandstone	
5	12	grey sandstone	
12	13	coal	
13	34	brown shale	coal stringer at 21'
34	42	green sandstone	
42	75	grey sandstone	
75	87	brown shale	coal stringer at 85
87	93	grey sandstone	
93	105	basalt	

COMMENTS

WATER HORIZON FT.

Ex-Quinsam 77(3)c.

LEXCO TESTING LTD.

GAMMA DENSITY & RESISTANCE

67

L16

COMPANY LEXCO TESTING LTD.

WELL DRILL HOLE QU-77-66

FIELD QUINSAM 25+00 S 408.4 W

PROVINCE B.C.

Lsd. ___ Sec. ___ Twp. ___ Rge. ___ W. ___

Other Services

Permanent Datum G.L. Elev. 1174.9 Elev. K.B. ___

Log measured from G.L. ___ ft. above perm. Dat. D.F. ___

Drilling measured from G.L. G.L. ___

Date	29 APRIL 77
Run No.	1
Type Log	NUCLEAR RES
Depth - Driller	105
Depth - Logger	99
Bottom logged interval	99
Top logged interval	0
Type fluid in hole	WATER
Salinity, PPM Cl.	n/a
Density	n/a
Level	FULL
Max. rec. temp. deg. F.	n/a
Operating rig time	1/2 HR.
Recorded by	V. KRUEGER
Witnessed by	S. GARANICH

RUN No.	BORE-HOLE RECORD Bit	From	To	CASING RECORD Size	Wgt.	From	To

This Heading and Log Conform to API RP 33

Fold Here

EQUIPMENT DATA

	Gamma Ray	Resistance	Density	Caliper
Run No.	1	1	1	
Tool Model No.	L-103	L-103	L-103	
Diameter	2.1/8	2.1/8	2.1/8	
Detector Model No.	CP-516			
Type	Scint.	DC	F	
Length	3'		13"	
Horiz. Scale		1"		
Rm @ °F		SCALE		
Source Model			HDVP	
Serial No.			687	
Isotope			Cs 137	
Strength			125 mC	

General

Hoist Truck No.	2
Inst. Truck No.	2
Location	Campbell River

LOGGING DATA

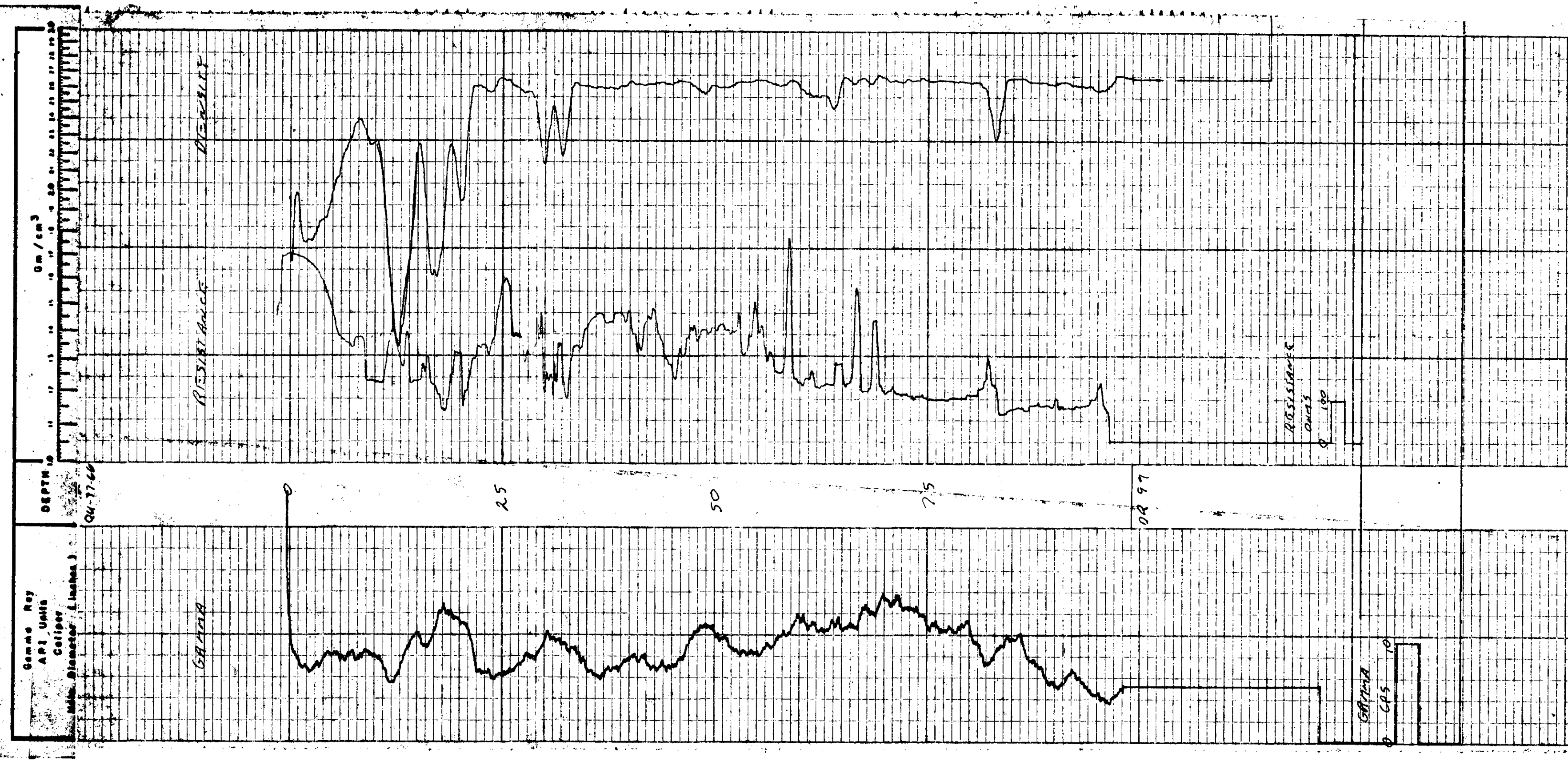
General

Run No.	Depths From	To	Speed Ft./Min.	T.C. Sec.	Sens. Settings	Zero Div. L or R
1	99	0	12	4	100	

	Gamma Ray			Density	
	API G.R. Units per Log Div.	T.C. Sec.	Sens. Settings	Zero Div. L or R	
1	5	1	1K	5L	

Remarks: H. Kinart, Assist. Dr. 1st Log

Reference Literature:



LEXCO TESTING LTD
DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: April 30 1977

COMPANY: Lexco Testing

HOLE NO.: QU-77-67

APPROX. LOCATION: SEC. TWP. RGE. W.

SURVEYED LOCATION: 87+86 1510.6 Rt.

ELEVATION: 985

DRILLER: D Broen

FROM	TO	LOG	REMARKS
0	7	till	425-448 Red shale
7	180	sand stone	448-454 Green sandstone
180	185	brown shale	458-482 Red shale
185	187	coal	482-490 Bisalt
187	190	brown shale	
190	191	coal	
191	198	brown shale	
198	200	coal	
200	205	brown shale	
205	308	grey sandstone	
308	320	brown shale	
320	360	grey sandstone	
260	377	brown shale with coal stringers	
377	398	coal	
398	413	brown shale	
413	425	green sandston	

COMMENTS

WATER HORIZON FT.

Ex-Quinsam 77 G.C.

CANADIAN ARCTIC SURVEY SYSTEMS LTD.
708 - 39 A STREET N.W. CALGARY, ALTA.

GAMMA DENSITY & RESISTANCE

COMPANY LEACO TESTING LTD.
WELL DRILLHOLE 00-77-13
FIELD QUINSAM
PROVINCE BRITISH COLUMBIA

29.05.77
Vancouver

Lsd. Sec. Twp. Rge. W.
Other Services

Permanent Datum G.L.
Log measured from G.L.
Drilling measured from G.L.
Elev. K.B. —
D.F. —
G.L. —
ft. above perm. Dat.

Date 26 Jan. 77
Type Fluid Dome
Dept.-Driller 220
Depth-Logger 220
Bottom logged interval 220
Top logged interval 0
Salinity PPM Cl Water
Density N/A
Level full
Max. rec. temp. deg. F. 60
Operating rig time
Recorded by E. Sanchuk
Witnessed by E. Sanchuk

BORE-HOLE RECORD

Bit No.	From	To	Size
1	0	220	4 3/8"
Surf.		12	
I.D.		12	

CASING RECORD

Wgt.	Size	From	To
	1.25 NPS		

Fold Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

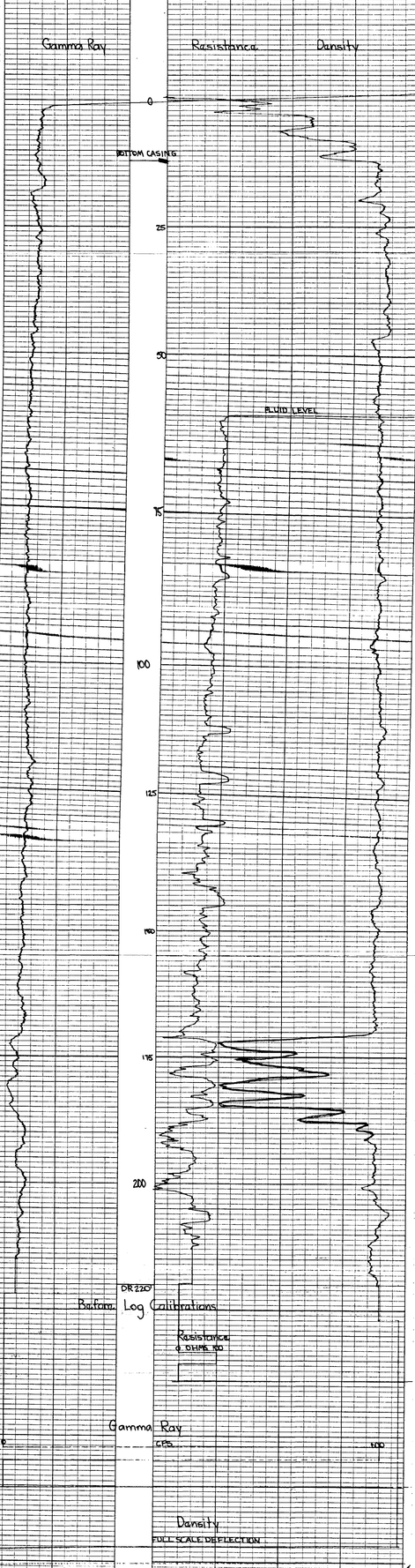
Gamma Ray				Resistance	Density	Caliper
Run No.	One			One	One	
Tool Model No.	L-103			L-103	L-103	
Diameter	2 1/2"			2 1/2"	2 1/2"	
Detector Model No.	CP-514			ME	E	
Type	Scint.				15	
Length	1.5'					
				Length 1'		
				Horiz. Scale 33.3 A/div		
				Res. @ °F N/A		
Hoist Truck No. 1				Source Model	H.D.V.P.	
Inst. Truck No. 1				Serial No.	687	
Location Campbell River				Isotope	Cs 137	
				Strength	125 mC	

LOGGING DATA

General					Gamma Ray				Density	
Run No.	Depths From	Depths To	Speed Ft/Min	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
1	220	0	10	4	100	1R	6.6	1	1K	.5L

Reference Literature: N/A

Remarks: R. Bandfield
Excellent hole conditions.



LEXCO TESTING LTD

DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: May 1, 1977

COMPANY: Lexco Testing

HOLE NO.: QU-77-68

APPROX. LOCATION: SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: 2149 3890' Lt

ELEVATION: 1125

DRILLER: H. Vincett

FROM	TO	LOG	REMARKS
0	10	till	
10	120	grey sandstone	
120	145	green sandstone	Pockets of red shale
145	182	grey sandstone	" "
182	195	green sandstone	
195	250	grey sandstone	
250	262	coal	
262	282	brown shale	
282	295	green sandstone	
295	310	basalt	

COMMENTS

WATER HORIZON FT.

Ok - Glenn 7/6/12

LEXCO TESTING LTD.

GAMMA DENSITY & RESISTANCE

COMPANY LEXCO TESTING LTD.

WELL Drill Hole

FIELD Glenn Lake

PROVINCE B.C.

67

LINE 217-83 38°3' LE 49 E/L

Permanent Datum G.L. Elev. K.B.

Log Measured from G.L. ft. above perm. Dat. D.F.

Drilling Measured from G.L. G.L.

Date 1-Oct-83

Type Log Density

Depth - Driller 300

Depth - Logger 303

Bottom Logged Interval 303

Top Log Interval G.L.

Type Fluid in Hole Water

Salinity, PPM Cl. n/a

Level Full

Max. Rec. Temp. 45°C

Operating Rig Time 8 hrs

Recorded By L. Kerkhoven

Witnessed By L. Kerkhoven

Run No.	Bit From	Bit To	Casing From	Casing To

Run No.	Date	Time	Size	Wgt.	From	To

Other Services

Field Station

Paid-Sara

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

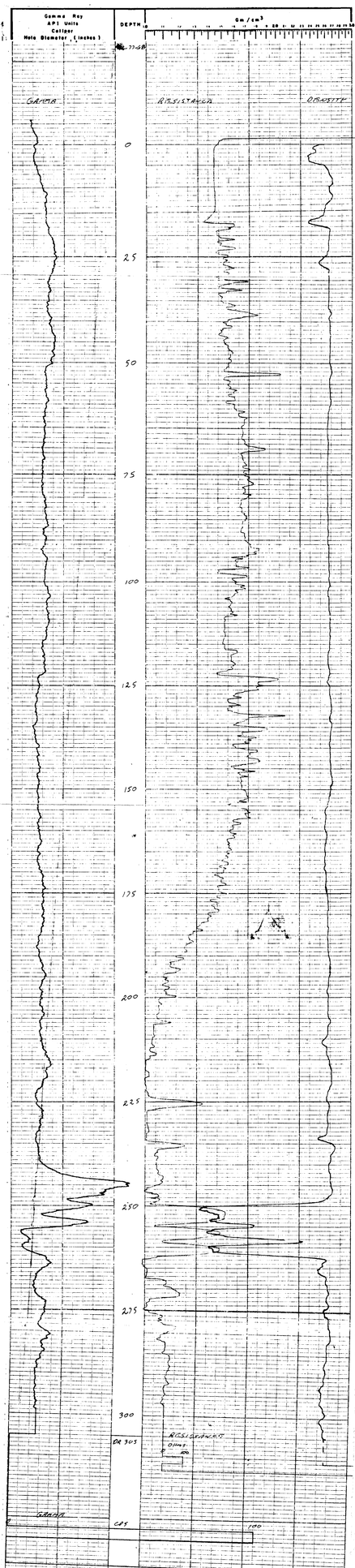
Gamma Ray				Resistance	Density	Caliper
Run No.				Run No.		
Tool Model No.	L-103			Tool Model No.	L-103	L-103
Diameter	2.5"			Diameter	2.5"	2.5"
Detector Model No.	CP-54			Type	PK	Pad
Type	SCINT			Spacing		12"
Length	3"					
				Length	1"	
				Meter Scale	50 AMPS	
General				Rm @ °F		
Hoist Truck No.	2			Source Model		H.D.V.P
Inst. Truck No.	2			Serial No.		687
Location	Gamma Unit			Isotope		Cs 137
				Strength		125 mC

LOGGING DATA

General						Gamma Ray				Density			
	Depths		Speed Ft./Min.	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			
Run No.	From	To											
1	325	0	12	4	100		20	1	1K	50			

References Literature:

Remarks: H. Knight



LEXCO TESTING LTD
DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: ~~May 12, 1977~~

COMPANY: Lexco Testing

HOLE NO.: QU-77-69

APPROX. LOCATION: _____ SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: Line 90+00 1061.7 Rt.

ELEVATION: S 984'

DRILLER: D. Broen

FROM	TO	LOG	REMARKS
0	7	till	
7	119	sandstone	water at 20 ft.
119	127	coal with sandstone partings	
127	134	brown shale	
134	137	coal	
137	228	grey sandstone	
228	248	green sandstone	
248	329	brown shale	
329	334	coal	
334	336	brown shale	
336	348	coal with shale stringers	
348	358	brown shale	
358	365	grey sandstone	
365	385	basalt	

COMMENTS _____

WATER HORIZON _____ FT. _____

OK-QUINSAM 77(2)19

LEXCO TESTING LTD.

GAMMA DENSITY & RESISTANCE

67

COMPANY LEXCO TESTING LTD.

WELL DRILLHOLE QU-77-67 (77-109)

FIELD QUINSAM

PROVINCE B.C.

LINE 10 km 1062 LS 41 4170 Other Services

Lsd. Sec. Twp. Mer. W.

Permanent Datum G.L. Elev. Elev. K.B.

Log measured from G.L. ft. above perm. Dat. D.F.

Drilling measured from G.L. G.L.

Date	12 MAY 77		
Run No.	ONE		
Type Log	NUCLEAR	REL	
Depth - Driller	380		
Depth - Logger	380		
Bottom logged interval	378		
Top logged interval	0		
Type fluid in hole	WATER		
Salinity, PPM Cl.			
Density			
Level	1		
Max. rec. temp. deg. F.			
Operating rig time	1 HR		
Recorded by	R. LEDUC		
Witnessed by	K. GARDNER		

RUN No.	BIT	BORE-HOLE RECORD From	To	CASING RECORD Size	Wgt.	From	To
	8 5/8	0	20	7		0	20
	6 1/2	20	50				

Field Data

Equipment Data: Type Recorder; Serial No.; Calibration Date; Calibration No.; Length; Serial No.; Probe Type; Serial No.; Probe Length; Serial No.; Probe Type; Serial No.; Probe Length; Serial No.; Neut. Truck No.; Hole Truck No.; Logging Truck No.; Logging Truck No.; Recorder Calibration; Recorder Calibration; Recorder Calibration; Recorder Calibration; Recorder Calibration; Recorder Calibration; Recorder Calibration; Recorder Calibration; Recorded by; Witnessed by; Recorded by; Witnessed by; Recorded by; Witnessed by

Ex-Quinsam 77(3)e.

LEXCO TESTING LTD.

GAMMA DENSITY & RESISTANCE

COMPANY LEXCO TESTING LTD.

WELL Brushhaus 24-77-69

FIELD Quinsam

PROVINCE B.C.

L20

Lsd. ___ Sec. ___ Twp. ___ Rge. ___ W. ___

Permanent Datum G.L. Elev. ___

Log measured from G.L. ___ ft. above perm. Dat.

Drilling measured from G.L.

Elev. K.B. ___ D.F. ___ G.L. ___

Other Services

Date	May 22
Run No.	1
Type Log	Nuclear Res
Depth - Driller	105
Depth - Logger	99
Bottom logged interval	99
Top logged interval	0
Type fluid in hole	Water
Salinity, PPM Cl.	n/a
Density	n/a
Level	10'
Max. rec. temp. deg. F.	n/a
Operating rig time	1½ hr
Recorded by	K. Kruegler
Witnessed by	S. Gardner

BORE-HOLE RECORD

RUN No.	Bit	From	To

CASING RECORD

Size	Wgt.	From	To

Fold Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

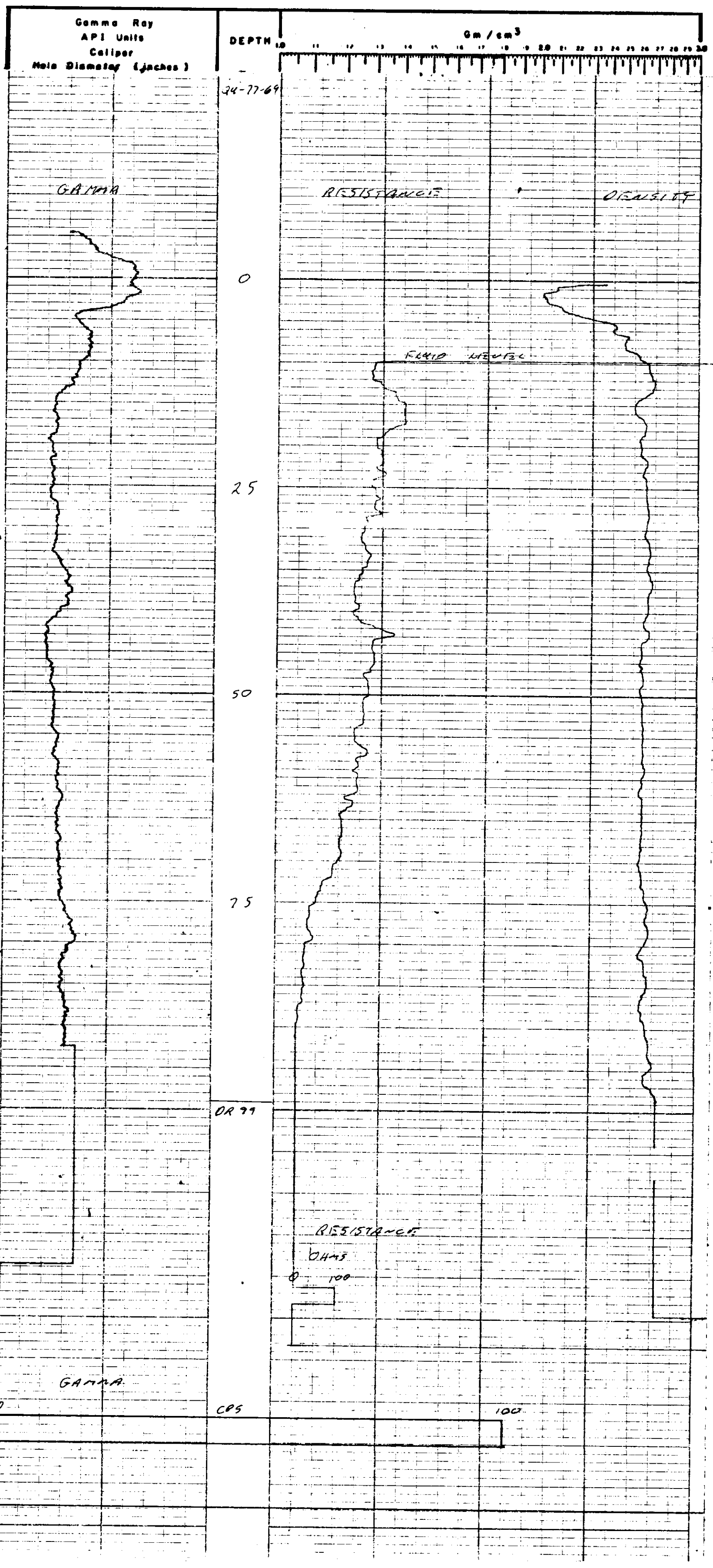
Gamma Ray					Resistance	Density	Caliper
Run No.	1			Run No.	1	1	
Tool Model No.	L-103			Tool Model No.	L-103	L-103	
Diameter	2 1/8			Diameter	2 1/8	2 1/8	
Detector Model No	CP-516			Type	MG	IE	
Type	Scint			Spacing		13"	
Length	3"						
				Length	1"		
				Horiz. Scale	50Ω 10in		
General				Rm @ °F			
Hoist Truck No.	2			Source Model		HDVP	
Inst. Truck No.	2			Serial No.		687	
Location	Campbell	River		Isotope		Cs 137	
				Strength		125 mC	

LOGGING DATA

General				Gamma Ray				Density			
Run No.	Depths From	Depths To	Speed Ft/Min.	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	
1	99	0	12	4	100		10	1	1K	5L	

Reference Literature:

Remarks: 0 Base



LEXCO TESTING LTD
DRILLHOLE REPORT

COAL FIELD: Campbell River DATE: May 14, 1977

COMPANY: Lexco Testing Ltd.

HOLE NO.: LQ-77-70

APPROX. LOCATION: SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: Mercator 18,152,723.1'N 1,082,638.6

ELEVATION: 596.9

DRILLER: H. Vincett

FROM	TO	LOG	REMARKS
0	4	Till	
4	13	Red Shale	
13	23	Brown Shale	
23	75	Grey shale	Coal Stringers at 40' 42' 53'
75	79	Coal	
79	88	Brown Shale	
88	180	Grey sandstone	
180	205	Grey shale	
205	213	Brown shale	
213	230	Grey sandstone	
230	241	Grey shale	
241	244	Coal	
244	257	Brown shale	
257	260	Coal	
260	272	Brown shale	
272	276	Coal	
276	282	Brown shale	

COMMENTS

WATER HORIZON FT.

(1)

O TESTING LTD
RILLHOLE REPORT

AL FIELD: _____ DATE: May 14, 1977

COMPANY: _____

HOLE NO.: LQ-77-70

APPROX. LOCATION: _____ SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: _____

ELEVATION: _____

DRILLER: H. Vincett

FROM	TO	LOG	REMARKS
282	292	Coal	Stringer of Brown shale
292	319	Brown shale	
319	327	Grey shale	
327	329	Coal	
329	379	Brown shale	Coal partings
379	398	Grey-brown shale	
398	416	Silkstone	
416	432	Brown-red shale	
432	492	Brown and grey shale	
492	499	Basalt	

COMMENTS _____

WATER HORIZON _____ FT. _____

E-LOG S. GARDNER

LQ-77-70 76.0
499

		2.2	Coaly shale
.9 clean	.8p	.9	Coal
		.6	Coaly shale
	192.2		
		1.1	Coal
		.5	Boney coal
	7.0		
		1.2	Coal
	2.1		
		1.4	Coaly shale
2.0 clean		.8	Coal
		3.7	Coaly shale

Dr Gibson Tilt 12

LEXCO TESTING LTD.

GAMMA DENSITY & RESISTANCE

COMPANY LEXCO TESTING LTD.

WELL Dellbridge 10-17-70

FIELD Lisbert Ontario

PROVINCE

Elev. K.B. 0.0 D.F. 0.0 G.L. 0.0

Date 10-17-70 Time 7:00 P.M. Depth Logged 1000 Depth Reached 1000

Date 6-6-70 Time 6:00 A.M. Depth 1000

Drilling Contractor Lexco Drilling Rig No. 6

Fluid Level 0 Fluid Type Air Density 0 Viscosity 0 Resistivity 0 Temperature 0 Max. Rec. Temp. 0 Source of Sample Circulation Bottom Hole Temp. 0 Rm @ Meas. Temp. 0 Rmf @ Meas. Temp. 0 Rmc @ Meas. Temp. 0 Source Rmf Rmc

Equipment Number 1 Location Lisbert Recorded by Lexco Witnessed by Mr. Lexco

Bit Size 7 7/8" Type Rock Bit From 0 To 1000 Casing Size 8 5/8" Wgt. 24# Type Surface From 0 To 100 Type Fluid in Hole Air Density 0 Viscosity 0 Level Full Max. Rec. Temp. 0 Est. Cement Top 0 Equipment Location 1000 Miles

Field Note

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

	Gamma Ray		Resistance	Density	Caliper
Run No.	ONE	Run No.	ONE	ONE	
Tool Model No.	C-104	Head Model No.	4-104	4-103	
Diameter	2 3/4	Diameter	2 3/4	2 3/4	
Detector Model No.	C-210	Type	NPF	NPF	
Type	Sight	Spacing		12"	
Length	5'	Length	5'		
		Source Strength	200 m Curie		
		Source Model		N.S.V.P.	
		Source No.		887	
		Isotope		Cs-137	
		Strength		175 mC	

General

Motor Truck No.	2	Truck Model	
Stat. Truck No.		Serial No.	
Location	Cambridge River	Isotope	
		Strength	

LOGGING DATA

Gamma

Run No.	Speed From	Speed To	Speed Sec.	T.C. Setting	Sens. Div. L.w.R.	Zero Div. L.w.R.	API GR Units per Log Div.	T.C. Sec.	Sens. Setting	Density Div. L.w.R.	Zero Div. L.w.R.
ONE	6.24'	0'	12	4	100		5		16		0.55

Reference Literature

Remarks: 10 Guard

Gamma Ray
API Units
Caliper
Density (Factor)

DEPTH

Gm/cm³

10-17-70

Gamma Ray

Resistance

Density

Fluid Level

0

25

50

75

100

125

150

175

200

225

250

275

300

325

350

375

400

425

450

DF 474

Resistance

Gamma Ray

0 CPS

LEXCO TESTING LTD

DRILLHOLE REPORT

COAL FIELD: Campbell River, B.C. DATE: May 13, 1977

COMPANY: Lexco Testing

HOLE NO.: QU-77-71

APPROX. LOCATION: _____ SEC. ____ TWP. ____ RGE. ____ W. ____

SURVEYED LOCATION: 40+00 9683' Lt of B/L

ELEVATION: 1152'

DRILLER: D. Broen

FROM	TO	LOG	REMARKS
0	6	till	
6	60	sandstone	

COMMENTS _____

WATER HORIZON _____ FT. _____

ex-Quinsam 77(3)c.

LEXCO TESTING LTD.

GAMMA DENSITY & RESISTANCE

67

COMPANY LEXCO TESTING LTD.

WELL DRILLHOLE QU-77-71 (L 22)

FIELD QUINSAM

PROVINCE BC

LINE 40+00 9683' LE of G/L

Lsd. ___ Sec. ___ Twp. ___ Rge. ___ W. ___

Other Services

Permanent Datum G.L. Elev. 1152.0' Elev. K.B. ___

Log measured from G.L. ___ ft. above perm. Dat. D.F. ___

Drilling measured from G.L. G.L. ___

Date	17 MAY 77
Run No.	ONE
Type Log	NUCLEAR
Depth - Driller	60'
Depth - Logger	59'
Bottom logged interval	59'
Top logged interval	0'
Type fluid in hole	WATER
Salinity, PPM Cl.	-
Density	-
Level	6.5'
Max. rec. temp. deg. F.	-
Operating rig time	0.5 HR
Recorded by	R. LEDUC
Witnessed by	S. GARDNER

BORE-HOLE RECORD

RUN No.	Bit	From	To
1	6 3/4"	0'	8'
	5 1/8"	8'	TD

CASING RECORD

Size	Wgt.	From	To
6'		0'	8'

Fold Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

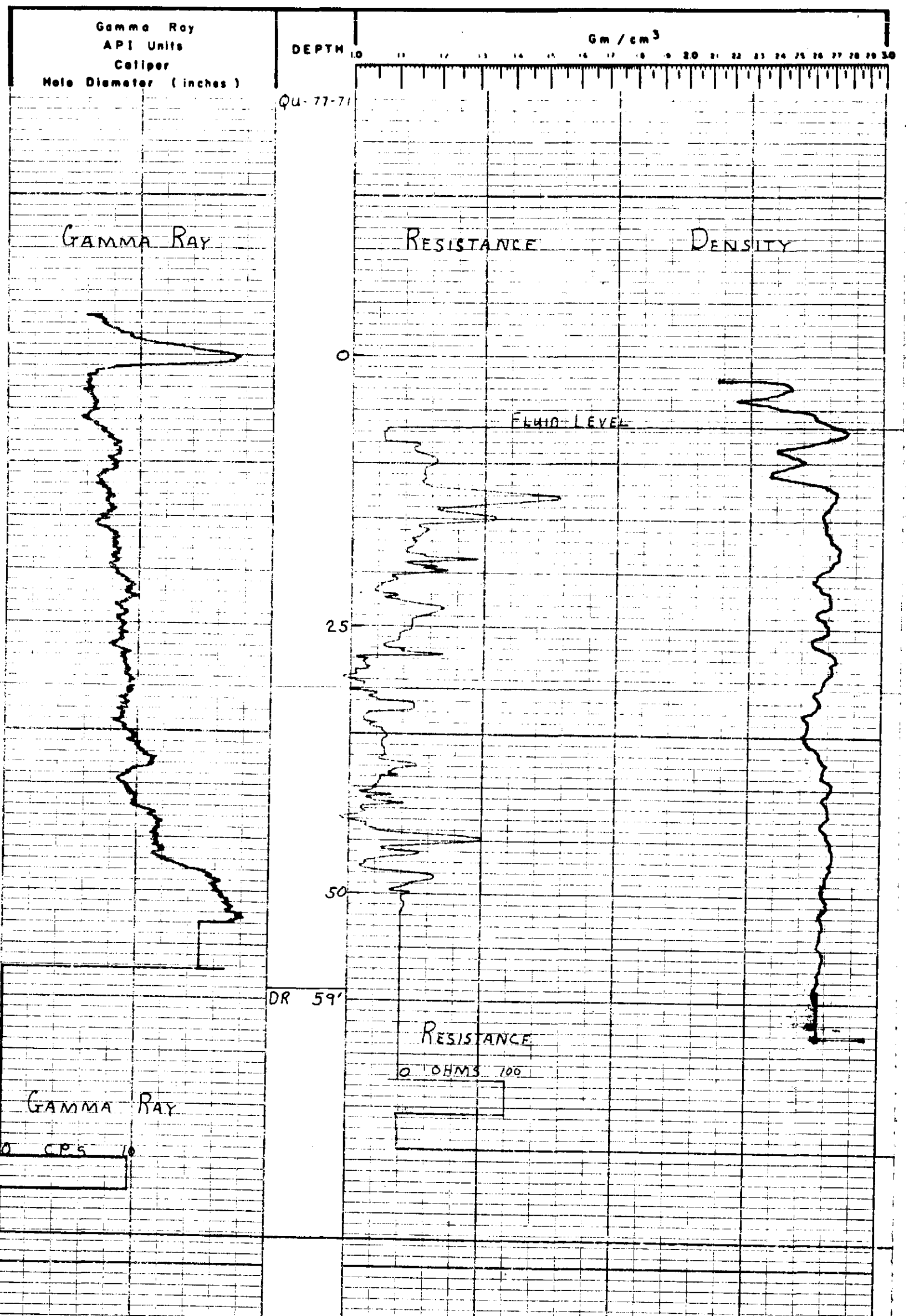
Gamma Ray					Resistance	Density	Caliper
Run No.	ONE			Run No.	ONE	ONE	
Tool Model No.	L-103			Tool Model No.	L-103	L-103	
Diameter	2 1/8			Diameter	2 1/8	2 1/8	
Detector Model No	CP-516			Type	ME	F	
Type	SCINT			Spacing		13	
Length	3"						
				Length	1'		
				Horiz. Scale	25 Ω / Div.		
General				Rm @ °F	–		
Hoist Truck No.	2			Source Model		HDVP	
Inst. Truck No.	2			Serial No.		687	
Location	CAMPBELL	RIVER		Isotope		Cs 137	
				Strength		125 mC	

LOGGING DATA

General				Gamma Ray				Density			
Run No.	Depths From	Depths To	Speed Ft/Min.	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	59'	0'	12	4	100		5	1	1K	0.5L	

Reference Literature:

Remarks: DENNIS



LEXCO TESTING LTD
DRILLHOLE REPORT

AL FIELD: Campbell River DATE: May 14, 1977

COMPANY: Lexco Testing

HOLE NO.: QU-77-72

APPROX. LOCATION: Line 0+00 n 8000' Lt. of b/l SEC. ___ TWP. ___ RGE. ___ W. ___

SURVEYED LOCATION: ___

ELEVATION: ___

DRILLER: D. Broen

FROM	TO	LOG	REMARKS
0	5	till	
5	25	basalt	

COMMENTS ___

WATER HORIZON ___ FT. ___