ROTARY-PERCUSSION DRILL PROGRAM

ON THE

REEF CLAIMS NTS - 82L/3W

VERNON MINING DIVISION

UNION OIL COMPANY OF CANADA LIMITED

M.J. Gdiluck, P.Eng.(Ont.)

November, 1979

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INTRODUCTION

The drilling program on the REEF claims was conducted primarily to determine the regional extent, thickness and nature of the paleo-channel sedimentary unit underlying the Miocene basalt flows which outcrop throughout the property. In addition these holes were used to test the potential of this sedimentary sequence for containing uranium mineralization.

The program commenced on September 21, 1979 under the supervision of the author and was completed by October 8th after a total of 3378 feet were drilled in 10 holes. The total direct cost of the work expended on this program and herein claimed for assessment credit is $ 58,318.48.

The drilling method employed a combined rotary and percussion drill system which produced a rock chip type of sample. These samples were analyzed in the field with a spectrometer for radioactivity and later sent to a commercial laboroatory for chemical analysis. In addition 8 of the 10 holes drilled were also probed over their entire length with a combination gamma ray - neutron down hole logging tool. Two of the holes failed to penetrate through deep overburden and highly fractured volcanic flows.

LOCATION

The property is situated on the east side of Wood's Lake, 20 km due south of Vernon and 20 km. north of Kelowna. The claims are easily accessible from the village of Winfield on Highway #97, via a network of rural and old logging roads.

CLAIMS

The property consists of 9 valid claims (100 units), 8 of which are listed below and towards which the assessment credit is to be applied. The REEF #8 claim (2 units) is valid at the present time, but will be allowed to lapse on its expiry date of February 25, 1980.

The original REEF #7 claim was abandoned and restaked over the same ground in June 1979 and so it now has a new record number and expiry date.

REEF SOUTH GROUP

Claim	Units	Record No.	Record Date	New Expiry Date
REEF # 1	20	202	Dec. 8, 1976	Dec. 8, 1984
REEF # 7	5	634	June 15, 1979	June 15, 1984
REEF #10	15	406	Feb. 10, 1977	Feb. 10, 1985

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REEF CENTRAL GROUP

Claim	Units	Record No.	Record Date	New Expiry Date
REEF # 2	15	203	Dec. 8, 1976	Dec. 8, 1983
REEF # 6	3	240	Feb, 25, 1977	Feb. 25, 1984

REEF NORTH GROUP

Claim	Units	Record No.	Record Date	New Expiry Date
REEF # 3	15	204	Dec. 8, 1976	Dec. 8, 1981
REEF # 4	20	238	Feb. 25, 1977	Feb. 25, 1982
REEF # 5	4	239	Feb. 25, 1977	Feb. 25, 1982
REEF # 9	1	371	Aug. 22, 1977	Aug. 22, 1983

DRILLING PROCEDURES

The drilling was performed by Alberta Southern Exploration Drilling Ltd. using a truck mounted Ingersall Rand TH-60 rotary drill equipped with a down-hole percussion hammer and a drill-through casing hammer.

A 6 inch diameter steel casing was driven down to bedrock and left in the hole. A 5½ inch diameter hole was drilled through the bedrock lithologies and immediately upon completion of the drilling, before excessive caving could occur, a 2 inch diameter P.V.C. plastic pipe was installed. This was done in order that the gamma ray-neutron probe could be safely lowered to the bottom of each hole after the drill rig had moved off the site.

Percussion drilling was used to penetrate the hard volcanic flows and rotary drilling methods employing tricone type bits, were used to drill through the underlying poorly consolidated sediments.

No drilling additives, including water, were put down the hole during the course of drilling. The rock chip sample was returned to the surface using compressed air. Samples retrieved at the surface from below the water table were in the form of a slurry composed of ground water, natural mud and rock chips.

SAMPLE TREATMENT

Approximately a 30% split of each 10 foot interval drilled, was collected after being deflected above the drill collar into a galvanized

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wash tub. Each sample was manually homogenized, scanned with an URTEC Model UG-135 spectrometer and geologically logged. Two, approximate 1 pound samples from all intervals below the basalt cap were then bagged. One sample was forwarded to Bondar-Clegg Laboratories in Vancouver and analysed geochemically for uranium and gold (gold on every second sample only). The other sample was retained for possible further analysis and examination and stored in a warehouse in Kamloops.

DOWN-HOLE LOGGING

Roke Oil Enterprises Ltd. of Calgary was contracted to run down-hole gamma ray and neutron logs in the completed holes. (2 holes were abandoned in overburden). The probing equipment is mounted in a four wheel drive vehicle, complete with winch and all the recording instrumentation. The two logging devices are contained within a single tool assembly, approximately 6 feet in length and 1¾ inches in diameter. Both logs were run simultaneously. The first hole 79R-1 was logged twice, once through the steel drill pipe for comparative purposes then through the plastic pipe. The remaining holes were logged only through the plastic pipe.

Both logging tools were designed and constructed by Roke Oil. The gamma ray detector is a standard sodium iodide crystal 1.77 cubic inches in size. The instrument measures total gamma radiation only. Total count readings are recorded on the chart with 15 API units equal to one division. Each division is approximately equivalent to 15 counts per second.

The neutron log inversely measures the hydrogen concentration in the lithologies and hence in this case measures the amount of contained water, ie. the porosity of each rock unit. High porosity units such as shales and clays show as low points on the graph whereas lower porosity sands and granites shift the log to the right.

APPENDIX A

COST STATEMENT

Salaries and Benefits: Union Oil Personnel

M.J. Gidluck, Senior Geologist:				
Sept. 21 - Oct. 8	(18 days)	@ $200/day	=	$ 3600.00
R. Sharp, Geologist:				
Sept. 30 - Oct. 2	(3 days)	@ $100/day	=	300.00
T. Croft, Assistant:				
Oct. 3 - Oct. 8	(6 days)	@ $ 65/day	=	390.00
M.J. Gidluck on project preparation and report:	(5 days)	@ $200/day	=	1000.00
				$ 5290.00

Drilling: Rotary-Percussion Machine, Alberta Southern Exploration Drilling, Invoice No. 01479
total of 3378 feet — $43929.86

Contractors:

Roke Oil Enterprises Ltd. - down hole probing
Radiometric and Neutron logging of *"9" holes — $ 4421.72

Macdonnell and McFarland TD-15 bulldozer
33 hours @ $35.00/hour — $ 1155.00

Transportation and Travel: Union Oil Personnel

Airfare and taxis	$ 175.00	
Bowmac, Kamloops - 4W drive	551.21	
- fuel	133.94	$ 860.15

Room and board - Union Oil Personnel
27 man days @ $35.00/day — $ 945.00

Rental of Spectrometer URTEC Ltd. (18 days)@ $13.50 — $ 243.00

Material, supplies, freight and telephone — $ 250.00

Maps, reports and airphotos — $ 150.00

Analyses - Bondar-Clegg, Vancouver, 155 samples — $ 1073.75

TOTAL: $ 58,318.48

Total Cost Per Foot Drilled: $17.26

* 8 different holes with one hole having been logged twice.

APPENDIX B

EXPENDITURE DISTRIBUTION

South Group - REEF #1, #7, and #10 claims (40 units)		
2296 ft. drilled @ $17.26/ft.	=	$ 39,628.96
Central Group - REEF #2 and #6 claims (18 units)		
605 ft. drilled @ $17.26/ft.	=	$ 10,442.30
North Group - REEF #3, #4, #5 and #9 claims (40 units)		
477 ft. drilled @ $17.26/ft.	=	$ 8,233.02

APPENDIX C

STATEMENT OF QUALIFICATION

Robert J. Sharp

I, Robert Sharp, of Calgary, Alberta, do hereby certify that:

(1) I am a graduate of the University of Alberta B.Sc. Mineral Engineering (1975). I have practiced my profession for 4½ years.

(2) I am employed as a geologist with Union Oil Company of Canada Limited, 335-8th Avenue, S.W., Calgary, Alberta. I reside at 206-3500 Varsity Drive, N.W., Calgary, Alberta.

(3) I am a member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta as an "Engineer-in-Training", member no. 18311.

Robert J. Sharp

APPENDIX C

STATEMENT OF QUALIFICATIONS

Marcus J. Gidluck

I, Marcus J. Gidluck, am presently employed as a Senior Geologist with the Minerals Division of the Union Oil Company of Canada Limited and reside at 3303 Cedarille Drive, S.W., Calgary, Alberta.

I graduated with a B.Sc. degree in Geology from the University of British Columbia in 1965 and have been actively involved in mining exploration since that time.

I am a registered non-resident member of the Association of Professional Engineers of Ontario and a Fellow of the Geological Association of Canada.

M. J. Gidluck

Marcus J. Gdiluck, P.Eng. (Ont.)

DRILL HOLE LOG

UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-1

PROJECT REEF
PROPERTY REEF #7 Claim
STARTED September 23, 1979
COMPLETED September 27, 1979
BEARING --
LOGGED BY M.J. Gidluck
DRILLED BY Alberta Southern Exploration
DRILL METHOD Rotary-Percussion
INCLINATION Vertical
COORDINATES
ELEVATION
HOLE SIZE 5¼ inches
FINAL DEPTH 380 feet; 115.6 metres

DEPTH Feet(meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft(meter)	R.A. cps	Un ppm		Au ppb				
00 (00)	Collar										
20 (6.1)	Overburden; casing										
30 (9.1)	Basalt; massive, f.g. dark green			85							
40 (12.2)	Basalt			84							
50 (15.2)	Basalt			83							
60 (18.2)	Basalt			84							
70 (21.3)	Basalt			85							
80 (24.3)	Basalt			85							
87 (26.5)	Basalt; slightly oxidized 86/-87'	1926	7	85	<0.2		< 5				
90 (27.4)	Sand and gravels; sand, pea size pebbles; orange	1927	3	95	1		-				
100 (30.4)	Quartz sand: buff brown, damp; some clasts to pebble size; mostly quartz, some granite and few basalt fragments	1928	10	104	0.4		< 5				
110 (33.5)	Gravel: similar to above, increased grain size	1929	10	95	0.2		-				
120 (36.5)	Quartz sand: yellow brown colour	1930	10	93	<0.2		< 5				
130 (39.5)	Quartz sand: as above	1931	10	96	0.2		-				
140 (42.6)	Sand: poor recovery; some water	1932	10	100	<0.2		< 5				
150 (45.6)	Clay and sand: several feet of clay zone in upper part; coarse-medium grained sand	1933	10	95	0.4		-				
160 (48.7)	Quartz sand and gravel: primarily quartz grains lessor granite and gneiss fragments; few small fragments of coal	1934	10	93	<0.2		< 5				
170 (51.7)	Quartz sand and gravel: as above	1935	10	92	<0.2		-				
180 (54.8)	Quartz sand: fine to medium grained; no pebbles; poor sample return.	1936	10	92	0.2		10				

DRILL HOLE LOG
UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-1

DEPTH Feet (meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft (meter)	R.A. cps	Un ppm		Au ppb				
200 (60.8)	Quartz sand and gravel: very poor return; ap-	1937	20	90	< 0.2		-				
	parent increase in grain size										
210 (63.9)	Quartz sand and gravel: as above; poor return;	1938	10		< 0.2		< 5				
	only enough sample for assay										
220 (66.9)	Sand and gravel: sample mostly cave from	1939	10		0.2		-				
	above, abundant basalt.										
230 (70.0)	Sand and gravel: poor return and sample con-	1940	10		<0.2		< 5				
	taminated from above										
240 (73.0)	Gravel and water table in channel: increased	1941	10	96	0.4		-				
	clast size; rounded, fluvial clasts, polymictic										
	but abundant quartz ≈ 50%										
250 (76.0)	Gravels: as above 50% quartz	1942	10	99	<0.2		< 5				
260 (79.1)	Gravels: as above	1943	10	95	<0.2		-				
270 (82.1)	Gravels: as above	1944	10	98	0.4		< 5				
280 (85.2)	Gravels and basement?: similar to above with	1945	10	100	2		-				
	less pebbles; small angular fragments of sili-										
	ceous pale green rock - possible basement										
290 (88.2)	Basement and gravels: pale green rock with	1946	10	95	2		< 5				
	traces of pyrite										
300 (91.3)	Basement and gravels: as above but green rock	1947	10	115	0.8		-				
	now 35% and larger chips appear to be dioritic,										
	frequently contains specks of pyrite										
310 (94.3)	Basement and gravels: as above	1948	10	101	1		< 5				
320 (97.3)	Diorite and gravels: diorite clasts becoming	1949	10	105	1		-				
	more angular, slight increase; decreasing										
	rounded quartz										

DRILL HOLE LOG
UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-1

DEPTH Feet(meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft(meter)	R.A. cps	Un ppm		Au ppb				
330 (100.4)	Gravels and diorite: increased quartz clasts to	1950	10	95	1		< 5				
	50% and some pebbles; 30% diorite but small and										
	angular										
340 (103.4)	Diorite: increased basement fragments to 65%	1951	10	95	1		-				
	of sample; quartz contaminated now only 20%										
350 (106.5)	Diorite: fragments now 75% of sample; quartz	1952	10	95	1		< 5				
	to 15%										
360 (109.5)	Diorite: as above	1953	10	95	1		-				
370 (112.5)	Diorite: sediment contaminated less than 10%;	1954	10	98	1		< 5				
	dark green fragments probable amphib. zones in										
	diorite										
380 (115.6)	Diorite: 90% of sample now basement; traces	1955	10	96	1		-				
	pyrite throughout										
380 (115.6)	BOTTOM OF HOLE										
	a) all steel casing left in hole										
	b) PVC plastic pipe (2 in. diameter) inserted in										
	hole down to 375 feet and left in hole										
	c) - R.A. (radioactivity) of each sample inter-										
	val was determined with an URTEC Differential										
	Spectrometer, model UG-135 averaging over 3,										
	10 second count periods.										
	d) The hole was probed with a combination Gamma										
	Ray and Neutron log tool by Roke Oil Enterprises Ltd.										
	e) Un - uranium geochemical analysis with extrac-										
	tion by conc. nitric acid.										

J. Riddle

DRILL HOLE LOG

UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-2

PROJECT REEF
PROPERTY REEF # 1 Claim
STARTED September 27, 1979
COMPLETED September 28, 1979
BEARING ____ INCLINATION vertical
LOGGED BY M.J. Gidluck
DRILLED BY Alberta Southern Exploration
DRILL METHOD Rotary Percussion
HOLE SIZE 5½ inches
COORDINATES ____
ELEVATION ____
FINAL DEPTH 406 ft.; 123.5 meters

DEPTH Feet(meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft(meter)	R.A. cps	Un ppm
00 (00)	Collar				
12 (3.6)	Overburden: 6 inch steel casing also tzo			69	
20 (6.1)	Basalt: dark green-black massive, hard			67	
30 (9.1)	Basalt: limonitic weathered zones			67	
40 (12.2)	Basalt: some weathering			66	
50 (15.2)	Basalt: fresh and weathered fragments; deeply fractured basalt flows			67	
60 (18.2)	Basalt: as above			64	
70 (21.3)	Basalt: as above			66	
80 (24.3)	Basalt: as above			68	
90 (27.4)	Volcanic Ash and Clay Seam; light green, soft; damp			*73	
100 (30.4)	Basalt and Ash Clay: as above; some chips dark green fresh basalt			75	
110 (33.5)	Basalt: as above becoming very wet from above clay seam			67	
120 (36.5)	Basalt and mud: as above			68	
130 (39.5)	Basalt: as above, muddy			74	
140 (42.6)	Basalt: as above, large fresh basalt chips; dark green colour			76	
150 (45.6)	Basalt: as above			73	
160 (48.7)	Basalt: as above			75	
166 (50.5)	Basalt: as above			70	
	* Note: Spectrometer recalibrated at 90'.				

DRILL HOLE LOG
UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-2

DEPTH Feet (meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft(meter)	R.A. cps	Un ppm		Au ppb				
170 (51.7)	Base of basalt flow and clay: fine grained,			72							
	green, soft; contaminated with basalt cave										
180 (54.8)	Quartz pebble gravel: 65% rounded white quartz	1956		77	0.8		<5				
	pebbles and sands; fluvial origin, some granite										
	and meta sediment clasts; basalt cave about 15%										
190 (57.8)	Quartz pebble gravel: similar to above with	1957		71	1		-				
	abundant boulders; 75% quartz, 25% polymictic										
	clasts and caving										
200 (60.8)	Polymictic conglomerate: very large boulders of	1958		74	0.8		<5				
	pegmatite and granite; abundant white quartz										
	pebbles and cobbles? of 85%										
210 (63.9)	Polymictic conglomerate: as above	1959		75	0.8		-				
220 (66.9)	Polymictic conglomerate: as above	1960		75	0.4		<5				
230 (70.0)	Gravels and Clay; assorted comp'n. clasts but	1961		75	0.6		-				
	mainly quartz; clay seam @ 226'-230' of fragment										
	compacted grey clay										
238 (72.4)	Clay and coal: fragment grey clay and hard	1962		76	1		5				
	black coal seam at 238'										
250 (76.1)	Polymictic conglomerate: as @ 200' but in-	1963		74	0.4		-				
	creased basalt cave material										
260 (79.1)	Quartz gravels: increased rounded quartz clasts	1964		70	0.6		<5				
	- 65%; boulders of variable comp'n. but mainly										
	chert and granite										
270 (82.1)	Quartz gravels: as above, quartz 55%	1965		71	1		-				
280 (85.2)	Clay and coarse sand; quartz to 50%	1966		75	0.2		<5				
290 (88.2)	Clay: compacted grey clay zone	1967		75	0.4		-				
300 (91.3)	Clay: semi-compacted clay	1968		74	0.6		5				

DRILL HOLE LOG
UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-2

DEPTH Feet(meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft(meter)	R.A. cps	Un ppm		Au ppb				
310 (94.3)	Clay and gravels: clay zone terminates at 307'	1969		73	2		-				
	then into gravel, 50% quartz, 35% variable comp'n										
	and 15% pale green granitic fragments										
320 (97.3)	Boulders and gravel: polymictic comp'n., quartz	1970		78	0.6		< 5				
	50%, 30% granitic and pegmatite, 20% basalt cave?										
330 (100.4)	Boulders and gravel: as above; 10% green granitic	1971		76	<0.2		-				
	fragments										
340 (103.4)	Boulders and gravel: as above	1972		73	0.4		< 5				
350 (106.5)	Gravels and boulders; smaller cuttings up to pea	1973		72	0.4		-				
	size only; increased green granitic fragments										
	to 15%; quartz decreased to 35%; possible basement??										
360 (109.5)	Gravels? similar to above, smoother drilling,	1974		71	1		< 5				
	no boulders; possibly into bedrock; small green										
	granitic fragments 15-18%										
370 (112.5)	Granodiorite: cuttings of very fine rounded sand	1975		72	3		-				
	grains, appears to be "beach sand", of greenish										
	granitic-granodioritic composition; possibly fine										
	cuttings of basement due worn out bit										
380 (115.6)	Granodiorite: as above; grains subrounded of	1976		72	3		10				
	coarse sand size.										
389 (118.3)	Basalt: probably dyke, hard drilling; massive	1977		69	1		-				
	dark green-black										
400 (121.7)	Granodiorite: similar to 370'-380' but par-	1978		73	2		5				
	ticles greener due fresh mafics										
406 (123.5)	Granodiorite and basalt: granitic sand clasts	1979		70	2		-				
	as above; basalt at 405'-406'; bit would not										
	drill; changed bits and old bit completely worn;										
	metal left down prevented further penetration										

DRILL HOLE LOG
UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-2

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DEPTH Feet (meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft (meter)	R.A. cps	Un ppm
406 (123.5)	BOTTOM OF HOLE				
	a) all the steel casing was left in the hole				
	b) PVC plastic casing of 2 inch diameter was in-				
	serted and left in the hole				
	c) R.A. (radioactivity) of each 10 ft. sample was				
	determined using an URTEC Differential Spec-				
	trometer, model UG-135 and averaging 3 separ-				
	ate 10 second count periods				
	d) The hole was probed through PVC pipe with a				
	combination Gamma Ray and Neutron log tool				
	by Roke Oil Enterprises Ltd.				
	e) Un = uranium geochemical analysis with extrac-				
	tion by concentrated nitric acid.				

M. Stollberg

DRILL HOLE LOG

UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-3

PROJECT REEF | BEARING | INCLINATION Vertical | HOLE SIZE 5½ inches
PROPERTY REEF #6 Claim | LOGGED BY N.J. Gidluck | COORDINATES
STARTED September 28, 1979 | DRILLED BY Alberta Southern Exploration | ELEVATION
COMPLETED September 29, 1979 | DRILL METHOD Rotary Percussion | FINAL DEPTH 180 feet, 54.8 meters

DEPTH Feet (meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft (meter)	R.A. cps	Un ppm		Au ppb				
00 (00)	Collar										
12 (3.6)	Overburden; steel casing to this depth										
20 (6.1)	Basalt: fractured with weathering along fracts.			77							
30 (9.1)	Basalt: as above			78							
40 (12.2)	Basalt: as above			73							
50 (15.2)	Basalt: fractured as above; small zone, orange, weathered, damp, clay.			74							
60 (18.2)	Basalt: as @ 20'; fractured			75							
70 (21.3)	Basalt: as above			75							
80 (24.3)	Basalt: as above			70							
90 (27.4)	Basalt: as above			76							
100 (30.4)	Basalt and acid volcanics: distinct change, chips smaller than above; fine brown cuttings and dust - probable acid volcanics	1980		75	0.4		< 5				
110 (33.5)	Acid volcanics and basalt: as above increased brown fragments to 35%; few minute white chips	1981		77	1		-				
120 (36.5)	Acid volcanic and basalt: as above, traces of agate silca; intraformational sediments approximately 45%, basalt 55%	1982		76	0.8		< 5				
130 (39.5)	Basalt and acid volcanics; similar to above; decreased brown fragments to 25%			76							
140 (42.6)	Basalt: minor acid volcanic cave			76							
150 (45.6)	Basalt: as above			75							
160 (48.7)	Basalt: as above			74							

DRILL HOLE LOG

UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-3

DEPTH Feet(meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft(meter)	R.A. cps	Un ppm
170 (51.7)	Basalt: water table intersected; decreased			79	
	sample return, loss apparently in fractured				
	basalt around 50-70 feet; increased caving of				
	large basalt fragments jamming rod string				
180 (54.8)	No sample return: rods jamming, further progress				
	impossible and hole abandoned				
180 (54.8)	BOTTOM OF HOLE				
	a) all steel casing left in hole				
	b) PVC plastic pipe of 2 inch diameter was				
	inserted only down to the 70 ft. level				
	c) R.A. (radioactivity) of each sample was				
	determined using an URTEC Differential				
	Spectrometer, model UG-135 and averaging				
	3 separate, 10 second count periods.				
	d) This hole was not probed.				
	e) Un = uranium geochemical analysis with				
	extraction by conc. nitric acid.				

J. Riddle

DRILL HOLE LOG

UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-4

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PROJECT REEF
PROPERTY REEF #2 Claim
STARTED September 30, 1979
COMPLETED September 30, 1979
BEARING ____ INCLINATION vertical
LOGGED BY R. Sharp
DRILLED BY Alberta Southern Exploration
DRILL METHOD Rotary Percussion
HOLE SIZE 5½ inches
COORDINATES ____
ELEVATION ____
FINAL DEPTH 425 feet; 129.3 meters

DEPTH Feet (meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft (meter)	R.A. cps	Un ppm		Au ppb				
00 (00)	Collar										
17 (5.2)	Overburden and casing			87							
20 (6.1)	Basalt; dense black, red-brown rinds, clay in			78							
	fractures										
30 (9.1)	Basalt, dense black			78							
40 (12.2)	Basalt, dense black, some red sand at 38'-39'			69							
50 (15.2)	Basalt, dense black			72							
60 (18.2)	Basalt, dense black			75							
70 (21.3)	Basalt, dense black, some damp brown sand @ 68'			73							
78 (23.7)	Basaltic sand and clay @ 70'-78'			84							
80 (24.3)	Basalt, dense black			84							
90 (27.4)	Basalt, dense black			75							
100 (30.4)	Basalt, some clay in fractures			77							
110 (33.5)	Basalt, dense black, some red fracture surfaces			77							
120 (36.5)	Basalt, dense black			72							
130 (39.5)	Basalt, dense black			73							
140 (42.6)	Basalt, dense black, red-brown weathered surfaces			75							
150 (45.6)	Basalt, dense black			76							
160 (48.7)	Basalt, dense black			74							
170 (51.7)	Basalt, dense black			78							
178 (54.1)	Basalt, dense black, basal contact										
180 (54.8)	Clay to mudstone; brown, fine cuttings	1983		83	3		–				
190 (57.8)	Clay with shale chips, brown	1984		85	3		< 5				
200 (60.8)	Clay with shale chips	1985		88	3		–				

DRILL HOLE LOG
UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-4

DEPTH Feet (meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft (meter)	R.A. cps	Un ppm		Au ppb				
202 (61.4)	Clay, orange brown	1986		82	2		< 5				
210 (63.9)	Carbonaceous shale, brown to black	1987		82	2		–				
220 (66.9)	Basalt, dacite-rhyolite chips			83							
230 (70.0)	Basalt, minor dac-rhyolite (10%)			83							
240 (73.0)	Basalt, black to grey, oxidized, may be older			82							
250 (76.0)	Basalt, same as 240			80							
260 (79.1)	Basalt, dense black with weathered (brown) rinds			78							
270 (82.1)	Basalt, dense black, minor weathering			74							
280 (85.2)	Basalt, black to grey			79							
283 (86.1)	Basalt, black to grey										
290 (88.2)	Felsic tuff to tuffite chips, (fine sandstone to siltstone) grey, weathered, fine grained	1988		87	0.8		< 5				
300 (91.3)	Felsic tuff to tuffite; grey, bedded, clasts finer and angular than #290	1989		81	0.6		–				
310 (94.3)	Felsic tuff to tuffite, grey, clay rich, fine clasts in chips, hit water @ 305'			83							
320 (97.3)	Felsic tuff to tuffite chips, grey, 10% rhyolite chips, felsic tuff may represent a siltstone or mudstone deposited in aqueous environment derived from a felsic volcanic source.			82							
330 (100.4)	Felsic tuff, grey, clay rich, 15% rhyolite fragments, 1% basalt chips from above			78							
340 (103.4)	Felsic tuff, contains some 1 mm. fragments of quartz			78							
350 (106.5)	Felsic tuff or mudstone to siltstone, grey, less compact than above units, contains quartz and feldspar clasts	1990		73	1		< 5				

DRILL HOLE LOG
UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-4

DEPTH Feet (meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft (meter)	R.A. cps	Un ppm		Au ppb				
360 (109.5)	Felsic tuff (siltstone?) grey, well consolidated,			70							
	10% rhyolite chips										
366 (111.3)	Felsic tuff										
370 (112.5)	Agate and rhyolite: (1% green feldspathic rocks -	1991		71	1		-				
	may represent basement lithology), agate is yel-										
	low coloured										
380 (115.6)	Agate and rhyolite: 40% white quartz cuttings,	1992		84	1		45				
	small red (hematitic) and yellow agate chips,										
	rhyolite tuff, white feldspars in cuttings										
387 (117.7)	Agate and rhyolite; as above, finer grained cut-										
	tings of agate, rhyolite and felsic tuff.										
390 (118.6)	Granodiorite basement: green coloured, fine			77							
	grained, chips are subangular										
400 (121.7)	Granodiorite basement; white quartz cuttings (60%			72							
	white feldspar and green granodiorite chips (25%)										
	agate (15%)										
410 (124.7)	Granodiorite basement; white quartz cuttings (60%			82							
	white feldspar and green granodiorite chips (35%)										
	agate and felsic tuff (5%)										
420 (127.8)	Granodiorite basement; white feldspar and green	1993		85	1		-				
	granodiorite (45%), white quartz cuttings (50%)										
	agate and felsic tuff (5%)										
425 (129.3)	Granodiorite basement; green granodiorite chips			88							
	plus white feldspars (55%), quartz cuttings (45%)										
	END OF HOLE @ 425'										
	a) all the steel casing was left in the hole										
	b) PVC plastic pipe was inserted to the bottom										

DRILL HOLE LOG
UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-4

DEPTH	DESCRIPTION	SAMPLE NO.	LENGTH
	b) cont'd		
	and left in the hole		
	c) R.A. (radioactivity) of each sample was determined using an URTEC Differential Spectrometer		
	d) The hole was probed through the PVC pipe with a combination Gamma Ray and Neutron log tool by Roke Oil Enterprises Ltd.		
	e) Un = uranium geochemical analysis with extraction by concentrated nitric acid		
	Final Log.		

DRILL HOLE LOG

UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-5

PROJECT REEF | BEARING | INCLINATION Vertical | HOLE SIZE 5½ inches
PROPERTY REEF #1 Claim | LOGGED BY R. Sharp | COORDINATES
STARTED October 1, 1979 | DRILLED BY Alta. S. Exploration Drilling | ELEVATION
COMPLETED October 1, 1979 | DRILL METHOD Rotary Percussion | FINAL DEPTH 415 feet; 123.2 meters

DEPTH Feet(meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft(meter)	R.A. cps	Un ppm		Au ppb				
00 (00)	Collar										
10 (3.0)	Overburden and casing			86							
20 (6.1)	Basalt, black, dense, red-brown rinds			78							
30 (9.1)	Basalt, black, dense, red-brown rinds			77							
40 (12.2)	Basalt, black, dense, red-brown rinds			78							
50 (15.2)	Basalt, black, dense, red-brown rinds, clay along			76							
	fractures										
60 (18.2)	Siltstone, dacite tuff	1994		74	0.8		<5				
	siltstone: grey, clay rich (55% of sample)										
	dacite tuff: white(45%) of sample										
70 (21.3)	Felsic (dacite) tuff, clay; felsic tuff (70%) red-	1995		78	1		-				
	brown stain on chips; clay: matrix of sample,										
	poor sample return - probably clay seam with rhy-										
	olite to dacite horizon, damp.										
80 (24.3)	Felsic tuff, siltstone; felsic tuff (rhyolite)	1996		78	1		<5				
	- 60% - white with yellow stains, siltstone - 30%,										
	quartzose, hematitic red to dark brown, fine										
	grained granite (?) chips - felsdpathic quartzose										
	rock, yellowish (10%), mud colour change from										
	brown to yellow										
90 (27.4)	Basalt; black to reddish, weathered, different	1997		75	0.6		-				
	from upper basalt, contains crystals of clear to										
	green mineral - not olivene, glassy, chips of rhy-										
	olite tuff (10%) from higher cuttings. Abundant										
	water, mud colour change yellow to yellow-brown.										

DRILL HOLE LOG
UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-5

DEPTH Feet (meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft (meter)	R.A. cps	Un ppm		Au ppb				
100 (30.4)	Basalt; black dense, 10% felsic tuff chips			78							
	(contamination)										
110 (33.5)	Basalt; black dense			85							
120 (36.5)	Basalt; fine grained feldspar crystals in chips of			79							
	basalt, mud colour, yellow-brown, 10% rhyolite										
	tuff chips										
130 (39.5)	Felsic volcaniclastic sandstone and siltstone (65%)	1998		78	0.4		<5				
	fine grained, yellow to red, black basalt chips										
	(35%), mud colour change to grey-brown										
140 (42.6)	Felsic volcaniclastic siltstone and fine sand-	1999		84	1		–				
	stone (75%) grey to brown, soft green amorphous										
	mineral (clay?) stains and permeates siltstone										
	chips, basalt chips ~25%										
150 (45.6)	Felsic volcaniclastic-siltstone, basalt, silt-			78							
	stone contains green clay, about 60% of sample,										
	basalt chips, 40% – dominant at end of hole										
160 (48.7)	Basalt, dense black (95%), felsic volcaniclastic			79							
	siltstone (5%)										
170 (51.7)	Basalt, dense black (90%), volcaniclastic silt-			78							
	stone and grey mudstone (10%)										
180 (54.7)	Basalt; dense black (95%), felsic volcaniclastic			80							
	siltstone, quartz cutting (5%)										
190 (57.8)	Basalt; large fracture in bedrock between 180-190'			76							
200 (60.8)	Basalt; dense black, weathered fractures-show			77							
	bleaching along fractures										
210 (63.9)	Basalt, siltstone, basalt dense black, composes	2000			0.8		<5				
	basal section of flows, grey clay rich siltstone										
	to claystone starts at 209'										

DRILL HOLE LOG
UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-5

DEPTH Feet(meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft(meter)	R.A. cps	Un ppm		Au ppb				
220 (66.9)	Siltstone, clay, basalt, carbonaceous shale silt-	7501		87	2		-				
	stone and clay 70%, basalt chips 30%, carbonaceous										
	layer ~1' thick at 211', clay and drill mud										
	(washings) are grey										
230 (70.0)	Quartz sand and chips/grey siltstone chips,	7502		84	1		<5				
	quartz 70%, siltstone 30%, fine grained chips										
	2-3 mmϕ										
240 (73.0)	Quartz sand, feldspar cuttings, granite chips,	7503		82	0.4		-				
	quartz 70%, feldspar 20%, granite 10%, chip size										
	coarsening up to 1.5 cmϕ										
250 (76.1)	Quartz sand, granite chips, feldspar chips, jas-	7504		79	0.4		<5				
	per chips, quartz 55%, granite 25%, feldspar 15%,										
	jasper 2%, 3% contamination of basalt and silt-										
	stone from above units										
260 (79.1)	Quartz sand and gravel, granite, feldspar chips,	7505		78	0.6		-				
	siliceous siltstone and clay, quartz 70%, 15%										
	feldspar, 5% granite, 10% siltstone, minor basalt										
	chips from above, some chert chips from clasts in										
	channel conglomerate, muscovite flakes in cuttings										
270 (82.1)	Quartz sand and gravel; clay, coal, quartz 60%,	7506		82	1		<5				
	feldspar 2%, granite 3%, coal 10%, clay and silt-										
	stone 10%, 5% contamination from above, clay and										
	coal seam at 268'										
280 (85.2)	Claystone; grey mud, no coal chips present	7507		85	2		-				
290 (88.2)	Clay, quartz sand and gravel, coal, granite gravel	7508		85	1		<5				
	meta-sediment, quartz 60%, coal 2%, granite and										
	black siliceous meta-sediment gravel 38%, some										

DRILL HOLE LOG
UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-5

DEPTH Feet(meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft(meter	R.A. cps	Un ppm		Au ppb				
290 (88.2)	continued.										
	pegmatite gravel in sample cuttings, clay portion										
	of sample washed out as mud, clay-sand contact										
	at 287'										
300 (91.3)	Quartz sand and gravel, granite and meta-sediment	7509		86	1		-				
	gravel, quartz 55%, granite 20%, metasediment 25%										
310 (94.3)	Quartz sand and gravel, granite, pegmatite and	7510		83	0.8		< 5				
	metasediment gravel, coal and claystone, quartz										
	60%, granite 20%, metasediment 15%, coal 2%,										
	claystone 3%										
320 (97.3)	Quartz sand and gravel, granite and metasediment	7511		84	0.8		-				
	coal, clay, quartz 60%, granite 15%, metasediment										
	20%, coal and clay 5%										
330 (100.3)	Quartz sand and gravel, clay, coal, granite and	7512		89	0.8		< 5				
	metasediment, quartz 65%, granite 10%, metasediment										
	20%, clay and coal 5%, clay and coal from 329-330'										
340 (103.4)	Clay, claystone, coal, quartz sand and pebbles,	7513		85	0.8		-				
	clay and claystone 90%, quartz sand and pebbles										
	8%, coal 2%, clay colour is grey, claystone may										
	include minor clay-rich siltstone										
350 (106.5)	Clay and claystone, yellow-brown colour	7514		84	1		< 5				
360 (109.5)	Clay, quartz sand and pebbles	7515		80	2		-				
370 (112.5)	Quartz sand and pebbles, granite and metasediment	7516		80	1		< 5				
	gravel, quartz 50%, granite 30%, metasediment										
	20%, granitic material green coloured and may										
	reflect epidotization and chloritization (pre-										
	miocene), poor sample return.										

DRILL HOLE LOG
UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-5

DEPTH Feet(meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft(meter)	R.A. cps	Un ppm		Au ppb				
380 (115.6)	Quartz sand and pebbles, metasediment gravel,	7517		79	0.8		-				
	green granite cuttings, quartz 60%, metasediment										
	20%, green granite 20%										
390 (118.6)	Granite cuttings, quartz cutting and pebbles,	7518		86	2		< 5				
	chert chips, green granite 60%, quartz 35%, chert										
	and basalt (contamination?) 5%, may be in base-										
	ment granite, minor quartz pebbles-mostly cuttings										
	no metasediment chips										
400 (121.7)	Granite cutting, quartz cuttings, quartz pebbles			82							
	basalt chips, granite 60%, quartz 30%, quartz peb-										
	bles and basalt chips 10% - as contamination,										
	granitic material is green and fine grained										
415 (123.2)	Granite cuttings, green to yellow, fine grained,			87							
	5% contamination with quartz pebbles and meta-										
	sediment chips and cuttings from above units.										
415 (123.2)	END OF HOLE										
	a) all steel casing left in the hole										
	b) PVC plastic pipe of 2 inch diameter was inser-										
	ted and left in the hole,										
	c) R.A. (radioactivity) of each sample was deter-										
	mined with an URTEC Differential Spectrometer,										
	model UG-135 averaging 3 separate 10 second count										
	periods,										
	d) The hole was probed with a combination Gamma										
	Ray and Neutron log tool by Roke Oil Enterprises Ltd.,										
	e) Un = uranium geochemical analysis with extrac-										
	tion by concentrated nitric acid.										

Paul A Stop

DRILL HOLE LOG

UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-6

PAGE 1 OF 5

PROJECT REEF
PROPERTY REEF #1 Claim
STARTED October 2, 1979
COMPLETED October 4, 1979
BEARING
INCLINATION vertical
LOGGED BY R. Sharp and M.J. Gidluck
DRILLED BY Alta. Southern Exploration Drilling
DRILL METHOD Rotary-Percussion
HOLE SIZE 5½ inches
COORDINATES
ELEVATION
FINAL DEPTH 425'; 129.3 meters

DEPTH Feet (meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft (meter)	R.A. cps	Un ppm		Au ppb				
00 (00)	Collar										
10 (3.0)	Casing and overburden			78							
20 (6.1)	Basalt, dense black			71							
30 (9.1)	Basalt, as above			73							
40 (12.2)	Basalt, dense black			71							
50 (15.2)	Basalt, dense black			68							
60 (18.2)	Basalt, dense black, brown weathered rinds on			67							
	some chips 5% of chips have grey to light brown										
	'bleached' portions										
70 (21.3)	Basalt, claystone			70							
	basalt, dense black; claystone, brown; clay-										
	stone begins at 69'										
80 (24.3)	Claystone, brown, fine grained, most of sample			77							
	pulverized to a clay rich sand										
90 (27.4)	Claystone, quartz-feldspathic sandstone and silt-	7519		73	1		-				
	stone; claystone, brown, fine grained to 89';										
	quartzo-feldspathic sandstone 89' to 93' (weathers										
	white to orange)										
100 (30.4)	Quartzo-feldspathic sandstone, sand, basalt			72							
	quartzo-feldspathic sandstone to 93' (as above)										
	brown sand (fine grained) 93' to 94'										
	basalt, dense black 94' to 100'										
110 (33.5)	Basalt, sand			74							
	basalt, dense black to weathered brown-orange (55%)										

DRILL HOLE LOG
UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-6

DEPTH Feet(meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft(meter)	R.A. cps	Un ppm		Au ppb				
110 (33.5)	continued.										
	sand; brown, fine-grained, may be from interflow										
	sand layer (45%)										
120 (36.5)	Basalt, dense black, minor brown weathered rinds			75							
	agate inclusions (< ½% of basalt chips) contact										
	with claystone at 120'										
130 (39.5)	Claystone, basalt; brown claystone chips, basalt,			76							
	dense black; contact at 128'										
140 (42.6)	Basalt: dense black, few brown weathered rinds			74							
150 (45.6)	Basalt: as above			68							
160 (48.7)	Basalt: dense black, abundant brown weathered			68							
	rinds										
170 (51.7)	Basalt: as above			70							
180 (54.7)	Basalt: dense black, basalt with brown rinds ends			66							
	at 176', dense black basalt 176-180'										
190 (57.8)	Basalt, clay-rich siltstone, dense black basalt to			73							
	184', grey clay-rich siltstone 184'-190';										
	contains very fine clastic fragments of quartz,										
	waterlain. * Hit watertable at 185'.										
200 (60.8)	Quartzo-feldspathic siltstone, grey, 20% clay,	7520		78	0.8		< 5				
	competent. May contain traces of carbonaceous										
	matter										
210 (63.9)	Quartzo-feldspathic siltstone (as above), basalt			74							
	chips black dense and brown weathered rinds,										
	contact near 200'.										
220 (66.9)	Basalt, claystone to siltstone black dense basalt			76							
	chips (45%) with brown rinds, grey siltstone,										

DRILL HOLE LOG
UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-6

DEPTH Feet(meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft(meter)	R.A. cps	Un ppm		Au ppb				
220 (66.9)	continued.										
	clay-rich (55%), thin basalt flow between 208'										
	and 212'.										
230 (70.0)	Siltstone, basalt; basalt is grey and weathered,			84							
	vesicular (15%) siltstone is grey (85%)										
240 (73.0)	Basalt: grey bleached vesicular plus black,			68							
	dense chips, mixture of weathered and fresh basalt										
250 (76.1)	Basalt: as above			71							
260 (79.1)	Basalt: some hard, grey, contaminated flows or			76							
	intermediate volcanics										
270 (82.1)	Basalt: as above, no intermed. volcanics.			74							
280 (85.2)	Basalt: as above			76							
290 (88.2)	Basalt: as above			72							
300 (91.3)	Basalt: as above			77							
310 (94.3)	Basalt: similar to above with hard grey inter-			75							
	med. volcanics or contaminated with siltstone										
	inclusions										
315 (95.8)	Basalt: as above, increased grey fragments,	7521			1		-				
	siltstone?; few quartz and granite clasts in										
	lower foot near contact										
320 (97.3)	Channel sediments: white, rounded quartz pebbles	7522		75	1		< 5				
	and sand size fragments approximately 45%, 45%										
	pale green, granitic clasts and fragments about										
	40%, peg'c., meta-sediments and basalt cave 15%;										
	increased water										
330 (100.3)	Quartz gravels: as above, slightly larger grain	7523		81	0.6		-				
	size; less granitic fragments, more meta-sediments										
	and meta-volcanics.										

DRILL HOLE LOG
UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-6

DEPTH Feet(meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft(meter)	R.A. cps	Un ppm		Au ppb				
340 (103.4)	Quartz gravels: as above, quartz now 65%	7524		82	1		< 5				
350 (106.5)	Quartz gravels and clay: as above; clay zone @	7525		81	0.8		-				
	349'-350' with coal fragments										
360 (109.5)	Clay zone: grey plasticene type clay with scat-	7526		81	1		< 5				
	tered small coal chips; gravels and sand is mostly										
	cave; yellow clay @ 359'-360'; poor sample return										
370 (112.5)	Clay and gravel: yellow clay as above with some	7527		82	1		-				
	gravel										
380 (115.6)	Clay and volcaniclastic: yellow-grey clay appears	7528		81	2		35				
	to have an ash component; sand grains of quartz										
	and yellow agate fragments; few rounded pebbles										
	of fg. volcaniclastic (pyroclastic?) rock, quartz										
	down to 25%										
390 (118.6)	Agate and quartz gravels; clay: similar to above;	7529		82	1		-				
	increased agate chips, all angular -35%; 2 clay										
	types, grey and bright pink; the latter probable										
	volcanic ash; increased rounded quartz to 35%										
400 (121.7)	Agate, volcaniclastic sand granodiorite: similar	7530		76	0.8		160				
	to above, decreasing clay, agate 50%; pink clay										
	and harder fg. volcaniclastic clasts; greenish										
	granitic chips, about 15%, encountered @ 397';										
	marked decrease in quartz to 10-15%										
410 (124.7)	Granodiorite: greenish granitic chips increased	7531		79	0.6		-				
	to 50%; still 15% agate, 15% volcanic and 30%										
	sediment cave										
420 (127.8)	Granodiorite: as above; granitic chips now 80%	7532		81	0.8		10				
	of sample.										

DRILL HOLE LOG
UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-6

PAGE 5 OF 5

DEPTH Feet (meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft(meter)	R.A. cps	Un ppm		Au ppb				
425 (129.3)	Granodiorite: as above, 95% granitic	7533		73	--		-				
425 (129.3)	BOTTOM OF HOLE										
	a) all casing left in hole										
	b) PVC plastic pipe (2 inch diameter) was inser-										
	ted to bottom of hole										
	c) R.A. (radioactivity) of each sample was deter-										
	mined using an URTEC Differential Spectrometer,										
	model UG-135, and averaging 3 separate 10 second										
	count periods,										
	d) The hole was probed with a combination Gamma										
	Ray and Neutron log tool by Roke Oil Enterprises Ltd.										
	e) Un = uranium geochemical analysis with extrac-										
	tion by concentrated nitric acid.										
	Kent J. Slemp										
	H. Hiddleck										

DRILL HOLE LOG

UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-7

PAGE 1 OF 4

PROJECT REEF
PROPERTY REEF #1 Claim
STARTED October 5, 1979
COMPLETED October 6, 1979
BEARING ____ INCLINATION vertical
LOGGED BY M.J. Gidluck
DRILLED BY Alta. Southern Expl. Drilling
DRILL METHOD Rotary-Percussion
HOLE SIZE 5½ inches
COORDINATES ____
ELEVATION ____
FINAL DEPTH 325 ft.; 98.8 meters

DEPTH Feet(meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft(meter)	R.A. cps	Un ppm
00 (00)	Collar				
17 (5.2)	Overburden and 6 inch casing				
30 (9.1)	Basalt: numerous weathered chips; fractured and			71	
	weathered basalt flow				
40 (12.2)	Basalt: fresh, dark green-black, massive basalt			72	
	flows, little or no weathering				
50 (15.2)	Basalt: as above, soft yellow brown dry clay @			74	
	45'-50'; probable ash layer, limonitic				
58 (18.0)	Interformational sediments: assorted volcani-			73	
	clastic sediments-ashy mudstones, pyroclastics,				
	abundant small volcanic clasts in sedimentary				
	rocks, sample damp but not wet				
70 (21.3)	Basalt and interformational sediments; sediments			72	
	similar to above, yellow limonitic; green and grey				
	volcaniclastics; 50% dark green basalt fragments				
80 (24.3)	Basalt: fresh dark green as above			75	
90 (27.4)	Basalt: fractured, limonitic oxidization, possible				
	older flows				
100 (30.4)	Basalt: similar to above, less oxidized fractures;			70	
	minor white carb. or zeolite amydules				
110 (33.5)	Basalt: fractured and oxidized surfaces as @ 90'			74	
120 (36.5)	Basalt: calcite in vesicules as @ 100'			73	
130 (39.5)	Basalt: as above			71	

DRILL HOLE LOG
UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-7

DEPTH Feet (meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft (meter)	R.A. cps	Un ppm		Au ppb				
135 (41.0)	Basalt and channel gravels: grey basal, chilled	7534		79	1		<5				
	flow margin; quartzose channel gravels start at										
	133', some grey clay but sample dry										
140 (42.5)	Quartz gravels: abundant white, rounded quartz	7535		80	0.8		-				
	clasts, sand to pebble size about 70%; 10% green										
	granitic clasts; meta volcanics and meta sedi-										
	ments 20%										
150 (45.6)	Quartz gravels: abundant white quartz as above	7536		77	1		<5				
	few pebbles of agate										
160 (48.7)	Quartz gravels: as above	7537		76	1		-				
170 (51.7)	Quartz gravels: as above, few dark grey cherty	7538		75	0.6		<5				
	pebbles										
180 (54.7)	Quartz gravels: minor clay; few small fragments	7539		74	0.6		-				
	of black coal										
190 (57.8)	Quartz gravels and clay: similar to above but	7540		76	0.8		<5				
	more clay @ 188' to 190'; small fragments of coal;										
	quartz 65%; remainder is chert and meta sediments										
	and volcanic rocks										
200 (60.8)	Clay-coal zone: f.g. grey clay horizon with chips	7541		87	2		-				
	of coal; dry-still above water table										
210 (63.9)	Clay and gravels: clay zone as above then into	7542		81	0.8		<5				
	quartz gravels; no visible coal.										
220 (66.9)	Clay and gravels: as above, grey plasticky clay;	7543		83	0.8		-				
	damp; abundant black coal chips										
230 (70.0)	Clay and gravels; as above, clay sticky and	7544		78	0.8		<5				
	samples contaminated; few basalt fragments; some										
	coal.										

DRILL HOLE LOG
UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-7

DEPTH	DESCRIPTION	SAMPLE NO.	LENGTH ft(meter)	R.A. cps	Un ppm		Au ppb				
240 (73.0)	Clay and gravel: as above, contaminated sample;	7545		78	0.8		-				
	sticky clay.										
250 (76.1)	Clay and gravel: as above.	7546		75	0.6		<5				
260 (79.1)	Clay and gravel: as above, becoming wetter;	7547		84	1		-				
	abundant small fragments coal; sample contaminated										
	from above caving; quartz still 65%.										
270 (82.1)	Wet clay and gravels: as above, sample wetter	7548		74	0.8		<5				
	but not flowing water; gravels are finer grained;										
	quartz 70%.										
280 (85.2)	Quartz gravels: as above, quartz 70%	7549		75	1		-				
290 (88.2)	Quartz gravels: as above, small fragments coal;	7550		78	1		<5				
	10 to 15% small green granitic fragments;										
	abundant sand size quartz.										
300 (91.3)	Quartz gravels and granite?: similar above	7551		80	0.8		-				
	increased basalt cave; 15% greenish granitic										
	fragments - probable basement contact										
310 (94.3)	Granite and quartz sands and gravels: fine	7552		79	2		<5				
	grained sand size granitic fragments increased to										
	40% - also includes feldspar grains; basement										
	rock; quartz down to 40%										
320 (97.3)	Granite: increased granite and feldspar frag-	7553		90	4		-				
	ments to 70%; numerous small pyrite grains in										
	granite chips approximately 1%; decreased cave										
	material										
325 (98.8)	Granite: as above; granite-feldspar now 85% of	7554		86	4		<5				
	sample										
325 (98.8)	BOTTOM OF HOLE										

DRILL HOLE LOG

UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-7

DEPTH Feet (meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft (meter)	R.A. cps	Un ppm						
	a) steel casing left in hole										
	b) PVC plastic pipe of 2 inch diameter inserted										
	to 325' and left in hole										
	c) R.A. (radioactivity) of each sample was deter-										
	mined using an URTEC Differential Spectrometer,										
	model UG-135 and averaging 3 separate 10 second										
	count periods										
	d) The hole was probed with a combination Gamma										
	Ray and Neutron log tool by Roke Oil Enterprises										
	Ltd.										
	e) Un = uranium geochemical analysis with										
	extraction by concentrated nitric acid										
	D. J. Hollock										

DRILL HOLE LOG

UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-8

PAGE 1 OF 3

PROJECT REEF
PROPERTY REEF #1 Claim
STARTED Oct. 5, 1979
COMPLETED Oct. 5, 1979
BEARING ____ INCLINATION Vertical
LOGGED BY M.J. Gidluck
DRILLED BY Alberta Southern Exploration / Drilling
DRILL METHOD Rotary Percussion
HOLE SIZE 5½ inch
COORDINATES ____
ELEVATION ____
FINAL DEPTH 345 Ft.; 104.9 meters

DEPTH ft.	DEPTH meters	DESCRIPTION	SAMPLE NO.	LENGTH	RA cps.	Un ppm.		Au ppb				
00	(00)	Collar										
19	(4.8)	Overburden and 6 inch casing										
28	(8.6)	Water Table										
30	(9.1)	Weathered Basalt: fractured and oxidized			81							
40	(12.2)	Basalt: as above			82							
50	(15.2)	Basalt: fresh, dark green mass, flows; no weathering;			84							
		small white quartz clots filling cavities.										
60	(18.2)	Basalt: as above, few yellow weathered fragments			79							
70	(21.3)	Basalt: as above			75							
80	(24.3)	Chilled Basalt and Clay: upper 2 ft. is soft	7555		77	0.8		-				
		yellow clay then into hard grey volcanics,										
		vesicular flows; soft claystone fragments and										
		interformational sediments										
90	(27.4)	Interformational Sediments and Basalt: as above,	7556		78	1		< 5				
		light colored grey-green, fragments volcani-										
		clastic fragments										
100	(30.4)	Basalt: fresh dark green as above			79							
110	(33.5)	Basalt: as above; small quartz and zeolite cavity			75							
		fillings										
120	(36.5)	Basalt: as above			78							
130	(39.5)	Basalt: as above, few interformational sediments			76							
140	(42.5)	Basalt: as above			77							
150	(45.6)	Basalt: as above with fragments grey chilled margin			74							

DRILL HOLE LOG
UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-8

DEPTH feet(meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft(meter)	R.A. cps	Un ppm		Au ppb				
160 (48.7)	Basalt: increased grey chilled flow margins			78							
170 (51.7)	Channel gravels: abundant quartz clasts about	7557		77	2		-				
	60% of sand to pebble size; granitic, peg'c. and										
	meta-sediments 30%; 10% cave from above; increased										
	water flow										
180 (54.7)	Quartz gravels: as above, abundant water flow;	7558		74	0.4		< 5				
	increased quartz pebble size and content to 80%										
190 (57.8)	Quartz gravels: as above	7559		90	0.4		-				
200 (60.8)	Quartz gravels: as above, quartz clasts 75%	7560		74	0.4		< 5				
210 (63.9)	Quartz gravels: as above; small black chips of	7561		77	0.6		-				
	coal										
220 (66.9)	Quartz gravels: as above, great volume of water	7562		78	0.6		< 5				
	from hole; granitic fragments 5%										
230 (70.0)	Clay and gravels: high water flow washing out	7563		78	0.6		-				
	most clay; few very small chips coal										
240 (73.0)	Clay and gravels: decreasing clay with depth;	7564		79	0.2		< 5				
	abundant quartz pebbles and sand grain										
250 (76.1)	Quartz gravels: as above, abundant water flow	7565		75	0.2		-				
	about 20 gallons per minute; quartz 65%; other										
	is meta-sediments; meta-volcanics, peg'c.										
260 (79.1)	Quartz gravels and coal: as above, numerous	7566		76	0.4		< 5				
	fragments of coal										
270 (82.1)	Quartz gravels and clay: as above with minor	7567		78	0.4		-				
	fine clay										
280 (85.2)	Quartz gravels and clay: as above, some clay;	7568		76	1		< 5				
	abundant large fragments of black coal										
290 (88.2)	Quartz gravels, sand and clay: finer fractures	7569		75	0.2		-				
	of above, few small coal fragments; quartz 65%										

DRILL HOLE LOG
UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-8

PAGE 3 OF 3

DEPTH Feet(meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft(meter)	R.A. cps	Un ppm		Au ppb				
300 (91.3)	Quartz gravels: as above	7570		80	0.4		< 5				
310 (94.3)	Quartz gravels; as above, numerous small coal	7571		81	0.4		-				
	fragments; quartz 65%, no granite										
320 (97.3)	Quartz gravels: as above	7572		75	0.4		10				
330 (100.4)	Granite: contact @ 322'; sample is 80% small	7573		75	0.6		-				
	granitic chips; 10% quartz and 10% other										
340 (103.4)	Granite: as above 95% granite and feldspar sand			76							
	size chips; few minute mafic specks in each										
	granitic chip										
345 (104.9)	Granite: as above, chips larger										
345 (104.9)	BOTTOM OF HOLE										
	a) steel casing left in hole										
	b) PVC plastic pipe of 2 inch diameter inserted										
	to 345' and left down hole										
	c) R.A. (radioactivity) one (1) of each sample										
	was determined using an URTEC Differential Spec-										
	trometer, model UG-135 and averaging 3 separate										
	10 second count periods										
	d) The hole was probed with a combination Gamma										
	Ray and Neutron log tool by Roke Oil Enterprises										
	Ltd.										
	e) Un - uranium geochemical analysis with extrac-										
	tion by concentrated nitric acid										
	M Siddeek										

DRILL HOLE LOG

UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-9

PROJECT REEF | BEARING | INCLINATION Vertical | HOLE SIZE 5½ inch diameter

PROPERTY REEF #3 Claim | LOGGED BY M.I. Gidluck | COORDINATES

STARTED Oct. 6, 1979 | DRILLED BY Alberta Southern Exploration | ELEVATION

COMPLETED Oct. 6, 1979 | DRILL METHOD Rotary Percussion / Drilling | FINAL DEPTH 152 ft.; 46.3 meters

DEPTH ft.	DEPTH meters	DESCRIPTION	SAMPLE NO.	LENGTH	RA cps.
00	(00)	Collar			
20	(6.1)	Overburden and Casing - 6 inch diameter, steel			74
30	(9.1)	Basalt: massive dark green fresh basalt, some fracturing			73
40	(12.2)	Basalt: as above in upper part of sample then into overburden			75
50	(15.2)	Overburden: 65% basalt fragments, but also angular to subrounded quartz and granite chips, some weathered yellow; considerable amount of fine soil fraction.			80
60	(18.2)	Overburden: as above; hole caving, blocky and jamming drillrods			76
70	(21.3)	Overburden: as above			76
80	(24.3)	Overburden: as above			75
90	(27.4)	Overburden and Basalt: some red oxidized basalt fragments; highly fractured; overburden of mixed composition			78
100	(30.4)	Basalt: fresh dark green-black mass. basalt, few fractures			75
110	(33.5)	Basalt and Overburden Boulders: 70% of sample is basalt, probably large basalt boulders; remainder of sample is granite, sediments and quartz.			76
120	(36.5)	Overburden and Basalt: as above			75

DRILL HOLE LOG
UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-9

DEPTH	DESCRIPTION	SAMPLE NO.	LENGTH	RA cps.	UN ppm		Au ppb				
130 (39.5)	Basalt and Overburden? similar to above, increased basalt chips and volcaniclastics; some fragments appear weathered; hole still caving and jamming.			75							
130 (39.5)	Water Table										
140 (42.5)	Basalt and Overburden?: water intersected at top of sample; 90% is volcanic, mainly basalt, chilled basalt and volcaniclastic fragments; sample highly contaminated by caving			68							
152 (46.3)	Basalt and Overburden?: as above, majority of fragments volcanic but few granitic chips and grey siltstone; periodic loss of sample return; hole caving badly	7574		74	0.6		10				
152 (46.3)	HOLE ABANDONNED										
a)	Steel casing left in hole										
b)	RA (radioactivity) of each sample was determined using an URTEC Differential Spectrometer, model UG-135 and averaging 3 separate 10 second count periods.										
c)	PVC plastic pipe was not inserted in this hole nor was it probed.										
d)	U_n = uranium geochemical analysis with extraction by concentrated nitric acid.										

M. Hillock

DRILL HOLE LOG

UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-10

PAGE 1 OF 3

PROJECT REEF
PROPERTY REEF #3 Claim
STARTED October 7, 1979
COMPLETED October 7, 1979
BEARING ____ INCLINATION vertical
LOGGED BY M.J. Gidluck
DRILLED BY Alberta Southern Exploration
DRILL METHOD Rotary Percussion
HOLE SIZE 5½ inch diameter
COORDINATES ____
ELEVATION ____
FINAL DEPTH 325 ft.; 95.8 meters

DEPTH Feet (meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft (meter)	R.A. cps	Un ppm		Au ppb				
00 (00)	Collar										
6 (1.8)	Overburden and casing; no shoe										
10 (3)	Basalt			80							
20 (6.1)	Basalt: massive dark green basalt			75							
30 (9.1)	Basalt: as above minor clay at bottom			81							
40 (12.2)	Basalt and interformational sediments: damp sam-	7575		76	0.6		-				
	ple, some red-brown clay; mainly sediments and										
	volcanics-partially oxidized										
50 (15.2)	Basalt and interformational sediments: as above	7576		80	0.8		<5				
60 (18.2)	Interformational sediments and clay and basalt:	7577		79	0.8		-				
	most of basalt is lighter coloured, chilled										
70 (21.3)	Clay and interformational sediments; grey sticky	7578		83	1		<5				
	clay; volcanic sediments and grey chilled basalt										
	fragments; increased water but not flowing										
80 (24.3)	Clay and interformational sediments			78							
90 (27.4)	Basalt and clay: mainly hard green basalt; with			81							
	few chips of blue-green soft soapy clay mineral;										
	small water flow.										
100 (30.4)	Basalt; as above with few chips of the "soapstone"			81							
110 (33.5)	Basalt: as above, traces "soapstone"			75							
120 (36.5)	Basalt: as above			81							
130 (39.5)	Basalt: as above			77							
140 (42.5)	Basalt: as above			76							
150 (45.6)	Basalt: as above			76							

DRILL HOLE LOG
UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-10

DEPTH Feet (meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft (meter)	R.A. cps	Un ppm		Au ppb				
160 (48.7)	Basalt: as above; massive dark green to black			80							
	when wet; few small chips of the blue-green soap-										
	stone; drill progress very slow perhaps due to										
	the soft soapy rock cushioning the percussion										
	hammer										
170 (51.7)	Basalt: as above			80							
180 (54.7)	Basalt: as above			84							
190 (57.8)	Basalt: as above			86							
200 (60.8)	Basalt: as above			80							
210 (63.9)	Basalt: as above			75							
220 (66.9)	Basalt: as above; few lighter coloured chips			83							
	with vesicular texture indicates flow margins;										
	increasing blue-green "soapstone"										
230 (70.0)	Basalt: as above, some larger soapy fragments			91							
240 (73.0)	Basalt: as above			81							
250 (76.1)	Basalt: as above; oxidized surfaces on basalt			80							
	fragments indicate outer flow margins and auto-										
	brecciated flow edges; few large angular quartz										
	fragments										
260 (79.1)	Basalt: as above			76							
270 (82.1)	Basalt: as above; still with oxidized and soapy			77							
	clay flow margins										
280 (85.2)	Basalt: as above; no oxidized basalt and only			76							
	a few soapy clay fragments										
290 (88.2)	Basalt: as above; increased soapy claystone			71							
300 (91.3)	Basalt and claystone: as above with abundant	7579		74	0.4		–				
	green soapy claystone probably chlor'c talcose,										
	clay minerals, up to 20%										

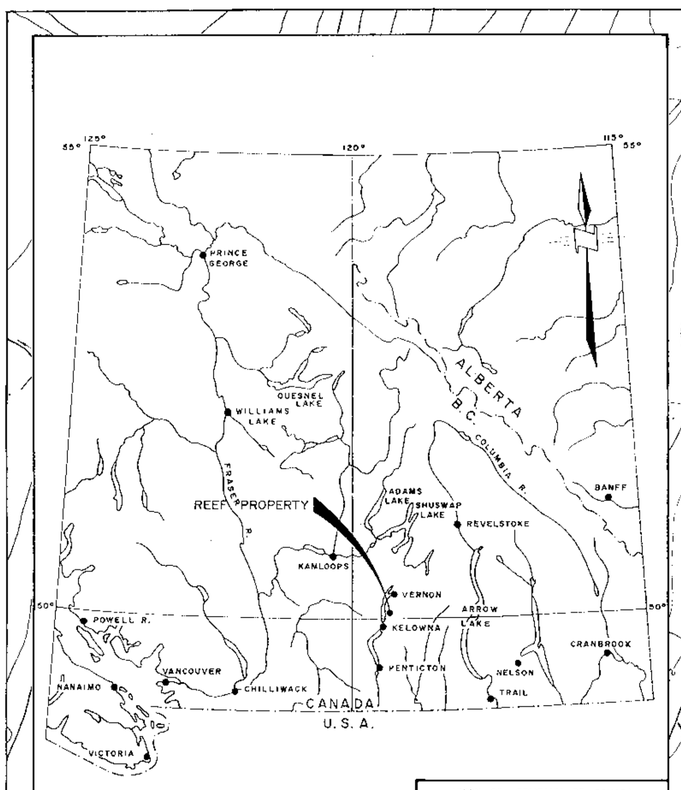
DRILL HOLE LOG
UNION OIL MINERALS DEPARTMENT

HOLE No. 79R-10

PAGE 3 OF 3

DEPTH Feet(meters)	DESCRIPTION	SAMPLE NO.	LENGTH ft(meter)	R.A. cps	Un ppm		Au ppb				
310 (94.3)	Basalt and claystone: as above with dark green	7580		73	0.6		< 5				
	claystone upto 40% of sample; dark grey basalt										
	rapidly chilled										
325 (95.8)	Basalt: similar to above, decreased claystone	7581		73	0.4		-				
	fragments										
325 (95.8)	BOTTOM OF HOLE										
	a) steel casing left in hole										
	b) PVC plastic pipe of 2 inch diameter inserted										
	and left down hole										
	c) R.A. (radioactivity) of each sample was deter-										
	mined using an URTEC Differential Spectrometer,										
	model UG-135 and averaging 3 separate 10 second										
	count periods										
	d) The hole was probed with a combination Gamma										
	Ray and Neutron log tool by Roke Oil Enterprises	Ltd.									
	e)Un = uranium geochemical analysis with extrac-										
	tion by concentrated nitric acid.										

H J Riddle



UNION OIL COMPANY OF CANADA

LOCATION MAP

REEF CLAIM GROUPS

VERNON MINING DIVISION
BRITISH COLUMBIA

Date : October, 1978 | Scale : 1" = 64 Miles

Dwn by : TOM RAVENHILL | Dwg no. 1745-1

GNEISS
GREEN-GREY IMPURE QUARTZITE
GHANITE AUGEN GNEISS
GRANITIC GNEISS
AND AMPHIBOLITE
DIORITE
TELEPHONE LINE
REEF 8
OYAMA LAKE
REEF 5
REEF 4
REEF 9
FRIABLE FELSIC VOLCANICS
AMPHIBOLITE
GNEISS & AMPHIBOLITE
CAVED HEINET
FELSIC TUFF
APPROXIMATE LOCATION OF AITKENS & STAPLES WORKINGS
79R-9
79R-10
FELSIC TUFF, FOLIATED GRANODIORITE
EC 78-2
OUTCROPS OF FLOW BANDED RHYOLITE & FELSIC TUFF
REEF 3
PORPHYRITIC QUARTZ MONZONITE
RUBBLE CROP OF CHANNEL MATERIAL
FOLIATED GRANODIORITE
REEF 6
REEF 2
79R-3
79R-4
79R-6
EC 78-1
AREA OF ELEY & HALL LEASES
79R-1
79R-2
79R-5
79R-8
79R-7
REEF 7
REEF 1
ECHO LAKE
REEF 10

LEGEND

5	MIOCENE	FINE GRAINED, MASSIVE TO PORPHYRITIC DARK GRAY BASALT.
4	MIOCENE	QUARTZ PEBBLE CONGLOMERATE, COARSE SANDSTONE, POORLY SORTED SILTSTONE WITH MUDSTONE AND CARBONACEOUS LAYERS.
3	EOCENE ?	FELSIC VOLCANICS - FLOW BANDED RHYOLITE, WELDED TUFF ; SOFT, POROUS, WHITE TO BUFF ASH BEDS.
2A / 2B	(A) (B)	FOLIATED AND SLIGHTLY CHLORITIZED GRANODIORITE. PINKISH, COARSELY PORPHYRITIC QUARTZ MONZONITE.
1		GRANITIC GNEISS, AUGEN GNEISS, AMPHIBOLITE, QUARTZITE AND META-ARGILLITE.

* CONCENTRATIONS OF QUARTZ PEBBLES IN OVERBURDEN.

OUTCROP AREA

GEOLOGICAL CONTACT - APPROXIMATE

TUNNEL

BUILDING

ROAD

SITE OF DIAMOND DRILL HOLE

INTERPRETED COURSE OF PALEOCHANNEL.

CLAIM BOUNDARY

79R-3 VERTICAL ROTARY-PERCUSSION DRILL HOLES DRILLED IN 1979.

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 7700

SCALE 1:10,000

0 100 200 300 400 500 600 METERS

UNION OIL COMPANY OF CANADA

REEF CLAIMS

VERNON MINING DIVISION

BRITISH COLUMBIA

DRILL HOLE AND GEOLOGY PLAN

FIELD WORK BY: M.J. GIDLUCK AND KERR DAWSON & ASSOCIATES LTD.	SCALE 1:10,000 1cm = 100meters
DRAWN BY	DATE OCTOBER, 1979
NTS : 82.L/3W	DRAWING NO. FIGURE II-1

ROKE

GAMMA RAY NEUTRON LOG

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	
LSD	
SEC	
TWP	
RGE	
W ___ M	
COMPANY	UNION OIL COMPANY OF CANADA
WELL	79 R-1
LOCATION	
FIELD	REEF CLAIMS
PROVINCE	BRITISH COLUMBIA
Other Services:	NONE

Permanent Datum: GROUND LEVEL Elev. ______ K.B. ______
Log Measured from: CASING .4M Above Perm. Datum CSG ______
Well Depths Measured from: CASING G.L. ______

Run. No.	ONE	TWO
Date	27 SEPT 79	27 SEPT 79
First Reading	114.5 M	112 M
Last Reading	00	
Footage Logged	114.5	
Depth Reached	114.8	
Depth Driller	115.8	
Casing Roke		
Casing Driller		
Fluid Type	WATER	
Liquid Level	64 M	
Min. Diam.	13 CM	
Rm @		
Operating Time	1½ HOURS	
Truck No.	35	

Recorded By: PETERSON Witnessed By: GIDLUCK

EQUIPMENT DATA

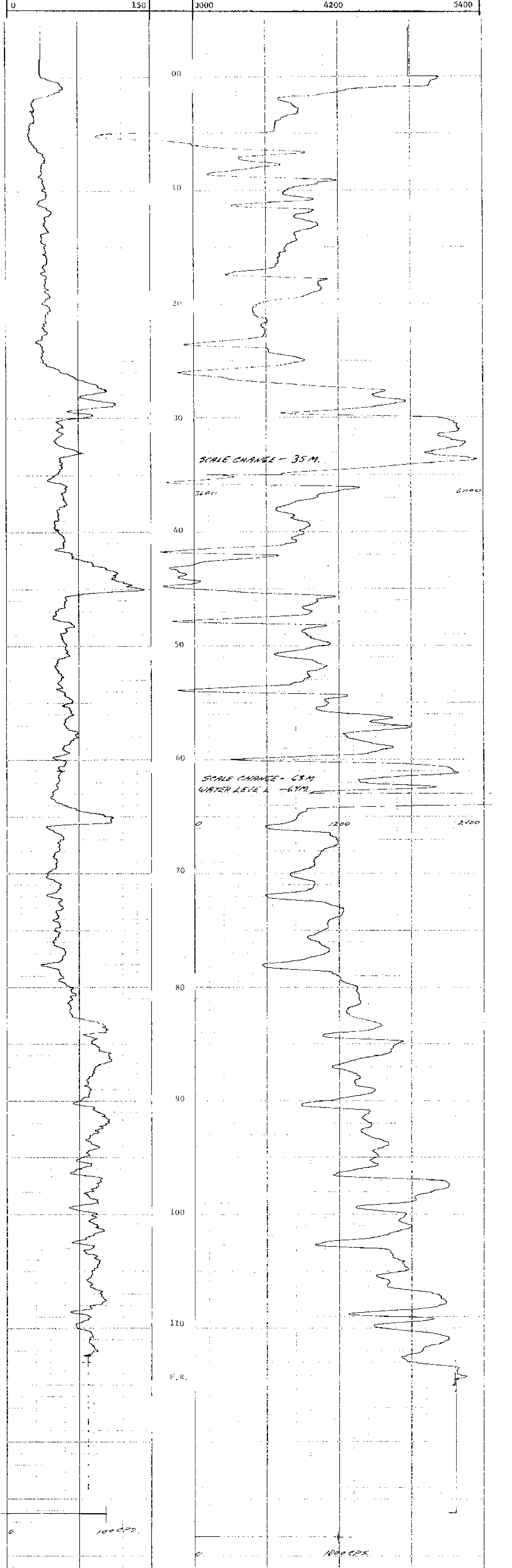
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.	125A	LOG TYPE	NEUTRON/NEUTRON
DIAMETER	31 MM	TOOL MODEL NO.	125A
DETECTOR MODEL NO.		DIAMETER	31 MM
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	10 CM	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	2.15 M	LENGTH	
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	127
HOIST TRUCK NO.		SPACING	.43 M
INSTRUMENT TRUCK NO.	35	TYPE	AmBe
TOOL SERIAL NO.	125004	STRENGTH	3 CURIES

LOGGING DATA

GENERAL				GAMMA RAY				NEUTRON			
RUN NO.	DEPTHS FROM	DEPTHS TO	SPEED M/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	API N. UNITS PER LOG DIV.
1	00	35	6	3	100	0L	15	3	1000	25L	120
	35	63	6	3	100	0L	15	3	1000	30L	120
	63	114.5	6	3	100	0L	15	3	1000	0L	120

REMARKS: LOGGED THROUGH DRILL ROD

GAMMA RAY	DEPTHS	NEUTRON
GAMMA RAY INCREASES → API 15		NEUTRON INCREASES → API 120
0 — 150		3000 — 4200 — 5400

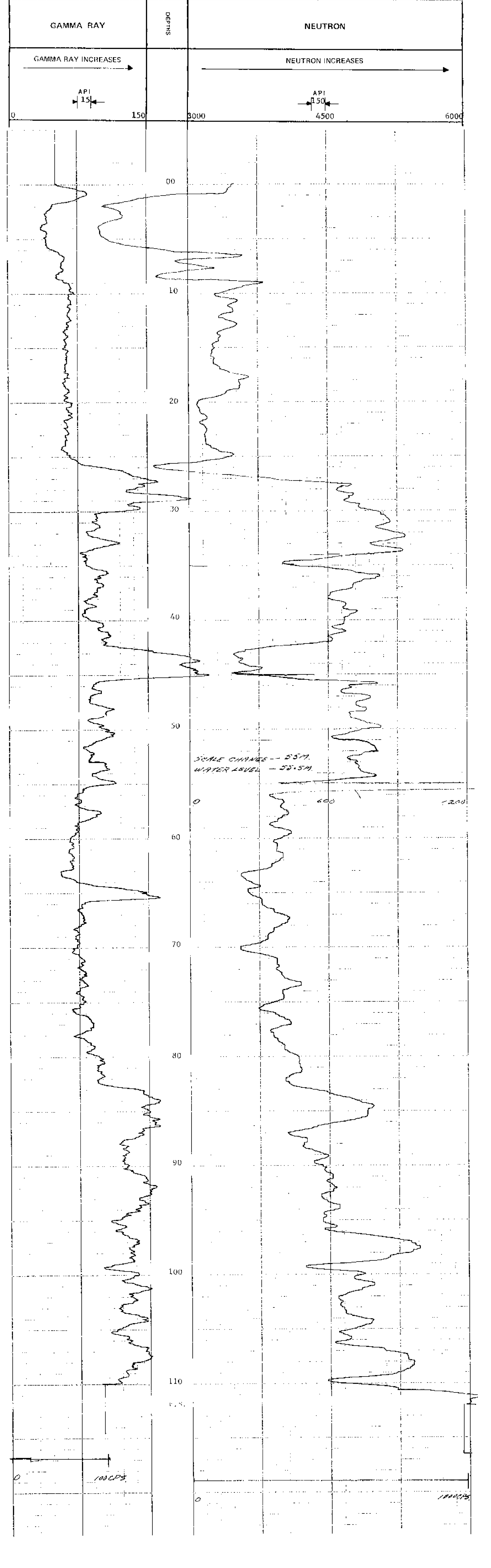


LOGGING DATA

GENERAL				GAMMA RAY				NEUTRON			
RUN NO.	DEPTHS FROM	DEPTHS TO	SPEED M/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	API N. UNITS PER LOG DIV.
2	00	55	6	3	100	0L	15	3	1000	20L	150
	55	112	6	3	100	0L	15	3	1000	0L	60

REMARKS: LOGGED THROUGH PLASTIC PIPE

GAMMA RAY	DEPTHS	NEUTRON
GAMMA RAY INCREASES → API 15		NEUTRON INCREASES → API 150
0 — 150		3000 — 4500 — 6000



7700

ROKE OIL ENTERPRISES LTD. CALGARY, ALBERTA

GAMMA RAY NEUTRON LOG
CALIPER
DENSILOG

FILE NO.	
LSD	
SEC	
TWP	
RGE	
W M	
COMPANY	UNION OIL COMPANY OF CANADA
WELL	79 R-2
LOCATION	
FIELD	REEF CLAIMS
PROVINCE	BRITISH COLUMBIA
Other Services	NONE
Permanent Datum	GROUND LEVEL Elev.
Log Measured from	CASING 2M Above Perm. Datum
Well Depths Measured from	CASING
K.B.	
CSG	
G.L.	

Run No.	ONE
Date	6 OCT 79
First Reading	115
Last Reading	00
Footage Logged	115
Depth Reached	115.3
Depth Driller	
Casing Roke	
Casing Driller	
Fluid Type	WATER
Liquid Level	24.6 M
Min. Diam.	13 CM
Rm @	
Operating Time	1 HR
Truck No.	35
Recorded By	PETERSON
Witnessed By	GIDLUCK

EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.		RUN NO.	
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER		TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	
TYPE		DETECTOR MODEL NO.	
LENGTH		TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE		LENGTH	
GENERAL		SOURCE MODEL NO.	MRC-N-SS-W
HOIST TRUCK NO.		SERIAL NO.	
INSTRUMENT TRUCK NO.		SPACING	
TOOL SERIAL NO.		TYPE	AmBe
		STRENGTH	

LOGGING DATA

GENERAL				GAMMA RAY				NEUTRON			
RUN NO.	DEPTHS FROM	DEPTHS TO	SPEED M/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	API N. UNITS PER LOG DIV.
1	00	24	6	3	100	0L	15	3	1000	20L	120
"	24	33	6	3	100	0L	15	3	1000	0L	120
"	33	115	6	3	100	0L	15	3	1000	0L	60

REMARKS

GAMMA RAY	DEPTHS	NEUTRON
GAMMA RAY INCREASES → API 15		NEUTRON INCREASES → API 120
0 — 150		2400 — 3600 — 4800

ROKE OIL ENTERPRISES LTD. CALGARY, ALBERTA

GAMMA RAY NEUTRON LOG
CALIPER
DENSILOG

FILE NO.
LSD
SEC
TWP
RGE
W____M

COMPANY: UNION OIL COMPANY OF CANADA
WELL: 79 R-4
LOCATION:
FIELD: REEF CLAIMS
PROVINCE: BRITISH COLUMBIA
Other Services: NONE

Permanent Datum: GROUND LEVEL Elev.
Log Measured from: CASING .3 M Above Perm. Datum
Well Depths Measured from: CASING
K.B.
CSG
G.L.

Run. No.	ONE		
Date	6 OCT 79		
First Reading	127		
Last Reading	00		
Footage Logged	127		
Depth Reached	127.3		
Depth Driller			
Casing Roke			
Casing Driller			
Fluid Type	WATER		
Liquid Level	80 M		
Min. Diam.	13 CM		
Rm @			
Operating Time	1 HR.		
Truck No.	35		

Recorded By: PETERSON
Witnessed By: GIDLUCK

EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.	125A	LOG TYPE	NEUTRON/NEUTRON
DIAMETER	31 MM	TOOL MODEL NO.	125A
DETECTOR MODEL NO.		DIAMETER	31 MM
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	10 CM	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	2.15 M	LENGTH	
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	127
HOIST TRUCK NO.		SPACING	.43 M
INSTRUMENT TRUCK NO.	35	TYPE	AmBe
TOOL SERIAL NO.	125004	STRENGTH	3 CURIES

LOGGING DATA

GENERAL				GAMMA RAY				NEUTRON			
RUN NO.	DEPTHS FROM	DEPTHS TO	SPEED M/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	API N. UNITS PER LOG DIV.
1	00	84	6	3	100	0L	15	3	1000	20L	120
	84	127	6	3	100	0L	15	3	1000	0L	60

REMARKS

GAMMA RAY	DEPTHS	NEUTRON
GAMMA RAY INCREASES →		NEUTRON INCREASES →
API 15		API 120
0 — 150		2400 — 3600 — 4800

ROKE	GAMMA RAY NEUTRON LOG CALIPER DENSILOG

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	
LSD	COMPANY: UNION OIL COMPANY OF CANADA
SEC	WELL: 79 R-5
TWP	LOCATION:
RGE	FIELD: REEF CLAIMS
W ____ M	PROVINCE: BRITISH COLUMBIA

Other Services: NONE

Permanent Datum: GROUND LEVEL Elev.: ____ K.B. ____
Log Measured from: CASING 8" Above Perm. Datum CSG ____
Well Depths Measured from: CASING G.L. ____

Run. No.	ONE		
Date	6 OCT 79		
First Reading	124.5		
Last Reading	00		
Footage Logged	124.5		
Depth Reached	124.8		
Depth Driller	410 '		
Casing Roke			
Casing Driller			
Fluid Type	WATER		
Liquid Level	44.8 M		
Min. Diam.	13 CM		
Rm @			
Operating Time	1 HR		
Truck No.	35		

Recorded By: PETERSON Witnessed By: GIDLUCK

EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.	125A	LOG TYPE	NEUTRON/NEUTRON
DIAMETER	31 MM	TOOL MODEL NO.	125A
DETECTOR MODEL NO.		DIAMETER	31 MM
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	10 CM	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	2.15 M	LENGTH	
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	127
HOIST TRUCK NO.		SPACING	.43 M
INSTRUMENT TRUCK NO.	35	TYPE	AmBe
TOOL SERIAL NO.	125004	STRENGTH	3 CURIES

LOGGING DATA

GENERAL				GAMMA RAY				NEUTRON			
RUN NO.	DEPTHS FROM	DEPTHS TO	SPEED M/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	API N. UNITS PER LOG DIV.
1	00	44	6	3	100	0L	15	3	1000	20L	120
	44	124.5	6	3	100	0L	15	3	1000	0L	60

REMARKS

GAMMA RAY	DEPTHS	NEUTRON
GAMMA RAY INCREASES → API 15		NEUTRON INCREASES → API 120
0 — 150		2400 — 3600 — 4800

7700

ROKE

OIL ENTERPRISES LTD. CALGARY, ALBERTA

GAMMA RAY NEUTRON LOG
CALIPER
DENSILOG

FILE NO.
LSD
SEC
TWP
RGE
W ____ M

COMPANY UNION OIL COMPANY OF CANADA
WELL 79 R46
LOCATION
FIELD REEF CLAIMS
PROVINCE BRITISH COLUMBIA

Other Services:
NONE

Permanent Datum GROUND LEVEL Elev.
Log Measured from CASING 4 M Above Perm. Datum
Well Depths Measured from CASING

K.B.
CSG
G.L.

Run. No.	ONE	
Date	6 OCT-79-	
First Reading	129	
Last Reading	00	
Footage Logged	129	
Depth Reached	129.3	
Depth Driller	425 r	
Casing Roke		
Casing Driller		
Fluid Type	WATER	
Liquid Level	50 M	
Min. Diam.	13 CM	
Rm @		
Operating Time	1 HR	
Truck No.	35	
Recorded By PETERSON	Witnessed By GIDDUCK	

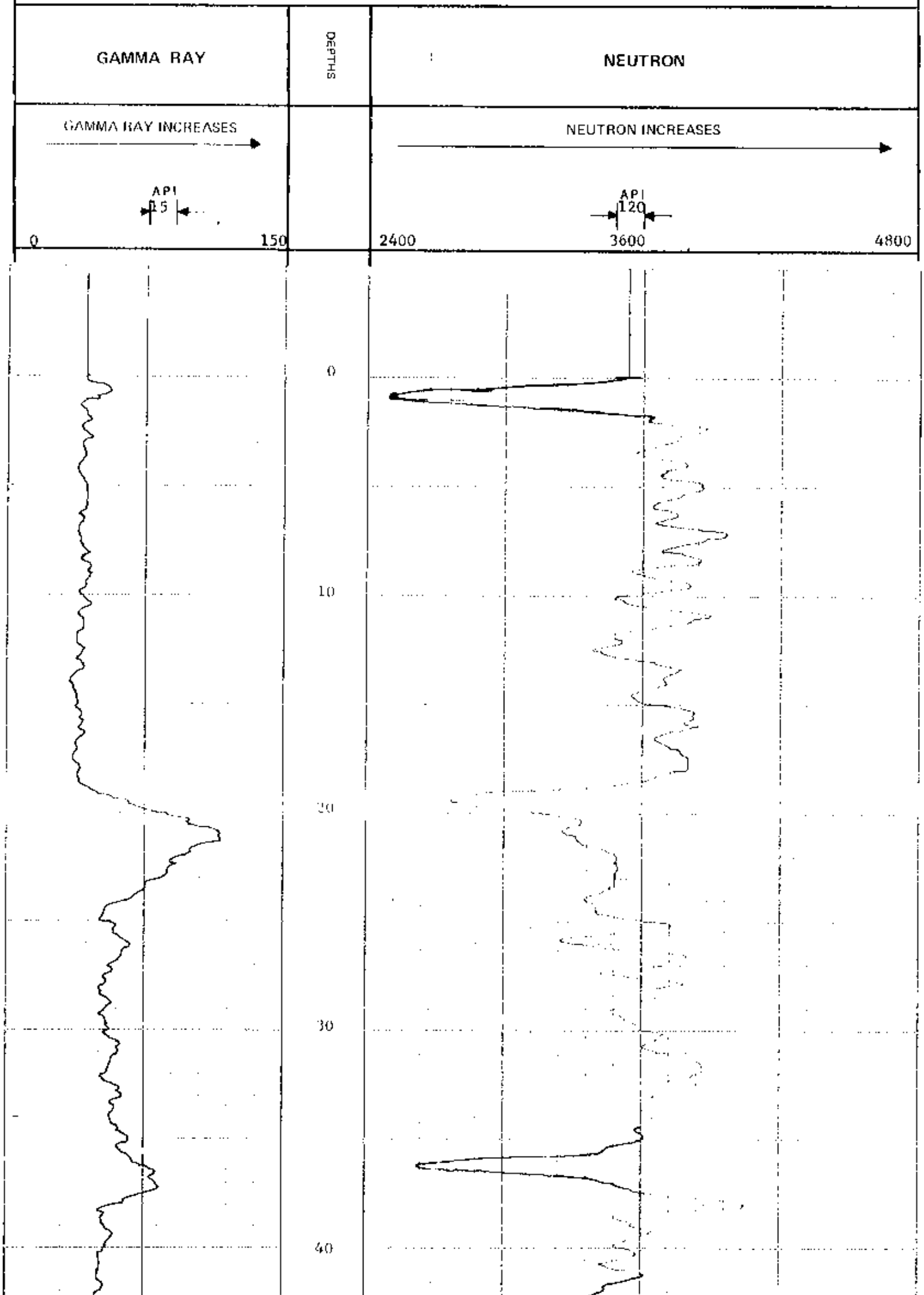
EQUIPMENT DATA

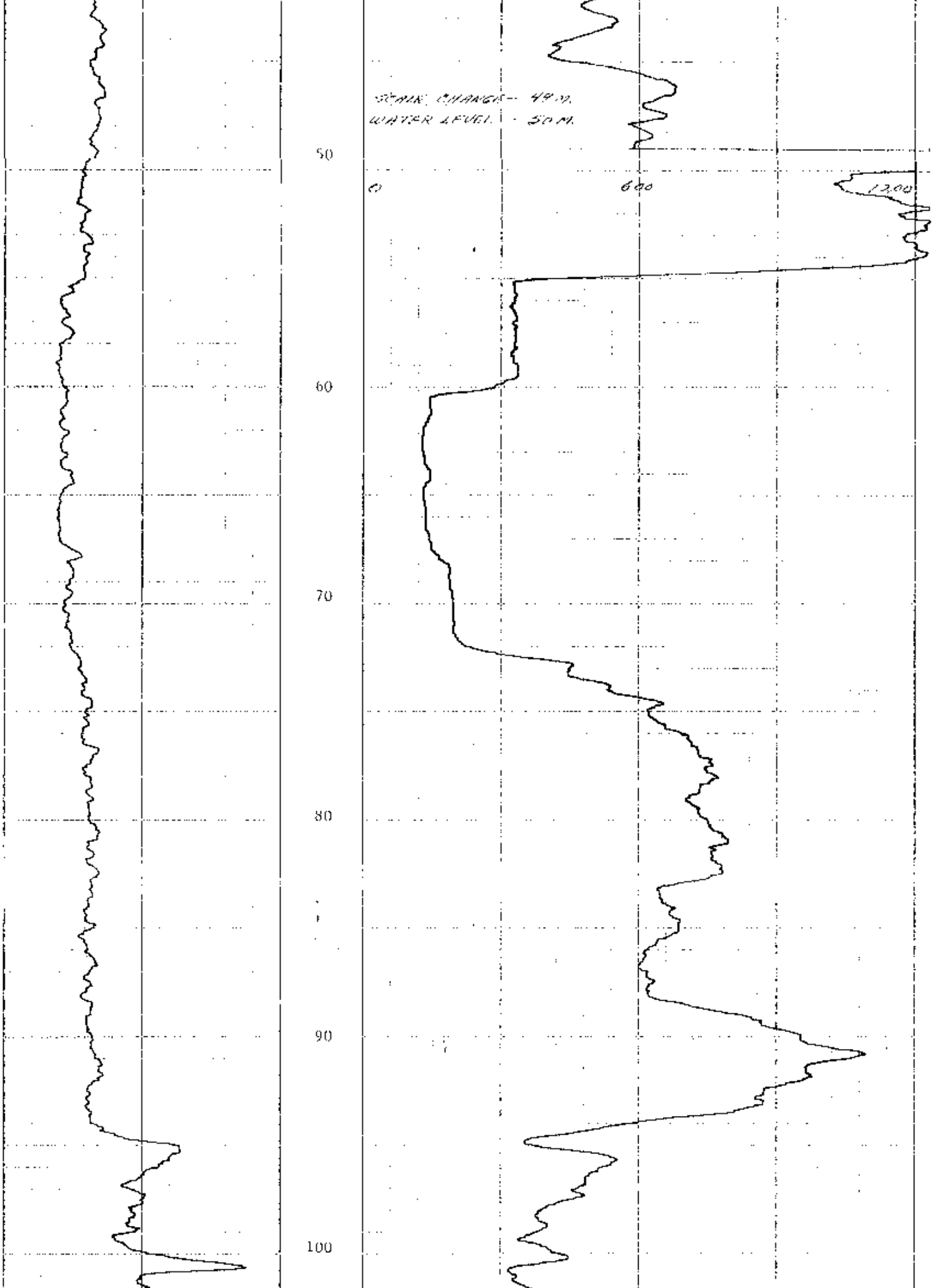
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.	125A	LOG TYPE	NEUTRON/NEUTRON
DIAMETER	31 MM	TOOL MODEL NO.	125A
DETECTOR MODEL NO.		DIAMETER	31 MM
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	10 CM	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	2.15 M	LENGTH	
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	127
HOIST TRUCK NO.		SPACING	.43 M
INSTRUMENT TRUCK NO.	35	TYPE	AmBe
TOOL SERIAL NO.	125004	STRENGTH	3 CURIES

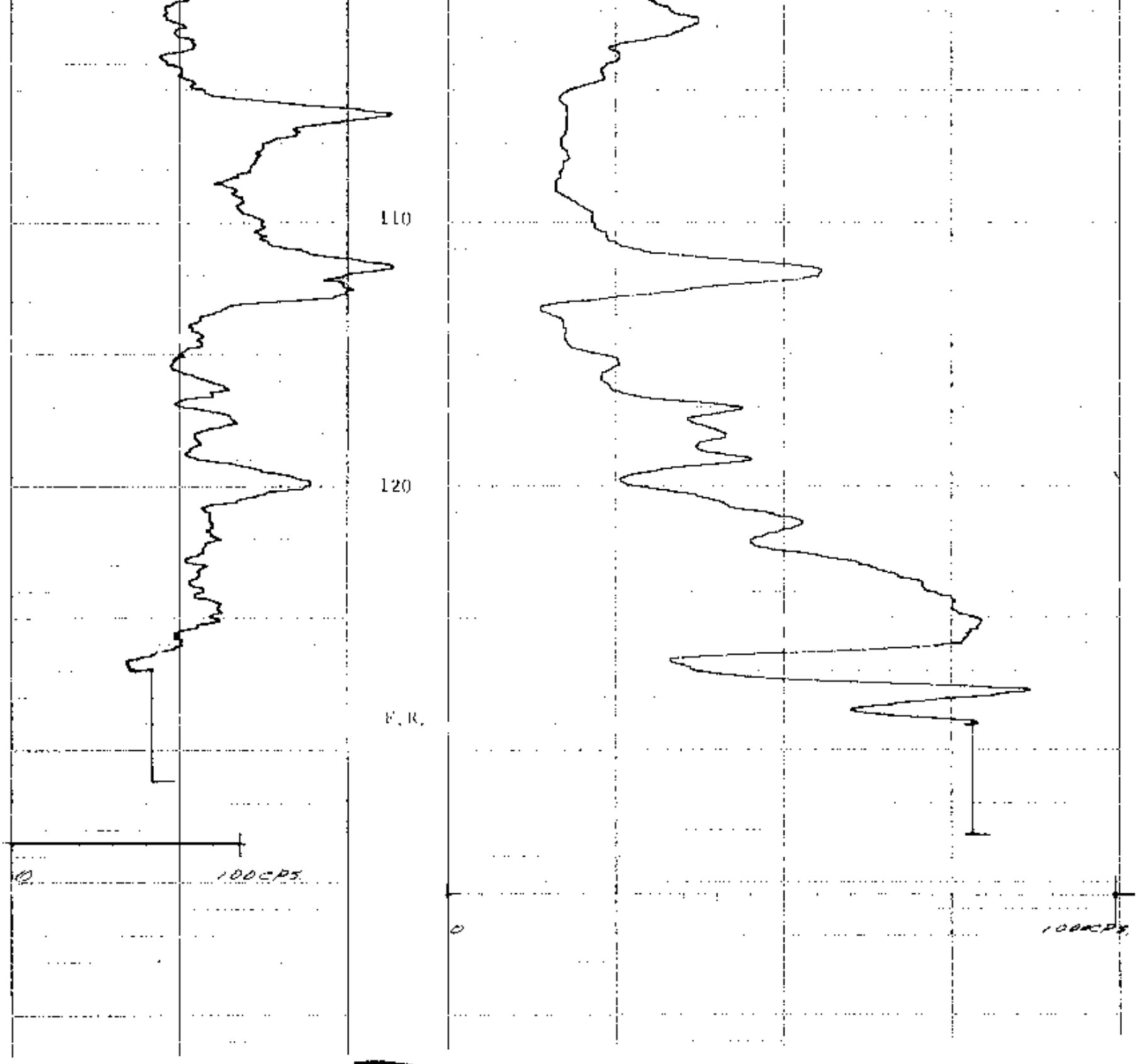
LOGGING DATA

GENERAL				GAMMA RAY				NEUTRON			
RUN NO.	DEPTHS FROM	DEPTHS TO	SPEED M/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	API N. UNITS PER LOG DIV.
1	00	49	6	3	100	0L	15	3	1000	20L	120
	49	129	6	3	100	0L	15	3	1000	0L	60

REMARKS


GAMMA RAY
DEPTHS
NEUTRON
GAMMA RAY INCREASES
NEUTRON INCREASES
API
15
API
120
0
150
2400
3600
4800
0
10
20
30
40


STATIC CHANGE -- 49 M.
WATER LEVEL - 50 M.
50
60
70
80
90
100
0
600
1200



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7100 ROKE

GAMMA RAY NEUTRON LOG
CALIPER
DENSILOG

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO

COMPANY IMPERIAL OIL COMPANY OF CANADA

LSD SEC TWP RGE W M

WELL 79 R-7

LOCATION

FIELD REEF CLAIMS

PROVINCE BRITISH COLUMBIA

Other Services: NONE

Permanent Datum	GROUND LEVEL
Log Measured from	CASING 4.3 M Above Perm. Datum
Not Depths Measured from	CASING

Run No.	ONE
Date	6 OCT 79
First Reading	95.5
Last Reading	40
Footage Logged	55.5
Depth Reached	95.8
Bottom Rate	325'
Casing Driller	
Casing Logger	
Fluid Type	WATER
Liquid Level	40.7
Max. Rec. Temp.	
Min. Diam.	13 CM
Rm. @	
Operating Time	3 HR
Truck No.	35
Recorded By	PATTERSON
Witnessed By	GLIDDEN

EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.	125A	LOG TYPE	NEUTRON/NEUTRON
DIAMETER	31 MM	TOOL MODEL NO.	125A
DETECTOR MODEL NO.		DIAMETER	31 MM
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	10 CM	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	2.15 M	LENGTH	
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	127
HOIST TRUCK NO.		SPACING	.43 M
INSTRUMENT TRUCK NO.	35	TYPE	AmBe
TOOL SERIAL NO.	125006	STRENGTH	3 CURIES

LOGGING DATA

GENERAL				GAMMA RAY				NEUTRON			
RUN NO.	DEPTHS FROM	DEPTHS TO	SPEED M/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	API N. UNITS PER LOG DIV.
1	00	40	6	3	100	OL	15	3	1000	25L	120
	40	95.5	6	3	100	OL	15	3	1000	25L	60

REMARKS LOGGED THROUGH DRILL ROD

GAMMA RAY | DEPTHS | NEUTRON

GAMMA RAY INCREASES — API 15 — 0 — 150

NEUTRON INCREASES — API 120 — 3000 — 4200 — 5400

10 20 30 40 50 60 70 80 90

SCALE CHANGE — NO API
WATER LEVEL — 40.7 M

0 — 1200

0 — 1200

7100

ROKE

OIL ENTERPRISES LTD. CALGARY, ALBERTA

GAMMA RAY NEUTRON LOG
CALIPER
DENSILOG

FILE NO.

COMPANY UNION OIL COMPANY OF CANADA

WELL 79 B-8

LOCATION

FIELD REEF CREEKS

PROVINCE BRITISH COLUMBIA

Other Services: NONE

Permanent Datum: GROUND LEVEL — Elev.
Log Measured from: GROUND LEVEL — Above Perm. Datum
Rig Graphs Measured from: GROUND LEVEL — K.B. / D.F. / G.L.

Run No.	ONE	
Date	6 OCT 79	
Elm. Reading	104	
Last Reading	0	
Footage Logged	104	
Depth Driller	104.3	
Depth Logger	104.3	
Casing Bottom	104.3	
Casing Driller		
Fluid Type	WATER	
Liquid Level	18.5 M	
Max. Diam.	13 CM	
Rm @		
Operating Time	1 HR.	
Truck No.	35	

Recorded By PETERSON

Witnessed By CLEMENTS

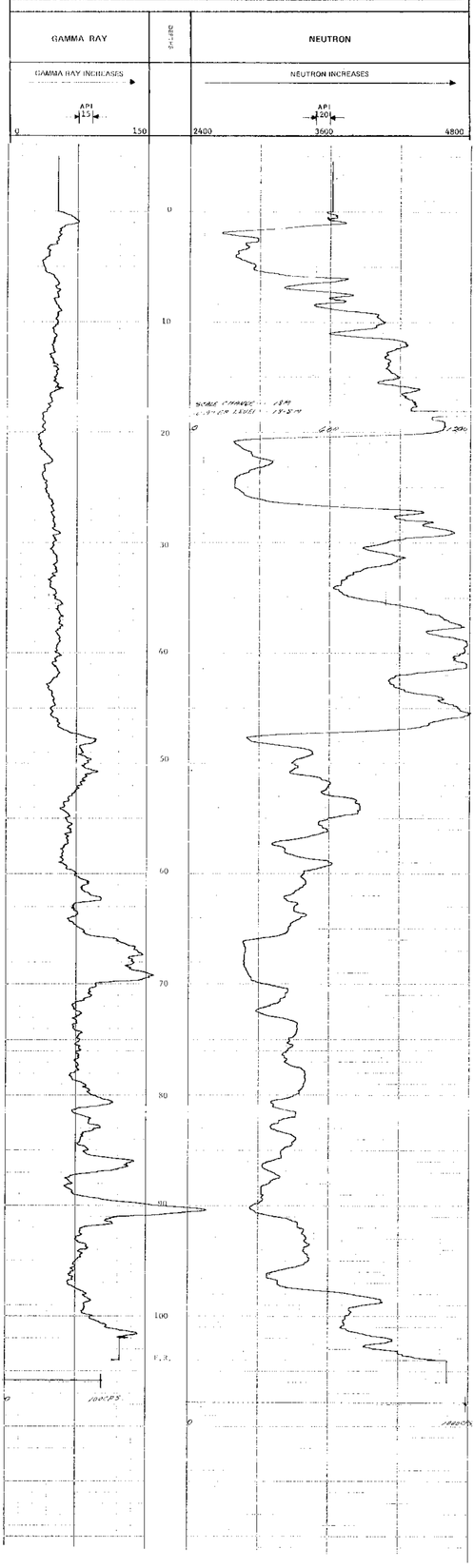
EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.	125A	LOG TYPE	NEUTRON/NEUTRON
DIAMETER	31 MM	TOOL MODEL NO.	125A
DETECTOR MODEL NO.		DIAMETER	31 MM
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	10 CM	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	2.15 M	LENGTH	
GENERAL		SOURCE MODEL NO.	MRC-N-SS-W
HOIST TRUCK NO.		SERIAL NO.	122
INSTRUMENT TRUCK NO.	35	SPACING	.43 M
TOOL SERIAL NO.	125004	TYPE	AmBe
		STRENGTH	3 CURIES

LOGGING DATA

GENERAL				GAMMA RAY				NEUTRON			
RUN NO.	LOGGING FROM	LOGGING TO	SPEED M/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	API N. UNITS PER LOG DIV.
1	00	18	6	3	100	01	15	3	1000	20L	120
	18	106	6	3	100	01	15	3	1000	01	40

REMARKS:



ROKE OIL ENTERPRISES LTD. CALGARY, ALBERTA

GAMMA RAY NEUTRON LOG
CALIPER
DENSILOG

FILE NO.	
LSD	
SEC	
TWP	
RGE	
W	M
COMPANY	UNION OIL COMPANY OF CANADA
WELL	79 R-10
LOCATION	
FIELD	REEF CLAIMS
PROVINCE	BRITISH COLUMBIA
Other Services:	NONE
Permanent Datum	GROUND LEVEL
Elev.	
Log Measured from	CASING 2 M Above Perm. Datum
Well Depths Measured from	CASING
K.B.	
CSG	
G.L.	

Run. No.	ONE
Date	7 OCT 79
First Reading	98
Last Reading	00
Footage Logged	98
Depth Reached	98.3
Depth Driller	325 '
Casing Roke	
Casing Driller	
Fluid Type	WATER
Liquid Level	56.6 M
Min. Diam.	13 CM
Rm @	
Operating Time	1 HR
Truck No.	35

Recorded By PETERSON Witnessed By GIDLUCK

EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.	125A	LOG TYPE	NEUTRON/NEUTRON
DIAMETER	31 MM	TOOL MODEL NO.	125A
DETECTOR MODEL NO.		DIAMETER	31 MM
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	10 CM	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	2.15 M	LENGTH	
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	127
HOIST TRUCK NO.		SPACING	.43 M
INSTRUMENT TRUCK NO.	35	TYPE	AmBe
TOOL SERIAL NO.	125004	STRENGTH	3 CURIES

LOGGING DATA

GENERAL				GAMMA RAY				NEUTRON			
RUN NO.	DEPTHS FROM	DEPTHS TO	SPEED M/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	API N. UNITS PER LOG DIV.
1	00	56	6	3	100	0L	15	3	1000	20L	120
	56	98	6	3	100	0L	15	3	1000	0L	60

REMARKS

GAMMA RAY	DEPTHS	NEUTRON
GAMMA RAY INCREASES →		NEUTRON INCREASES →
API 15		API 120
0 — 150		2400 — 3600 — 4800