GEOLOGICAL, GEOCHEMICAL AND GEOPHYSICAL REPORT

- on the -

REEF CLAIM GROUPS

VERNON MINING DIVISION,

BRITISH COLUMBIA

- for -

UNION OIL COMPANY OF CANADA,

335 - 8th. Avenue S. W.,

CALGARY, Alberta. T2P 2K6.

Covering: Reef 1 (20 units), Reef 2 (15 units),
Reef 3 (15 units), Reef 4 (20 units),
Reef 5 (4 units), Reef 6 (3 units),
Reef 7 (5 units), Reef 8 (2 units),
Reef 9 (1 unit), Reef 10 (15 units).

Work Performed: May 20 to October 31, 1978.

Location: (1). 50°94'N, 119°19'W.

(2). NTS Map 82L/3W.

(3). 20 km. south of Vernon, B. C.

Prepared By:

KERR, DAWSON & ASSOCIATES LTD.,

#1-219 Victoria Street,

KAMLOOPS, B. C.

J. M. Dawson, P. Eng.,
October 31, 1978.

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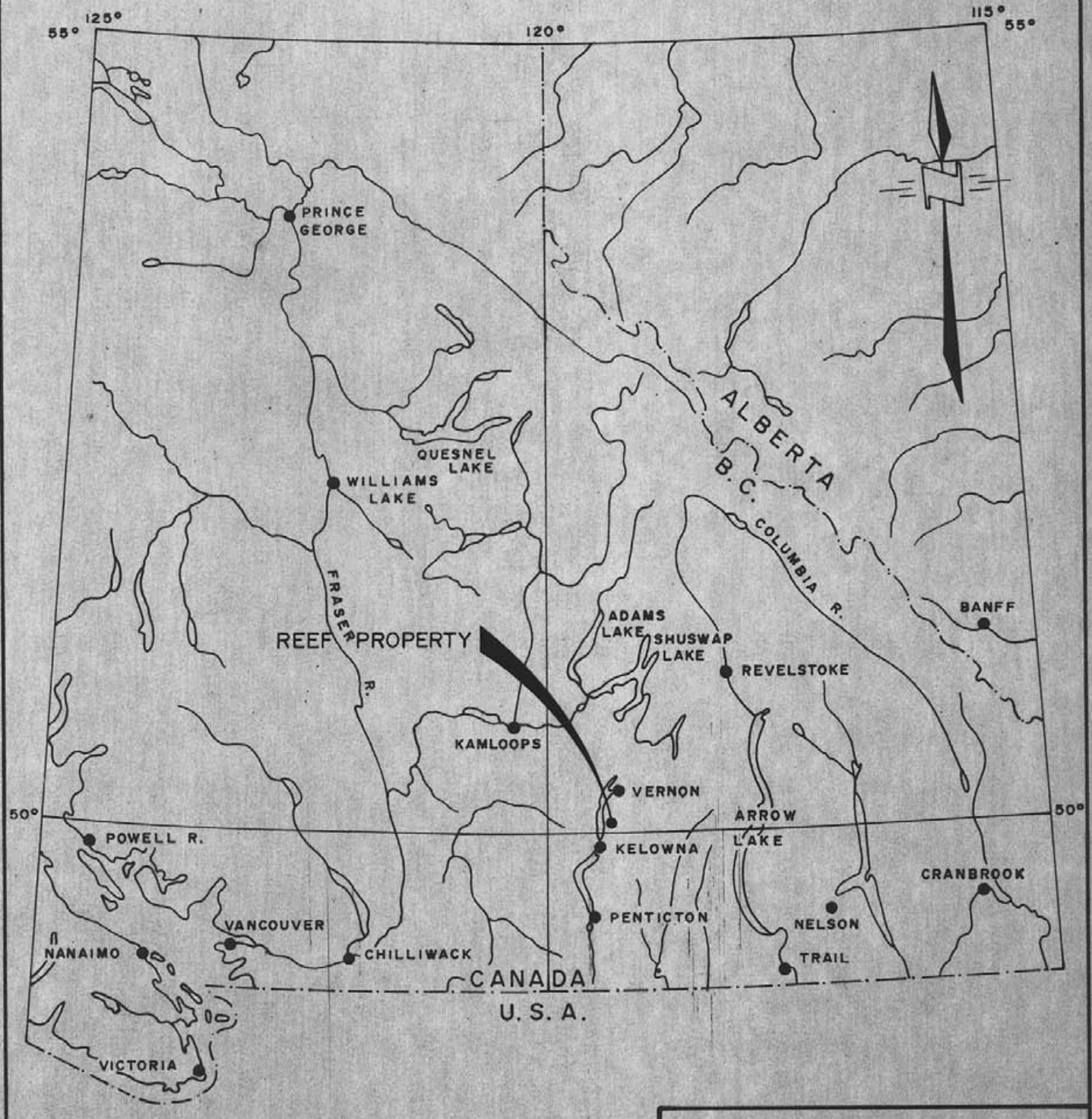
INTRODUCTION

The Reef property was staked as a reuslt of a regional exploration programme for uranium carried out on behalf of Union Oil Company of Canada in the Okanagan district of British Columbia.

The presence of a known palcochannel and the proximity to known "basal-type" uranium occurrences makes the subject property a good bet for the discovery of similar mineralization.

This report describes the results of an exploration programme which included geological mapping and prospecting, geochemical soil, water and bedrock sampling and radiometric surveys.

Results have been interpreted and are included on a series of maps accompanying this report.



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. 1740-1

INTRODUCTION

The Reef property was staked as a reuslt of a regional exploration programme for uranium carried out on behalf of Union Oil Company of Canada in the Okanagan district of British Columbia.

The presence of a known paleochannel and the proximity to known "basal-type" uranium occurrences makes the subject property a good bet for the discovery of similar mineralization.

This report describes the results of an exploration programme which included geological mapping and prospecting, geochemical soil, water and bedrock sampling and radiometric surveys.

Results have been interpreted and are included on a series of maps accompanying this report.

SUMMARY AND CONCLUSIONS

(1). The Reef property consists of 10 contiguous metric claims totalling 100 units. It is located in moderate terrain in southern British Columbia and is road accessible.

(2). Considerable prospecting and development work was done on the property in the 1930's because of the discovery of placer gold in the Miocene channel gravels.

(3). The claim block overlies a basement of older metamorphic and intrusive rocks along its western boundary. Remnants of Eocene acid volcanics occupy depressions in this basement. Overlying the basement rocks are Miocene river channel deposits and plateau basalts.

(4). The discovery of uranium mineralization in similar paleochannel deposits, (the so-called basal uranium deposits) in other parts of the Okanagan district has led to extensive exploration on and around the Reef property but to date no direct evidence of uranium mineralization has been found.

(5). Extensive geochemical sampling of waters, silts, soils and bedrock has outlined a few mildly anomalous areas and has indicated that the coarsely porphyritic quartz monzonite and the Eocene acid volcanics are potential source rocks from which uranium could have been derived.

(6). Radiometric surveys have likewise outlined a few scattered anomalous areas and the same potential source rocks.

(7). The paleochannel deposits have all the requisite features of potential host rocks for Okanagan "basal-type" uranium deposits. No definitive targets have been outlined by prospecting, geochemistry, or geophysics; however, the very soluble uranium could have been leached from all surface-exposed gravels.

PROPERTY

The property consists of 10 contiguous metric claims totalling 100 units as follows:

REEF SOUTH GROUP

Claim Name	Record Number	Tag Number	Expiry Date
Reef No. 1	202	03703	Dec. 8, 1978
Reef No. 7	241	03879	Feb. 25, 1979
Reef No. 10	406	12013	Feb. 10, 1980

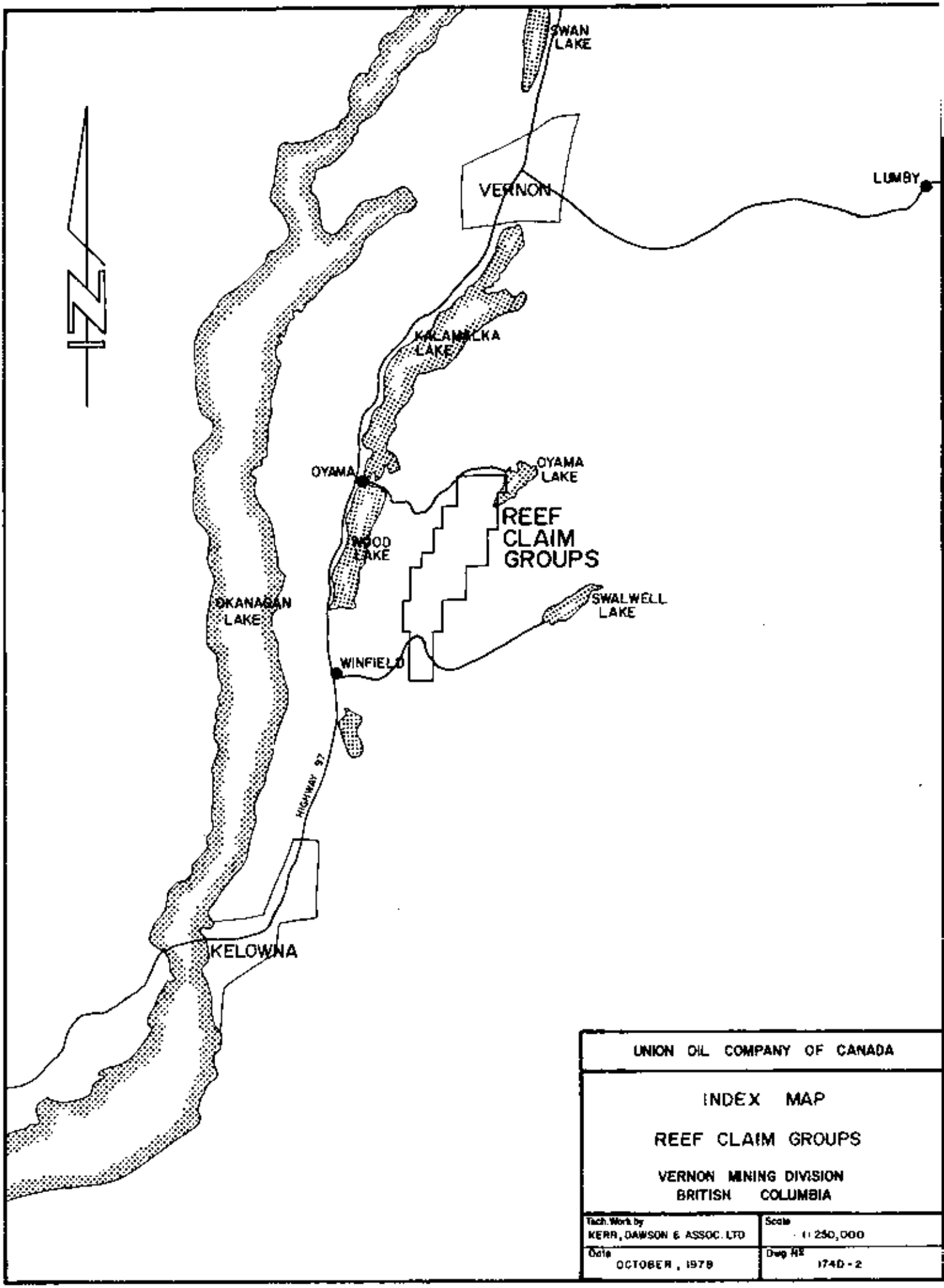
REEF CENTRAL GROUP

Reef No. 2	203	03704	Dec. 8, 1978
Reef No. 3	204	03705	Dec. 8, 1978
Reef No. 5	239	03871	Feb. 25, 1979
Reef No. 6	240	03876	Feb. 25, 1979
Reef No. 9	371	12011	Aug. 22, 1978

REEF NORTH GROUP

Reef No. 4	238	03870	Feb. 25, 1979
Reef No. 8	242	03878	Feb. 25, 1979

The registered owner of these claims is Union Oil Company of Canada.



UNION OIL COMPANY OF CANADA

INDEX MAP

REEF CLAIM GROUPS

VERNON MINING DIVISION
BRITISH COLUMBIA

Tech. Work by: KERR, DAWSON & ASSOC. LTD	Scale: 1:250,000
Date: OCTOBER, 1978	Dwg #: 1740-2

LOCATION AND ACCESS

The property is located in southern British Columbia, about 20 kilometers south of the city of Vernon. The approximate geographic center of the claims is at 50°04' north latitude and 119°10' west longitude.

The property is accessible from Vernon via highway 97 at either Oyama or Winfield (see figure 1740-2). Gravel roads lead east from both towns to the south and north ends of the property, respectively. Subsidiary logging roads lead off from both gravel roads and provide access to most areas of the claims.

PHYSIOGRAPHY AND VEGETATION

The property occupies portions of the upper eastern slopes of the valley containing Kalamalka and Wood Lakes. The claim block roughly parallels the orientation of this valley, approximately 3 kilometers east of Wood Lake. The western portion of the block occupies fairly steep slopes with intermittent 30 to 100 meter scarps especially in the north. The eastern portion is more of a rolling upland containing the valley of Clark Creek and gradually rising to the Grizzly Hills plateau.

Elevations vary from less than 2,100 feet (640 meters) a.s.l. in the lower part of Clark Creek (south-west corner of the property)to more than 5,200 feet (1,580 meters) a.s.l. near Oyama Lake (northeast corner of the property).

The southwestern corner of the property consists mostly of open grassy slopes with scattered pine trees and willow. The remainder of the property is fairly heavily forested except for areas which have been logged recently. Pine trees cover the drier areas while fairly

dense stands of cedar, spruce, and fir occupy the wetter areas along Clark Creek and below the prominent line of basalt scarps.

HISTORY

The bulk of the present Reef claims was covered by placer leases from about 1932 until at least the late 1940's. Placer gold was discovered in the paleochannel gravels near the western edge of the property in the early 1930's and intense prospecting and small scale underground development took place during 1933 - 1936.

The paleochannel was investigated by literally dozens of short tunnels between Clark Creek and the present central portion of Reef #3.

The most extensive workings occurred on the Eley and Hall leases (PML 111 and PML 112), the Stuart lease (PML 129) and the Aitkens and Staples lease (PML 162). On the Eley lease, there is a lower tunnel 350 feet long and an upper tunnel (50 feet above) 130 feet long with a 25 foot winze at the end. The Hall lease which was immediately north of the Eley lease has at least one tunnel 170 feet long in the channel at a point 10 feet above bedrock. The Stuart lease, about one mile north of the Eley and Hall leases has one tunnel at least 100 feet long (see figure 1740-3 for location). The

Aitkens and Staples lease has one ? tunnel 150 - 200 ? feet long where the base of the gravels is about 200 feet higher than at the Eley and Hall leases.

Although extensive testing was done on many of the leases,a total of only 75 ounces of gold was recovered between the years 1933 and 1940. Interest gradually waned throughout the 1940's and the leases were allowed to lapse.

With the discovery of the Tyee uranium deposit in 1975 - 1976, and the recognition of the Fuki and Donen showings being in ancient river gravels, the significance of the paleochannel at the present Reef property became apparent and the ground was acquired for Union late in 1976.

In 1977, a limited exploration programme was carried out but an early snowfall terminated it prematurely. Limited geological mapping and ground radiometric and geochemical surveys were carried out and an aeromagnetic survey was flown over the property.

CURRENT EXPLORATION PROGRAMME

The current exploration programme consisted of extensive water, silt, rock and soil geochemical surveys as well as detailed geological mapping and prospecting of the entire property.

Since the paleochannel is the potential host rock for uranium mineralization, it was intensely prospected. The paleochannel is a soft easily erodible unit, consequently a great deal of time was spent examining overburden covered areas for concentrations of the distinctive white quartz pebbles which are the largest single constituent of the channel gravels. Such concentrations indicate the nearby presence of the paleochannel in outcrop and give an idea of its width and configuration.

Reconnaissance and detailed radiometric surveys were run using three separate indstruments.

Geological, geochemical and radiometric measurements are shown on different maps for the sake of clarity.

GEOLOGY

The property is underlain by a basement of older metamorphic and intrusive rocks along its western boundary. Overlying this basement are Miocene river gravels and plateau basalts. The river channel deposits are only exposed to a limited extent at some edges of the scarp-forming basalts.

The oldest rocks on the property are those of the Monashee group. These consist of high grade granitic and augen gneisses, amphibolite, dirty green grey quartzites and meta-argillite or hornfels. These rocks form the basement in the northern half of the property, west and north of the basalt capping (see figure 174D-3).

Intruding the Monashee metamorphic rocks are granitic rocks of possibly two different ages; however, they are intimately mixed in some outcrops and no cross-cutting ralationships could be discerned. They have been grouped as phases of the same intrusive body; however, they could represent Nelson and Valhalla intrusions respectively.

Type A is a medium grained, slightly foliated and chloritized granodiorite. It occupies a relatively small area near the western boundary of the property, within and north of Reef 6 claim. Type B is a pinkish, coarsely porphyritic quartz monzonite. Potash feldspar crystals as much as 3 cm. long lie in a matrix of quartz, orthoclase and biotite. This type of granitic rock comprises the basement south of the outcrop area of type A (in and around Reef 7) although it is intimately mixed with type A in some areas to the north.

It is possible that type A represents the older mid-Jurassic Nelson intrusions while type B is equivalent to the late Cretaceous Valhalla intrusions.

Lying unconformably upon these intrusive rocks and the older Monashee gneisses are small remnants of Eocene (?) acidic volcanic rocks. This unit consists of scattered small outcrop areas of whitish to light brown, non foliated welded tuffs, rhyolites and soft, porous ash beds. Its largest continuous outcrop area is found in the window of basement exposed along Clark Creek (see figure 174D-3).

Several narrow, feldspar porphyry dikes cut both type A and B granitic rocks, although they were not observed to cut either the older gneisses or the Eocene (?) volcanics.

The Miocene channel deposits unconformably overlie all the previosuly mentioned units but because they are poorly consolidated, they are exposed in limited outcrops adjacent to the overlying basalt capping. These deposits have been reported to be as much as 200 - 300 feet (65 to 90 meters) thick; however, the maximum exposed thickness is about 12 meters. Considerable normal faulting parallel to the valley containing Wood Lake is reported from surface and underground workings and may account for the fact that separate exposures of the channel occur at different elevations (as much as 65 meters apart).

The channel deposits consist of beds of quartz-pebble conglomerate and coarse sandy lenses with minor layers of silty mudstone with contained carbonaceous trash. The conglomerate layers make up the bulk of the channel material. They average about 70 cm. thick and consist predominently of white quartz pebbles from 2 to 8 cm. across in a sandy matrix.

Although there are relatively few outcrops of the channel visible today, the extensive placer test pitting and tunnelling carried out in the 1930's has established the presence of the gravels in a number of additional places. This data as well as concentrations of white quartz pebbles in overburden has led to a tentative interpretation of the original position of the paleochannel (see figure 1740-3).

The width of the paleochannel is unknown. Tunnelling has established its width as at least 300 feet (90 meters) at one point; however, it could be several times this width. The only exposure of basement east of the channel is along the upper reaches of Clark Creek, approximately 1,500 meters east of known channel gravel outcrops. A recent diamond drill hole located approximately 600 meters ENE of this window of basement encountered Monashee gneisses at approximately 80 meters depth. This is essentially the same elevation as the window of basement along Clark Creek. Therefore, this general area is interpreted as being a basement highland some distance east of the paleochannel.

Overlying the paleochannel and basement rocks are a series of Miocene basalt flows. These rocks form prominent scarps along their western edge. The basalts are dark grey to black in colour and vary from dense, fine grained rocks to porphyritic varieties with subhedral olivine phenocrysts up to 1 cm. long.

The basalt flows cover most of the property except along the western and (?) southern margins. Thickness of this capping varies up to at least 100 meters but is probably somewhat less in most places.

GEOCHEMISTRY

Soil, silt, water and rock geochemical sampling was performed on the subject claims. Values are plotted on a 1:10,000 base map of the property. A similar 1:10,000 plan shows sample locations and numbering system. Data on individual samples is included in Appendix C of this report.

A total of 161 soil samples were collected primarily in a series of traverses across overburden-covered areas where the channel was thought to occur. Samples were collected at 30 meter intervals along these traverse lines.

Soil samples were collected from the "B" horizon where possible (approximately 15 to 45 cm. deep). Sample stations were marked with flagging and the appropriate sample number. After collection samples were stored and shipped in waterproof kraft envelopes.

Soil samples were analysed for uranium in the Vancouver laboratories of Bondar-Clegg and Company. Samples were dried and sieved and an aliquot of the -80 mesh fraction obtained. Extraction was accomplished

by hot nitric acid with analysis by fluorimetry.

The mean and standard deviation were computed and used to classify the data into the following categories:

0	-	0.65 PPM	- negative
0.65 PPM	-	1.2 PPM	- possibly anomalous
1.2 PPM	-	1.75 PPM	- probably anomalous
> 1.75 PPM			- definitely anomalous

The few definitely anomalous values are confined to the central and southern parts of the property where the paleochannel is known to occur from old placer workings and concentrations of quartz pebbles in overburden. One cluster of anomalous values on the third soil traverse north from the south end of the property seems particularly significant as it occurs on a prominent knoll which rises about 40 meters above the surrounding terrain.

On some traverses which run from known areas of basalt capping to known areas of basement, the basalt is nicely delineated by very low values, usually 0.2 PPM or less.

A total of 55 water samples were collected and sample sites were marked with flagging and the appropriate sample number. Samples were stored in 250 ml. plastic bottles and analysed by fluorimetry by Bondar-Clegg and Company in Vancouver.

Mean and standard deviation wre computed, excluding obviously anomalous samples of 3 PPB and greater and assigning an arbitrary value of 0.03 PPB to those samples analysed as containing less than 0.05 PPB uranium.

The data were then classified into the following categories:

0	-	0.33 PPB	- negative
0.33 PPB	-	0.77 PPB	- possibly anomalous
0.77 PPB	-	1.21 PPB	- probably anomalous
	> 1.21 PPB		- definitely anomalous

Five definitely anomalous values were obtained in scattered areas towards the south end of the claim block where other evidence has indicated the presence of the paleochannel beneath overburden. In particular, 2 samples reporting 10 PPB uranium were collected from the old course of Horse Creek. Resampling of these

two sites could not duplicate these values; however, heavy rain showers prior to the resampling are suspected to have diluted the creek water.

Two other definitely anomalous samples were recorded near the west edge of the property in the central and northern sections respectively. They both occur in areas of extensive overburden below the prominent basalt scarps and could be caused by local patches of high background Eocene volcanics or mineralized channel material.

A total of 32 silt samples were collected and analysed by fluorimetry for uranium. A statistical analysis of this number of samples is not considered to be meaningful; however, samples of 2 PPM uranium and higher would appear to be anomalous.

Three samples near the southern end of the property near the interpreted course of the paleochannel are anomalous. To some degree, they correspond with anomalous waters in this area. The most significant values were encountered near the northern edge of the property where two anomalous values, 5 and 2 PPM respectively were encountered in the same creek. This

latter area is below the basalt scarps; however, there is no evidence of the presence of the paleochannel near here.

Twenty-six rock geochemical samples were collected and analysed for uranium by delayed neutron activation, by fluorimetry with a strong leach and by fluorimetry with a weak leach and for thorium by X-ray fluorescence. Three of these samples were also analysed for copper, nickel and iron by atomic absorption spectrophotometry.

All rock types encountered on the property were checked for total uranium, leachible uranium and thorium in an attempt to delineate possible source rocks and explain areas of anomalous radioactivity.

Samples of basalt cap rock are uniformly low in total uranium, leachible uranium and thorium.

Basement rocks vary widely in uranium and thorium content. The Monashee gneisses appear to be low to moderate in total uranium, and low in leachible uranium and thorium. Of the two granitic rock types, the "type B" porphyritic quartz monzonite is higher in total uranium and leachible uranium. The "type A" granodiorite is

uniformly low in thorium while samples of quartz monzonite report background thorium as well as values as high as 11 PPM.

The Eocene acidic volcanics usually contain the highest values in total uranium and thorium. Leachible uranium content is somewhat variable.

Three samples of the paleochannel material were analysed. In two out of the three samples total uranium and leachible uranium content are higher than average. Thorium content is also considerably higher than average in two samples.

RADIOMETRIC SURVEYS

Considerable reconnaissance traversing was done on the subject property utilizing an Exploranium DISA-400 spectrometer and a SRAT SPP-2NF scintilometer. The writer used a McPhar TV-1 discriminating scintillometer which was turned on continuously while traversing.

The TV-1 was used to take readings in counts per minute at all outcrops. The instrument was placed probe-down on an outcrop and readings for K + U + Th, U + Th and Th recorded. These readings have been plotted on figure 1740-5. In general radiometric readings reflect rock geochemistry values. The Eocene acidic volcanics consistently have the highest readings with the "Type B" coarsely porphyritic quartz monzonite having lower values than the Eocene volcanics but usually higher than the remaining basement rocks.

The Miocene channel sediments do not give anomalously high radiometric readings except where appreciable carbonaceous trash is included within a horizon.

The SRAT scintillometer was used primarily for reconnaissance prospecting in areas of suspected channel outcrops or concentrations of quartz pebbles in till. In general where readings were recorded in counts per second, they indicate similar relative backgrounds for the various rock types. Some anomalously high readings were obtained within the area interpreted as the course of the paleochannel near the south end of the property (see figure 1740-5).

The DISA-400 spectrometer was used in prospecting the interpreted course of the paleochannel and in overburden-covered areas near the base of the basalt scarps.

In addition, a series of traverses were run in the southern portion of the claim block. Survey stations were established at 50 meter intervals along these lines. The probe was held at ground level and the four counts: total count, potassium, uranium, and thorium taken over a 30 second sampling interval. This data is plotted on figure 1740-6.

The mean and standard deviation for uranium is calculated as 35 and 11 respectively, therefore readings

in excess of 57 can be considered definitely anomalous. In general, anomalous and probably anomalous values are scattered; however, a rough correlation can be detected between higher values and location of concentration of quartz pebbles in overburden.

EXPLORATION POTENTIAL

The paleochannel exposed on the Reef property has all the requisite features of other channel gravels which host basal-type uranium deposits in the Okanagan district of British Columbia. Its ultimate dimensions are unknown; however, it is at least several kilometers long, more than 100 meters wide and at least 12 meters thick.

Extensive testing of the limited exposures gives no definitive results as to whether it may host more than background amounts of uranium. However, leaching may have removed any anomalous amounts of uranium from surface exposures. This has been shown to occur at the Tyee Lake deposit east of Kelowna.

Therefore since the bulk of the palechannel is covered by basalt cap rock, it may contain economic quantities of uranium which have been protected from erosion and dissolution.

It will be necessary to drill this portion of the channel to adequately test its potential.

Respectfully Submitted By:

KERR, DAWSON & ASSOCIATES LTD.,

J. M. Dawson, P. Eng.,
GEOLOGIST

October 31, 1978,
KAMLOOPS, B. C.

APPENDIX A

PERSONNEL

PERSONNEL

J. M. Dawson, P. Eng.	Geologist	July 26 - 31,	1978
		August 1 - 3,	1978
		August 7 - 9,	1978
		August 4,5,6,10,	1978
		- 16 days	
M. J. Gidluck, P. Eng.	Geologist	May 25,	1978
		June 7,	1978
		July 26,	1978
		- 3 days	
R. Sharp, B. Sc.	Geologist	May 24 - June 4,	1978
		June 8 - June 15,	1978
		- 20 days	
G. Wendland	Field Assistant	May 24 - June 4,	1978
		June 8 - June 15,	1978
		- 20 days	

APPENDIX B

STATEMENT OF EXPENDITURES

STATEMENT OF EXPENDITURES

(1).	Labour:			
	J. M. Dawson, P. Eng.,			
	16 days @ $175.00/day		$2,800.00	
	M. J. Gidluck,			
	3 days @ $180.00/day		540.00	
	R. Sharp,			
	20 days @ $90.00/day		1,800.00	
	G. Wendland,			
	20 days @ $52.00/day		1,040.00	$6,180.00
(2).	Expenses and Disbursements:			
	(a). Geochemical Analyses		$1,246.75	
	(b). Room and Board			
	Sharp and Wendland	$1,093.80		
	Gidluck	111.70		
	Dawson	348.71	1,554.21	
	(c). Instrument rental:			
	1 McPhar TV-1A			
	9 days @ $10.00/day	$ 90.00		
	1 Exploranium DISA-400			
	20 days @ $35.00/day	700.00		
	1 SRAT SPP-2NF			
	20 days @ $10.00/day	200.00	990.00	
	(d). Truck Rental			
	Sharp and Wendland			
	1 4 x 4 Jimmy			
	20 days @ $20.00/day	400.00		
	1,130 mi. @ 20¢/mile	226.00	626.00	
	Gidluck,			
	1 car @ $15.00/day	45.00		
	765 mi. @ 15¢/mile	114.75	159.75	$4,576.71

CARRIED FORWARD:

(1).	Labour			$ 6,180.00
(2).	Expenses and Disbursements:		$4,576.71	
	(d). Truck Rental Dawson, 1 4x4 Jimmy 9 days @ $20.00/day	$180.00		
	520 mi. @ 20¢/mile	104.00	284.00	
	(e). Base Map Preparation		73.50	
	(f). Drafting		534.50	
	(g). Field Equipment and Supplies . .		162.40	
	(h). Freight		63.25	
	(i). Telephone, blue prints, secretarial, xerox, maps, binding, etc.		232.65	5,927.01
	TOTAL HEREIN			$12,107.01

APPENDIX C

GEOCHEMICAL DATA

Water Samples:

RDW - 1 - Sample from upper Clark Creek in area of window of Eocene volcanics; value 0.05 PPB

RDW - 2 - Sample from small tributary flowing from the east into Clark Creek; drains from area underlain by basalt; value 0.05 PPB

RDW - 3 - Sample from swampy slough in area underlain by basalt; value 0.1 PPB

RDW - 4 - Sample from slough or slow moving seep in area underlain by basalt; value < 0.05 PPB

RDW - 5 - Sample from upper reaches of Clark Creek in swampy area; slow moving creek draining area underlain by basalt; value < 0.05 PPB

RDW - 6 - Sample from small spring draining from swampy, logged area; area underlain by basalt; value < 0.05 PPB

RDW - 7 - Sample from near source of Clark Creek; slow moving stream in swampy area; area underlain by basalt; value < 0.05 PPB

RDW - 8 - Sample from tiny rivlet draining from highland south of Oyama Lake; area underlain by basalt; value 0.3 PPB

RDW - 9 - Sample from small spring - much organic material present; draining from area underlain by granitic basement and ? Eocene volcanics and possibly Miocene channel material; value 1.7 PPB

RDW - 10 - Sample from small spring; draining area underlain by ? granitic basement; extensive overburden here; value 0.4 PPB

RDW - 11 - Sample from small spring; drains from area underlain by basement of Monashee gneiss; value 0.5 PPB

RDW - 12 - Sample from small seep drains area of granitic basement and miocene channel material; value 0.6 PPB

RDW - 13 - Sample from small spring in area of extensive overburden; area is below basalt capping but (?) channel swings east here and is completely covered by basalt; value 0.3 PPB

RDW - 14 - Sample from small spring in swampy overburden-covered area below basalt scarps; value 0.1 PPB

RDW - 15 - Sample from small spring draining out from under basalt cliffs; value 0.3 PPB

RDW - 16 - Sample from small spring in area of extensive overburden; located below scarps of basalt and possibly underlain by Monashee gneisses; value 0.1 PPB

RDW - 17 - Sample from small creek draining westerly in area of extensive overburden below prominent basalt scarps; value $<$ 0.05 PPB

RDW - 18 - Sample from small creek draining area underlain by ? Monashee gneiss; value 0.3 PPB

RDW - 19 - Sample from small creek draining area underlain by Monashee gneisses; value 0.2 PPB

RDW - 20 - Sample from swampy area draining from spring above drill hole EC-78-1; area underlain by basalt; value 0.3 PPB.

RDW - 21 - Sample from small seep draining area underlain by basalt; value < 0.05 PPB

RDW - 22 - Sample from spring in area underlain by basalt; value 0.1 PPB

RDW - 23 - Sample from lower Clark Creek draining extensive area mostly underlain by basalt; value < 0.05 PPB

RDW - 24 - Sample from small spring draining from area underlain by basalt; value 0.05 PPB

RDW - 25 - Sample from spring in area underlain by basalt; value < 0.05 PPB

RDW - 26 - Sample from small swampy creek in area of overburden below basalt scarps; value 0.05 PPB

RDW - 27 - Sample from same creek as previous sample, about 400 meters upstream; value 0.1 PPB

RDW - 28 - Sample from small spring in overburden covered area below basalt scraps; value 1.8 PPB

RDW - 29 - Sample from small creek sampled by RDW - 17 about 200 meters upstream; value < 0.05 PPB

RDW - 30 - Sample from small swampy creek draining from small lake in area underlain by basalt; value 0.1 PPB

RDW - 31 - Sample from small creek draining westerly from area below (?) basalt capping; value 0.05 PPB

RDW - 32 - Sample from spring in area underlain by Monashee gneisses; value 0.8 PPB

RDW - 33 - Sample from spring along Oyama Lake road; area underlain by Monashee gneiss; value 0.4 PPB

RDW - 34 - Sample from small creek draining swampy area, area underlain by basalt or Monashee gneiss; value 0.05 PPB

RDW - 35 - Sample from spring in swampy area beneath basalt scarps; value 0.1 PPB

RDW - 36 - Sample from water draining from the main adit in Miocene channel material; value 0.3 PPB

RDW - 37 - Sample from lower Clark Creek just above its junction with Horse Creek; value 0.7 PPB

RDW - 38 - Sample from lower Clark Creek 800 meters upstream from RDW - 37; value 0.2 PPB

RDW - 39 - Sample from lower Clark Creek, 1,000 meters upstream from RDW - 38; value 0.05 PPB

Silt Samples:

RDL - 1 - Sample of very fine silt at locations of RDW - 1; value 0.6 PPM

RDL - 2 - Sample of very fine silt at locations of RDW - 2 on Clark Creek; value 1 PPM

RDL - 3 - Sample of coarse silt and sand from dry creek bed rraining area underlain by basalt; value 0.2 PPM

RDL - 4 - Sample of fine silt with some organics at location of RDW - 5 on Clark Creek; value 2 PPM

RDL - 5 - Sample of very fine silt at location of RDW-7 near source of Clark Creek; value 0.4 PPM

RDL - 6 - Sample of fine silt and sand at location of RDW - 8; value 0.2 PPM

RDL - 7 - Sample of fine silt and sand at location of RDW - 12; value < 0.2 PPM

RDL - 8 - Sample of fine silt with some organic material at location of RDW - 13; value < 0.2 PPM

RDL - 9 - Sample of fine silt at location of RDW - 15; value 0.4 PPM

RDL - 10 - Sample of sand and silt at location of RDW-17; value<0.2 PPM

RDL - 11 - Sample of silt and sand from dry creek bed in overburden-covered area below cliffs of basalt; value 0.6 PPM

RDL - 12 - Sample of silt and sand from dry creek bed in overburden-covered area below scarps of basalt; value 1 PPM

RDL - 13 - Sample of silt and sand at location of RDW - 23 on Clark Creek; value 0.6 PPM

RDL - 14 - Sample of silt and fine sand from location of RDW - 24; value 0.2 PPM

RDL - 15 - Sample of silt and sand from dry creek bed in overburden-covered area below scarps of basalt; value 0.2 PPM

RDL - 16 - Sample of silt with organics from location of RDW - 26; value 0.4 PPM

RDL - 17 - Sample of silt and sand at location of RDW - 17; value < 0.2 PPM

RDL - 18 - Sample of silt from small creek at location of RDW - 29; value 0.8 PPM

RDL - 19 - Sample of silt and sand from small creek at locations of RDW - 31; value 5 PPM

RDL - 20 - Sample of silt from dry creek bed - probably the same creek as sample RDL - 19 but about 600 meters downstream; value 2 PPM.

RDL - 21 - Sample of fine silt from lower Clark Creek at location of RDW - 37; value 1 PPM

RDL - 22 - Sample of silt and sand from Clark Creek at location of RDW - 38; value 0.8 PPM

RDL - 23 - Sample of silt from Clark Creek at location of RDW - 39; value 0.6 PPM

Rock Samples:

RDT - 1 - Sample of slightly foliated granodiorite; "type A" intrusive; values U_{ONA} 1 PPM
U_F 0.6 PPM
U_{CO_3} < 0.2 PPM
Th < 1 PPM

RDT - 2 - Sample of fresh, dark grey to black, amygdaloidal basalt; values U_{ONA} 1 PPM
U_F 0.4 PPM
U_{CO_3} < 0.2 PPM
Th < 1 PPM

RDT - 3 - Sample of fine grained, slightly chloritic "type A" granodiorite; values U_{ONA} 1 PPM
U_F < 0.2 PPM
U_{CO_3} < 0.2 PPM
Th < 1 PPM

RDT - 4 - Sample of friable, altered granitic rock possibly "type B" intrusive at old adit near basement-channel interface. values U_{ONA} 2 PPM
U_F 0.4 PPM
U_{CO_3} < 0.2 PPM
Th 1 PPM

RDT - 5 - Sample of partly bleached and altered "type B" quartz monzonite. values U_{ONA} 2 PPM
U_F 1 PPM
U_{CO_3} < 0.2 PPM
Th < 1 PPM

RDT - 6 - Sample of coarsely porphyritic quartz monzonite, "type B" intrusive;

values U_{ONA} 2 PPM
U_F 0.6 PPM
U_{CO_3} < 0.2 PPM
Th 11 PPM

RDT - 7 - Sample of white, friable acid tuff or ash bed or Eocene volcanics, values U_{ONA} 7 PPM
U_F 2 PPM
U_{CO_3} < 0.2 PPM
Th 45 PPM

RDT - 8 - Sample of whitish, fine grained, semi-porphyritic rhyolite of Eocene volcanics;

values U_{ONA} 8 PPM
U_F 1 PPM
U_{CO_3} < 0.2 PPM
Th 39 PPM

RDT - 9 - Sample of kaolinized "type A" granodiorite;

values U_{ONA} 2 PPM
U_F 1 PPM
U_{CO_3} < 0.2 PPM
Th < 1 PPM

RDT - 10 - Sample of conglomerate or breccia composed of weathered basalt fragments; may be interflow material between successive basalt eruptions;

values U_{ONA} 1 PPM
U_F 0.8 PPM
U_{CO_3} < 0.2 PPM
Th < 1 PPM

RDT - 11 - Sample of mixed quartzs feldspathic gneiss and amphibolite; values

U_{ONA}	1 PPM
U_F	0.2 PPM
U_{CO_3}	< 0.2 PPM
Th	< 1 PPM

RDT - 12 - Sample of dense, fine grained, dark grey to black basalt; values

U_{ONA}	1 PPM
U_F	0.6 PPM
U_{CO_3}	< 0.2 PPM
Th	< 1 PPM

RDT - 13 - Sample of slightly limonitic, whitish altered rhyolite tuff values

U_{ONA}	3 PPM
U_F	1 PPM
U_{CO_3}	< 0.2 PPM
Th	4 PPM

RDT - 14 - Sample of porphyritic basalt with coarse olivine phenocrysts; values

U_{ONA}	2 PPM
U_F	0.8 PPM
U_{CO_3}	< 0.2 PPM
Th	< 1 PPM

RDT - 15 - Sample of diorite or dioritized greenstone; values

U_{ONA}	2 PPM
U_F	0.2 PPM
U_{CO_3}	0.2 PPM
Th	1 PPM

RDT - 16 - Sample of banded granitic gneiss and augen gneiss

values U_{ONA} 3 PPM
U_F 0.4 PPM
U_{CO_3} < 0.2 PPM
Th < 1 PPM

RDT - 17 - Sample of coarsely porphyritic quartz monzonite; "type B" intrusive;

values U_{ONA} 3 PPM
U_F 2 PPM
U_{CO_3} < 0.2 PPM
Th < 1 PPM

RDT - 18 - Sample of coarsely porphyritic quartz monzonite, "type B" intrusive;

values U_{ONA} 2 PPM
U_F 0.6 PPM
U_{CO_3} < 0.2 PPM
Th < 1 PPM

RDT - 19 - Sample of sandy and pebbley material from exposed face of Miocene channel;

values U_{ONA} 2 PPM
U_F 0.4 PPM
U_{CO_3} < 0.2 PPM
Th 1.1 PPM

RDT - 20 - Sample of sandy to pebbley channel material minor silty layers with carbonaceous trash;

values U_{ONA} 5 PPM
U_F 2 PPM
U_{CO_3} < 0.2 PPM
Th 9 PPM

RDT - 21 - Sample of light coloured Eocene acidic tuff; immediately below Miocene channel deposits;

values	U_{ONA}	3 PPM
	U_F	0.2 PPM
	U_{CO_3}	< 0.2 PPM
	Th	3 PPM

RDT - 22 - Sample of rusty, friable, weathered quartz monzonite, "type B" intrusive just below the channel gravels;

values	U_{ONA}	4 PPM
	U_F	2 PPM
	U_{CO_3}	0.2 PPM
	Th	< 1 PPM

RDT - 23 - Sample of yellowish - brown, limonite stained channel sediments - mostly sand with a few large pebbles - appears to be the base of the channel gravels;

values	U_{ONA}	5 PPM
	U_F	2 PPM
	U_{CO_3}	1 PPM
	Th	< 1 PPM

R - 1 (B) - Sample of buff to light brown weathering, altered rhyolite tuff and ignimbrite of the Eocene volcanics from window of basement on Clark Creek;

values	U_{ONA}	2 PPM
	U_F	1 PPM
	U_{CO_3}	0.6 PPM
	Th	< 1 PPM
	Cu	9 PPM
	Ni	12 PPM
	Fe	0.75%

R - 6 (B) - Sample of rubble crop of white acidic tuff and friable ash deposits of Eocene volcanic unit;

	values
U_{ONA}	2 PPM
U_F	0.6 PPM
U_{CO_3}	0.2 PPM
Th	< 1 PPM
Cu	22 PPM
Ni	31 PPM
Fe	3.65%

R - 34 (B) - Sample of dark grey, dense, fine grained basalt;

	values
U_{ONA}	1 PPM
U_F	0.6 PPM
U_{CO_3}	< 0.2 PPM
Th	< 1 PPM
Cu	25 PPM
Ni	57 PPM
Fe	5%

APPENDIX D

REFERENCES

REFERENCES

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1936, P. 46

APPENDIX E

WRITER'S CERTIFICATE

JAMES M. DAWSON, P.ENG.
GEOLOGIST

SUITE 1 - 219 VICTORIA STREET
KAMLOOPS, B.C.

PHONE (604) 374-6427

CERTIFICATE

I, JAMES M. DAWSON, OF KAMLOOPS, BRITISH COLUMBIA, DO HEREBY CERTIFY THAT:

(1). I am a geologist residing at 380 Powers Road, Kamloops, British Columbia, and employed by Kerr, Dawson and Associates Ltd., of Suite #1, 219 Victoria Street, Kamloops, B. C.

(2). I am a graduate of the Memorial University of Newfoundland - B. Sc. (1960), M. Sc. (1963), a fellow of the Geological Association of Canada and a member of the Association of Professional Engineers of British Columbia. I have practised my profession for 15 years.

(3). I am the author of this report which describes the results of an exploration programme carried out partly under my supervision and partly by myself personally on the Reef claim groups, Vernon Mining Division, British Columbia.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
J. M. DAWSON

October 31st., 1978,
KAMLOOPS, B. C.

KERR, DAWSON & ASSOCIATES LTD.,

J. M. Dawson, M. Sc., P. Eng.,
GEOLOGIST

GNEISS

GRANITE AUGEN GNEISS

GRANITIC GNEISS

GREEN-GREY IMPURE QUARTZITE

GNEISS

GNEISS AND AMPHIBOLITE

GNEISS

DIORITE

OYAMA LAKE

FRIABLE FELSIC VOLCANICS

AMPHIBOLITE

GNEISS & AMPHIBOLITE

CAVED D SHAFT

APPROXIMATE LOCATION OF AITKENS & STAPLES WORKINGS

FELSIC TUFF

FELSIC TUFF FOLIATED GRANODIORITE

EC 78-2

OUTCROPS OF FLOW BANDED RHYOLITE & FELSIC TUFF

PORPHYRITIC QUARTZ MONZONITE

RUBBLE CROP OF CHANNEL MATERIAL

FOLIATED GRANODIORITE

AREA OF ELEY & HALL LEASES

EC 78-1

PORPHYRITIC QUARTZ MONZONITE

ECHO LAKE

TO OKANAGAN LAKE

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

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
6944

To Accompany a Report by J M DAWSON P Eng.

UNION OIL COMPANY OF CANADA

GEOLOGY PLAN
REEF CLAIM GROUPS
VERNON MINING DIVISION
BRITISH COLUMBIA

FIELD WORK BY: KERR DAWSON & ASSOCIATES LTD	SCALE: 1:10,000
DRAWN BY: TOM RAVENHILL 78-119	DATE: OCTOBER, 1978
APPROVED BY: J M DAWSON P Eng	DRAWING NO: 1740 - 3

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA J.M. DAWSON

OYAMA LAKE

ECHO LAKE

CLARK CREEK

VERNON CREEK

EC 78-2

78-1

LEGEND

- ⊙ 0.6 — SOIL SAMPLE LOCATION WITH VALUE IN PARTS PER MILLION URANIUM
- △ 0.1 — WATER SAMPLE LOCATION WITH VALUE IN PARTS PER BILLION URANIUM
- □ 0.2 — SILT SAMPLE LOCATION WITH VALUE IN PARTS PER MILLION URANIUM
- ◇ — ROCK GEOCHEMICAL SAMPLE LOCATION WITH VALUES FOR ELEMENTS AS FOLLOWS:

U_{DNA}	IN PARTS PER MILLION
$U_{FLUOROMETRIC}$	IN PARTS PER MILLION
$U_{CO_3\ LEACH}$	IN PARTS PER MILLION
Th	IN PARTS PER MILLION
Cu	IN PARTS PER MILLION
Ni	IN PARTS PER MILLION
Fe	IN PERCENT

- DIRECTION OF FLOW OF CREEK OR SPRING
- BUILDING
- ROAD
- ⊙ SITE OF DIAMOND DRILL HOLE
- CLAIM BOUNDARY

MINERAL RIGHTS 6944

To Accompany a Report by J. M. DAWSON P.Eng.

UNION OIL COMPANY OF CANADA

GEOCHEMICAL DATA
REEF CLAIM GROUPS
VERNON MINING DIVISION
BRITISH COLUMBIA

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APPROVED BY: J. M. DAWSON P. Eng.	DRAWING NO: 1740-4

REEF 8

OYAMA LAKE

REEF 5

REEF 4

REEF 9

REEF 3

REEF 6

REEF 2

ECHO LAKE

REEF 7

REEF 1

REEF 10

EC 78-2

EC 78-1

LEGEND

X 2400 / 170 / 40 — LOCATION & VALUES OF RADIOMETRIC READING TAKEN WITH TV-1 SPECTROMETER: K U Th IN COUNTS PER SECOND. U Th Th

65 — LOCATION & VALUE OF RADIOMETRIC READINGS TAKEN WITH SRAT SCINTILLOMETER IN COUNTS PER SECOND.

SURVEY LINES RUN WITH DISA-400 SPECTROMETER

SITE OF DIAMOND DRILL HOLE

BUILDING

ROADS

CLAIM BOUNDARY

GEOLOGICAL BRANCH
6944

In Accompany a Report by J M DAWSON P.Eng

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA J. M. DAWSON

UNION OIL COMPANY OF CANADA

RADIOMETRIC SURVEYS
REEF CLAIM GROUPS
VERNON MINING DIVISION
BRITISH COLUMBIA

TECH WORK BY KERR DAWSON & ASSOCIATES LTD	SCALE 1:10,000
DRAWN BY F.D.M. RAVENHILL 78-119	DATE OCTOBER, 1978
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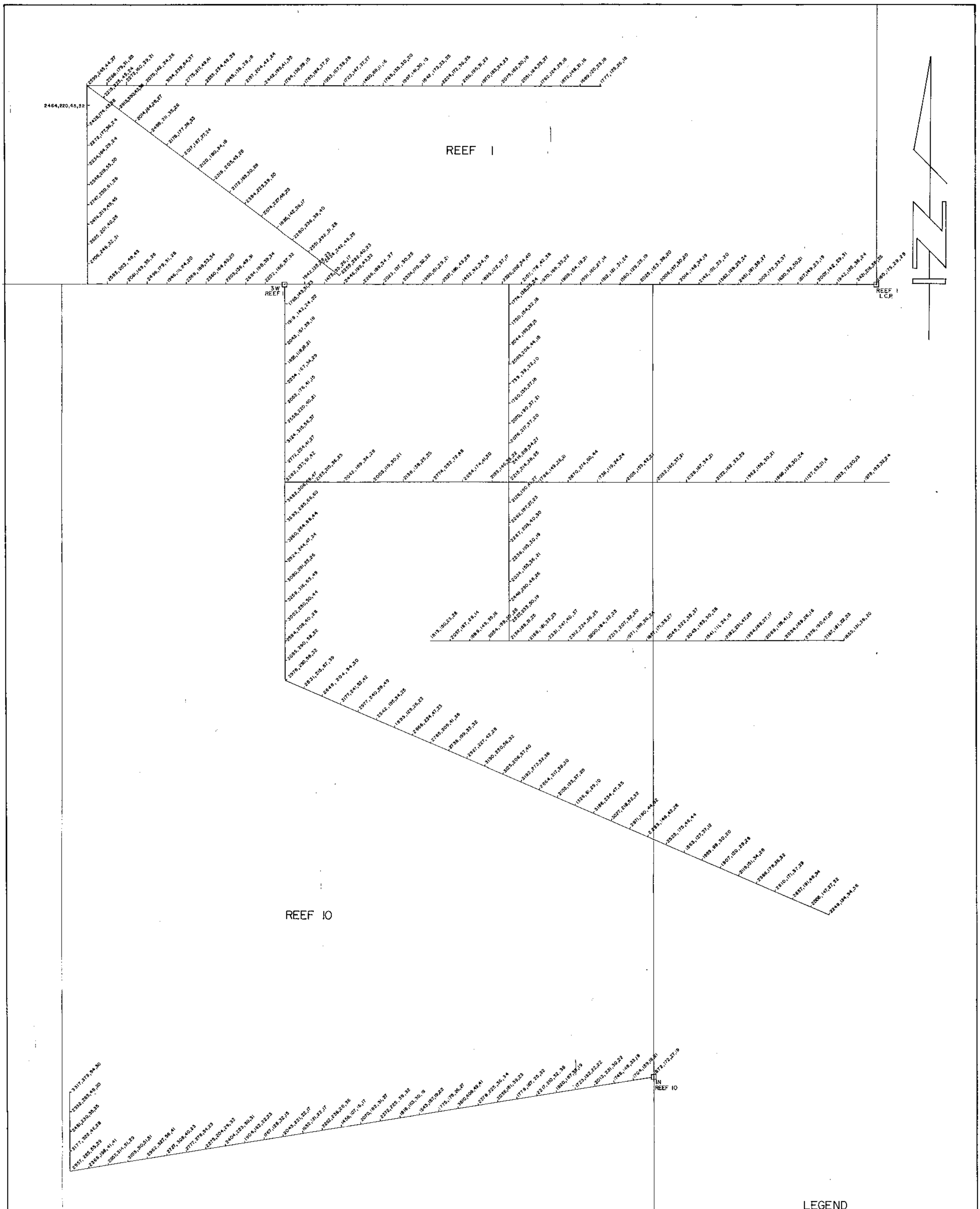

LEGEND

2727, 327, 56, 41 — LOCATION OF SURVEY STATION WITH VALUE FOR: TOTAL COUNT, POTASSIUM, URANIUM, THORIUM

IN REEF 10 — CLAIM POST

CLAIM BOUNDARY

6944

To Accompany a Report by J. M. DAWSON P.Eng.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — J. M. DAWSON

UNION OIL COMPANY OF CANADA

DISA-400 SPECTROMETER SURVEY
REEF CLAIM GROUPS
VERNON MINING DIVISION
BRITISH COLUMBIA

TECH. WORK BY: KERR DAWSON & ASSOCIATES LTD	SCALE: 1:5000
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APPROVED BY: J. M. DAWSON P. Eng.	DRAWING NO. 174D-6

OYAMA LAKE

ECHO LAKE

EC 78-2

EC 78-1

TO OWLS WELL LAKE

LEGEND

RDW 1	LOCATION OF WATER SAMPLE TAKEN BY DAWSON
RDL 1	LOCATION OF SILT SAMPLE TAKEN BY DAWSON
RDT 1	LOCATION OF ROCK GEOCHEM SAMPLE TAKEN BY DAWSON
R 1(B)	LOCATION OF BULK ROCK GEOCHEM SAMPLE TAKEN BY DAWSON
RWW 1	LOCATION OF WATER SAMPLE TAKEN BY WENDLAND
RWL 1	LOCATION OF SILT SAMPLE TAKEN BY WENDLAND
RRW 1	LOCATION OF WATER SAMPLE TAKEN BY SHARP
RRL 1	LOCATION OF SILT SAMPLE TAKEN BY SHARP
	DIRECTION OF FLOW OF CREEK OR SPRING
	BUILDING
	ROAD
	SITE OF DIAMOND DRILL HOLE
	CLAIM BOUNDARY

6944

To Accompany a Report by J.M. DAWSON P.Eng.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA J.M. DAWSON

UNION OIL COMPANY OF CANADA

SAMPLE LOCATION PLAN
REEF CLAIM GROUPS
VERNON MINING DIVISION
BRITISH COLUMBIA

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