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REPORT on the
HAYNES LAKE URANIUM PROPERTY
KELOWNA AREA, BRITISH COLUMBIA
for: Peregrine Petroleum Ltd.
by: J.J. Churchhurst, P.Eng.

6,247 · May 7, 1976

Phone 688-5485

1720 1055 West Hastings Street
Vancouver, B.C. V6E 2E9

BACON & CROWHURST LTD.

CONSULTING ENGINEERS

May 7, 1976.

Mr. C.J. McFeely, President,
Peregrine Petroleum Ltd.,
420 Three Calgary Place,
355 - 4th Avenue S.W.,
Calgary, Alta.
T2P 0J1

Dear Mr. McFeely:

I am pleased to submit herewith my report concerning your Haynes Lake uranium property which is situated about 20 air miles east of Kelowna in southern British Columbia.

In my opinion, your property deserves careful and continued exploration. Access is easy. Good paved and gravel roads pass through the centre of the claim groups; these lead from Kelowna to the west about 21 miles. Ground exploration can, therefore, be conducted inexpensively.

The property offers excellent possibilities to discover economic zones of uranium mineralization as either extensions of known flat-lying sedimentary deposits in adjacent ground or, alternatively, to discover other similar uranium deposits not now known. Radioactive discoveries so far in the area have been composed of secondary minerals (mostly autunite) and uraninite. By comparison with producing mines, it is not anticipated that any metallurgical problems will be encountered.

We believe that these uranium discoveries are the first of their kind in British Columbia.

My recommendations are that the sum of $45,500 be provided, as soon as may be arranged, to cover the cost of the first phase of exploration which it is now considered will include preliminary diamond drilling: and a further sum of $112,200 be provided for the second phase which will consist largely of further diamond drilling.

Your confidence in entrusting this study to our appraisal is appreciated.

Yours very truly,

BACON & CROWHURST LTD.

J. J. Crowhurst

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Vancouver 1, B.C.

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HAYNES LAKE URANIUM PROPERTY

KELOWNA AREA, BRITISH COLUMBIA

for

PEREGRINE PETROLEUM LTD.

by

J.J. CROWHURST, B.A.Sc., P.Eng.

Vancouver, B.C.

May 7, 1976

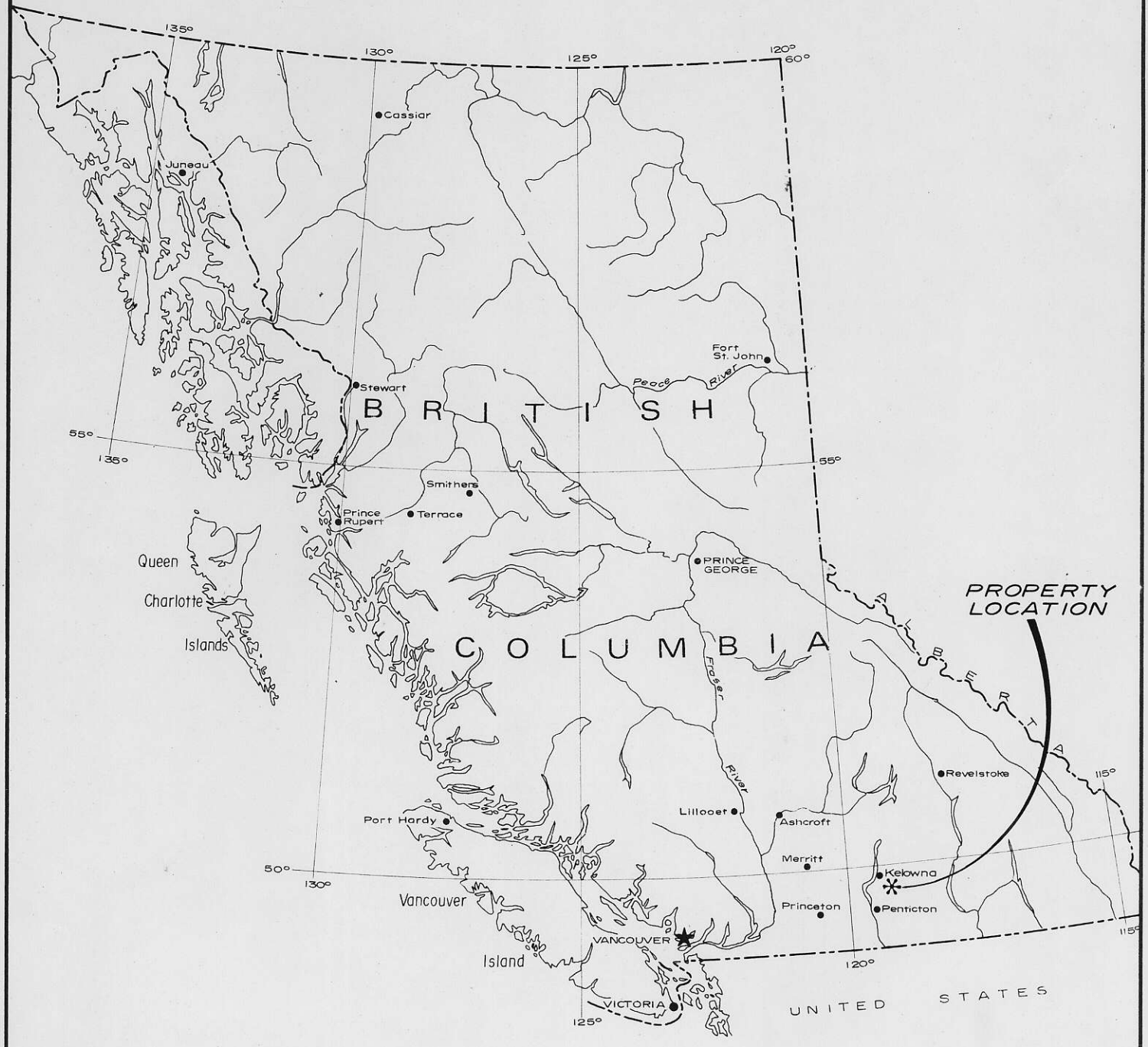


FIGURE 1

PEREGRINE PETROLEUM LTD.

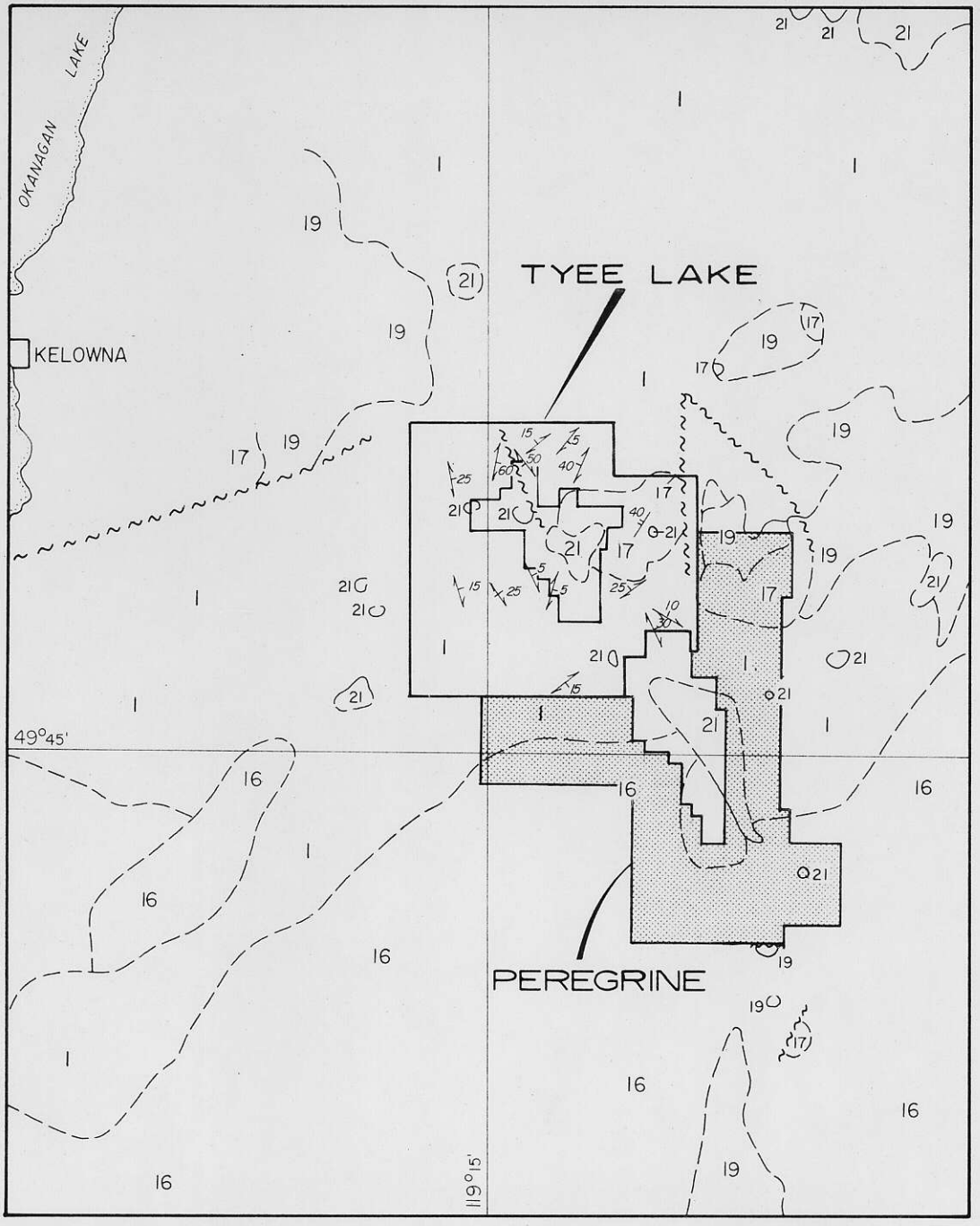
LOCATION MAP

HAYNES CREEK AREA

COOKSON, B.C.

MILES

0 50 100 200 300 400



TERTIARY MIOCENE ?

21 — Plateau basalt, minor olivine basalt

EOCENE OR OLIGOCENE

19 — Andesite, trachyte, minor basalt; locally, interbedded tuff and shale

PALEOCENE OR EOCENE

17 — Conglomerate, sandstone shale, tuff

CRETACEOUS (?)

16 — Valhalla Plutonic Rocks, granite, granodiorite

MONASHEE GROUP

1 — Layered gneiss, minor schist, amphibolite Quartzite.

Geological contact, defined, assumed

Bedding inclined

Gneissocity, inclined

FIGURE 2

PEREGRINE PETROLEUM LTD.

REGIONAL GEOLOGY

HAYNES CREEK AREA

COOKSON, B.C.

MILES

0 2 4 8 12

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CONCLUSIONS

Peregrine Petroleum Ltd. has acquired 360 mineral claims in the Haynes Lake area about 20 air miles east of Kelowna in southern British Columbia. These claims almost completely surround three parcels of claims owned by Nissho-Iwai of Canada Ltd. - the Star, the Lane and the Cindy mineral groups. Two other groups of claims - the Sun and the Moon - are owned by Nissho-Iwai; these are about $4\frac{1}{2}$ to 5 miles distant from the Peregrine Petroleum Ltd. ground but are of consequence in the conclusions reached in this report by reason of the similar geology and results obtained.

Sufficient information is given in the British Columbia Provincial Government assessment reports filed by the Power Reactor & Fuel Development Corporation - Japan (who acted as agent for Nissho-Iwai) to establish the presence of significant quantities of uranium on all of the Nissho claim groups.

This mineralization is reported by the British Columbia Department of Mines to consist largely of secondary uranium minerals (autunite) occurring in flat-lying unconsolidated conglomerate and sandstone beds which form the lower part of what has been termed the "Plateau Basalt" formation (see Figure 2 - Map Unit #21). This is summarized later in this report, but it can be noted here by way of reference that Hole No. 10 cut 3.0 metres (9.85 feet) of uranium mineralization grading 0.40% eU_3O_8 in a flat-lying pebble conglomerate bed about 125' below the surface. This is the best intersection, but enough other intersections were obtained to establish an attractive pattern.

It would appear that correlation exists between this uranium mineralization and the Valhalla plutonic intrusions (Map Unit #16) as a possible source, and that ancient stream valley positions controlled to some extent the subsequent deposition in the sediments.

Oxidation and weathering of uranium-bearing veins or pegmatites or low-grade disseminated uraninite in basement rocks (for example, the Carmi molybdenum prospect) is quoted by the Department of Mines as a possible source for this secondary mineralization.

The available regional geological mapping by the Geological Survey of Canada is, of necessity, general in nature. For example, several buried tongues and masses of Valhalla plutonic rocks are noted in the Nissho-Iwai diamond drilling logs, a considerable distance to the north of the contact area shown on the G.S.C. maps. Many hitherto undetected small plugs and extensions of the main stock no doubt exist on the Peregrine Petroleum Ltd. holdings. It is also not known whether the Valhalla intrusive contact dips under the Peregrine Petroleum Ltd. property area.

Similarly, other sections of the "Plateau" conglomerate and sandstone beds could perhaps be found by detailed geological mapping, as could the ancient stream pattern be studied and explored. The possibility of uranium deposition in sedimentary beds situated in embayments in the granitic rocks can be considered.

Access is very favourable; an all-weather road leads through the centre of the property. Elevations are less than 4500 feet above sea level.

The present price of uranium (latest sales are reported to be in the $35 to $40 per lb. of U_3O_8 range) and the ever increasing excess of demand over current supply intensifies the attractiveness today of exploration for this material.

The use of modern geochemical and geophysical methods (such as "Track Etch") can be cheaply and effectively applied as a follow-up to geological mapping and interpretation.

The Peregrine Petroleum Ltd. mineral claim properties in this area east of Kelowna in southern British Columbia, therefore, present, in our opinion, an attractive exploration target directed at the discovery of economic uranium mineralization.

RECOMMENDATIONS

PHASE 1

It is recommended that the sum of $45,500 be provided, as soon as may be arranged, to cover the costs of preliminary exploration as detailed below:

Study of existing information and appraisal	$1,000
Geological mapping - one geologist and one helper - salary and wages	6,000
Supplies and support field costs	2,500
Linecutting - 30 miles @ $150 per line mile	4,500
Track Etch survey - 750 cup program - base price $12,000 plus extra handling and contour mapping for second and third areas	12,900
Preliminary diamond drilling - suggested first target area to be east of Hole #10 drilled by the Power Reactor & Nuclear Fuel Development Corporation on the Lane group (see Figure 3) - or in other selected locations - 4 holes x 200' x $15/foot - NQ size is recommended to obtain good core recovery.	12,000
Maps, assays and engineering supplies	1,500
Evaluation of results and recommendations	1,000
	$41,400
Plus contingencies @ 10%	4,100
	$45,500

PHASE 2

Based on the results of Phase 1, Phase 2 will consist largely of further diamond drilling, directed at selected target areas. It is, therefore, recommended that provision be made at the appropriate time for the sum of $112,200 as detailed below:

Diamond drilling - 20 holes x 300'/hole average x $15/foot - NQ size	$90,000
Assaying	1,000
Supporting field engineering - 1 geologist and 1 helper	6,000
Travel expenses and miscellaneous field costs	2,500
Evaluation of results	2,500
	$102,000
Contingencies @ 5%	10,200
	$112,200

Respectfully submitted,

BACON & CROWHURST LTD.

J. J. Crowhurst

J.J. Crowhurst, B.A.Sc., P.Eng.

LOCATION, ACCESS AND TOPOGRAPHY

The Peregrine Petroleum Ltd. property is located at approximately 49°45'N, 119°08'W, about 20 air miles southeast of Kelowna, B.C. (see Figure 1). Kallis Creek passes through and joins the West Kettle River in the southerly part of the property.

Highway #33, which leads east out of Rutland and Kelowna, passes through the property, then proceeds southerly 28 to 30 miles down the West Kettle River valley to Beaverdell and on to Rock Creek, B.C. This highway is partially paved and otherwise is a good gravel road. Travel time from Kelowna is approximately 45 minutes.

The C.P.R.-owned Kettle Valley Railroad passes through the property from north to south.

Elevations range from 3900' to 5200' above sea level. The weather is moderate; from two to four feet of settled snow can be expected during winter. Field work can usually commence in mid to late May.

Overburden is extensive but is usually less than 10'-12' thick. Outcrops are plentiful so that reasonably accurate surface geological mapping can be completed. Some swampy areas exist, but these are not numerous.

TO LUMBY

MISSION CREEK

TO KELOWNA

TO KELOWNA

TYEE LAKE

Grouse Ck

Highway No. 33

N

OPERATOR-POWER REACTOR & NUCLEAR FUEL DEV. CORP., JAPAN

ECOLOGICAL RESERVE No 51

OWNER-NISSHO-IWAI CANADA LTD.

TYEE LAKE

HYDRAULIC CREEK

VERNON MINING DISTRICT

LONG MEADOW LAKE

CANADIAN PACIFIC RAILWAY

Mc CULLOCH

TYEE LAKE

DISTRICT

DISTRICT

MINING

MINING

GREENWOOD

OSOYOOS

OWNER - NISSHO-IWAI CANADA LTD.
OPERATOR - POWER REACTOR & NUCLEAR FUEL DEV. CORP., JAPAN.

River

DAM

HYDRAULIC LAKE

OWNER-NISSHO-IWAI CANADA LTD.

OPERATOR-POWER REACTOR & NUCLEAR FUEL DEVELOPMENT CORPORATION, JAPAN

CLARK CREEK

Kettle

West

HAYNES LAKE

PEREGRINE PETROLEUM

KALLIS CREEK

PEREGRINE

LEGEND

22 ● DRILL HOLE

FIGURE 3

PEREGRINE PETROLEUM LTD.

PROPERTY LOCATION MAP

HAYNES CREEK AREA

COOKSON, B.C.

FEET 6000 3000 0 6000 12000 18000 FEET

MAY - 1976

To accompany report by Bacon & Crowhurst Ltd. Dated
MAY 7, 1976

Note : Claim lines based on reliable information.

PROPERTY

Peregrine Petroleum Ltd. has recently acquired 360 mineral claims almost surrounding the property owned by Nissho-Iwai Canada Ltd. in the Haynes Lake area, east of Kelowna, British Columbia. These claims are in the Greenwood Mining Division and are summarized in the following table (see Figure 3):

Claim Name		No. of Units
Goat	#1	20
	2	20
	3	20
	4	16
	5	16
	6	16
	7	15
	8	15
Freedom	1	16
	2	12
	3	16
Tab	1	15
	2	20
Haynes	1	16
	2	20
	3	16
	4	20
	5	8
	6	20
	7	3
Cookson	1	8
	2	16
	3	16
Total		360

HISTORY

(a) GENERAL

A study of several assessment reports obtained recently from the Department of Mines and Petroleum Resources, Victoria, B.C., for the years 1972-73 and 1974 discloses that two main groups of claims (see Figure 3) had been staked in 1972 in the Hydraulic Lake area about 20 miles east of Kelowna, B.C. (owner - Nissho-Iwai Canada Ltd.)

During 1973-1974 geological mapping and diamond drilling consisting of 28 vertical holes totalling 5295 feet, was carried out by Power Reactor and Nuclear Fuel Development Corporation of Japan (hereinafter called 'Power Corporation - Japan'). This work continued in 1975.

Interesting radioactivity was discovered in flat-lying conglomerate and sandstone beds underneath Tertiary basalts. It is reported autunite (calcium uranium phosphate) was responsible.

It has also been reported that more extensive diamond drilling was completed in 1975 by the Power Corporation - Japan. It is believed encouraging results were encountered.

The 1973-1974 diamond drilling is summarized in the following table. The holes were logged and probed using a TCS-603R G.P. 27 (background 35 cpm) geigercounter made by Nippon Musen, Japan. Core size was BQ.

Period	Mineral Claim Group	No. of Claims	No. of Holes	Total Feet Drilled	Assessment Report Number
25 July - 21 Aug. 1973	Lane	30	4 (#7-10 incl.)	961	4629
	Cindy	30	4 (#11-14 incl.)	1001	4629
20 June - 21 June 1974	Lane	30	2 (#15 & 16)	269	5115
7 June - 30 June 1974	Star	39	5 (#6 & 17-20 incl.)	823	5115
1 July - 10 Aug. 1974	Sun	40	8	1538	5090
	Moon	28	5	703	5090
Total			28	5295	

The background count for the geigercounter used to probe the core was recorded as being from 35 to 55 counts per minute.

Details are summarized as follows:

(b) MINERAL CLAIM GROUPS LANE AND CINDY (10 holes - #7-16 incl.)

Quoting from Power Corporation - Japan - September 1973 report "Though there has been no radiometric anomaly clarified at the ground surface in the area, some radiometric anomalies were found, especially in No. 10 hole (13,000 cpm) (0.4% eU_3O_8) was noteworthy."

The drill hole log for Hole No. 10 shows abnormal radioactivity from 34 metres (111 feet) to 37 metres (121 feet) or over a thickness of 3 metres (9.8 feet).

The intersection was in a flat pebble conglomerate bed lying underneath the Tertiary Kallis Creek basalt (Map Unit No. 21 -see Figure 2) and top of a 3.7 m thick (12.1 feet) tongue of the Valhalla intrusive rocks (Map Unit #16 - Cretaceous?)

The same conglomerate bed was intersected in seven of the other holes, namely #7, 8, 11, 13, 14, 15 and 16, in thicknesses varying from 0.2 m (0.66 feet) in Hole #7 to 35.8 metres (117.5 feet) in Hole #14. Little or no radioactivity was found in the conglomerate in Holes #14 and 16, but in the remaining holes radioactivity varies from 50 cpm in Hole #8 to 250 cpm in Hole #15.

In five holes, Nos. 7, 8, 13, 14 and 16, a sandstone layer varying from 2.5 metres in Hole #16 to 17.7 metres in Hole #13 (8.2 ft. to 58.1 ft.) lies immediately above or within the conglomerate bed, while in Holes #9 and #12 no conglomerate was encountered but thin layers of sandstone were intersected. The sandstone is logged as "coaly" in Holes 7, 8 and 12. In Holes 7, 12 and 16, the sandstone showed 520 cpm, 615 cpm and 400 cpm respectively.

(c) MINERAL CLAIM GROUP STAR (5 holes - #6 & #16-20 incl.)

Quoting from Power Corporation - Japan - August 1974:

"There has been radiometric anomalous zones clarified on the Star group. Though the radioactivity was not so high, its distribution varied widely."

Little or no radioactivity is shown in the logs for Holes #6, 18 and 20, although a comment is made in the report that "Chemical assay is not done yet, but it is estimated at 0.01% eU_3O_8 (Drill Hole BCP-20)."

Holes #19 and 20 intersected Monashee gneisses intruded by tongues of Valhalla granite and the radioactivity appears to be in pegmatitic phases of the granite. No significant radioactivity is shown in the conglomerate overlying the granite in Hole 19; Hole 20 was in granite and gneiss throughout its length.

Conglomerate and sandstone layers were intersected in all of the holes except #20. Radioactivity is reported from 150 cpm up to 300 cpm in sandstone in Hole #17 but no abnormal radioactivity is shown in the conglomerate intersections.

(d) MINERAL CLAIM GROUPS SUN AND MOON (13 holes - #21-33 incl.)

Quoting from Power Corporation - Japan - August 1974:

"Though there has been no radiometric anomaly clarified on the ground surface in the area, some radiometric anomalies were found in drill holes, especially in Hole BCP-31, which counts 1980 cpm (0.07% eU_3O_8) at the highest.

These anomalies occur at the bottom of the Plateau Basalt Formation on the base of the Valhalla plutonic rocks. No anomaly was found on the base of the Kettle River formation."

The same general sequence of flat-lying volcanics and sediments over the Monashee basement gneisses was found, with the exception that in the northerly

part of the claim group, the Kettle River formation occurs underneath the conglomerate and sandstone layers, on top of the Valhalla intrusives or on top of the Monashee gneisses.

Extremely interesting radioactive zones were found in the lower sections of the conglomerate-sandstone formation (total thickness from 6.4 m or 21 feet to 73.2 m or 240 feet) under the basalt in Holes 21, 22, 30, 31 and 32. All of these holes are in the southern part of the claim group. These zones can be summarized as follows:

Hole No.	Rock Type	Intersection (metres)	Thickness Metres	Thickness Feet	CPM
21	Conglomerate	3.5-6.0	2.5	8.2	200
22	Conglomerate & sandstone (some 'coaly')	30.0-31.5	1.5	4.9	650
30	Conglomerate	38.0-39.0	1.0	3.3	500
31	Coarse sandstone	52.0-53.5	1.5	4.9	Up to 1100
	'Coaly' sandstone	61.5-62.8	1.3	4.3	Up to 1980
	Coarse sandstone & boulder conglomerate	69.8-74.4	4.6	15.1	Up to 1350 (average 800)
32	'Coaly' sandstone (medium) and conglomerate	53.0-62.0	9.0	29.5	Up to 600 (average 400)
	Conglomerate	67.0-70.0	3.0	9.8	Up to 900 (average 690)
	Boulder conglomerate & 'coaly' sandstone - fine	72.0-76.0	4.0	13.1	Up to 1200 (average 750)

It is noted, however, that in Holes #23 and 33, which are situated close to the holes quoted above, no significant radioactivity was discovered in the conglomerate-sandstone formations.

(e) PEREGRINE PETROLEUM LTD. CLAIM GROUP

Peregrine Petroleum Ltd. has now acquired attractive ground almost surrounding the 'Lane', 'Cindy' and 'Star' groups on which substantial work, including diamond drilling as noted above, has been carried out by the Power Corporation - Japan. Good results were obtained by the latter company.

GEOLOGY

GENERAL (see Figure 2)

About half of the area under consideration is no doubt underlain by the Monashee Group (Map Unit #1) which is considered to be PreCambrian in age (H.W. Little). This group consists locally of layered gneiss (paragneiss) and biotite gneiss. Some minor schist is reported.

This Monashee group has been intruded by Cretaceous (?) Valhalla plutonic rocks (Map Unit #16) consisting mainly of biotite granite. Pegmatitic phases and aplite are noted at the contact areas. These Valhalla rocks underlie the remaining parts of the Peregrine Petroleum Ltd. ground.

It is noteworthy that radioactivity (up to twice background) has been detected in the pegmatitic zones; this was noted by the Power Corporation - Japan in the logs for Holes #19 and 20 drilled on the Star group immediately to the north-west of Hydraulic Lake.

This suggests that the Valhalla plutonics could have a greater than average uranium content.

In the northerly part of the 'Sun' and 'Moon' groups, rocks belonging to the Kettle River formation have been logged by the Power Corporation - Japan

as resting unconformably on top of the Monashee Group. The Kettle River rocks consist of acidic tuff, tuffaceous sandstone and conglomerate. It is assumed this corresponds to Map Unit #17 (Paleocene or Eocene). This formation was not encountered by the diamond drilling south of the north end of Hydraulic Lake, nor have outcrops been mapped as such for about 10 miles southerly.

No significant radioactivity was found in the Kettle River formation by the Power Corporation - Japan diamond drilling.

Overlying all of these rocks mentioned is the Plateau Basalt formation (Map Unit #21).

This can be divided into two parts. The lower section consists of 'coaly' sandstone, sandstone and conglomerate. The upper part is olivine-basalt lava in which numerous gas cavities exist ("Kallis Creek" basalt).

The average thickness of both sections is quoted as being about 160 feet; it is not believed the lower part outcrops in the area, except in isolated locations, but it no doubt exists as an extensive buried layer.

A second type of intrusive, Oligocene in age, designated as Coryell granite, is shown on the Power Corporation - Japan surface mapping. Outcrop areas are small, however, in comparison to the Valhalla stock shown, and appear almost to be dykes.

Mention is made of Cache Creek group rocks as being closely associated with the Monashee group. It is believed this is also local in nature.

MINERALIZATION

The Victoria, B.C., Department of Mines, in their publications, mention that a possible source for the radioactive minerals (largely autunite) would be the oxidation and weathering of uranium-bearing veins or pegmatites or low-grade disseminated uraninite in basement rocks.

The most significant uranium mineralization to date has been found in the coarse and/or 'coaly' sandstones. Second in importance are the boulder conglomerate occurrences. These two groups of sediments form the lower section of Map Unit #21 and probably grade in and out of each other. They are always adjacent but reverse upper and lower position in the drill holes and occur between each other.

The presence of radioactive minerals also appears to be directly related to the Valhalla intrusives. It can be postulated that these intrusives formed the source and the uranium minerals migrated into the favourable sediments, then were redeposited, aided by the presence of carbon as in the 'coaly' sandstones.

This can be compared with the origin of the Dawn Uranium Mine deposits on the Spokane Indian Reservation northeast of Spokane. Here the Loon Lake porphyritic quartz monzonite stock (Cretaceous in age?) has been shown to possess an unusually high uranium content.

The uraninite orebodies, grading approximately 0.18% U_3O_8, occurred as masses and layers in the adjacent regionally metamorphosed PreCambrian sheared

and rusty argillites where embayments in the Loon Lake granite existed. Weathering and oxidation converted the upper parts of the mineralization to autunite, a calcium uranium phosphate.

The control that the old stream channels in the Monashee formation may have on the concentration of uranium mineralization is mentioned in the Power Corporation - Japan reports. It is interesting to note that their best uranium mineralization occurred along lines parallel to the present Hydraulic Creek valley, as may also the many streams (and tributaries, some of which enter the Hydraulic River) on the Peregrine Petroleum Ltd. property.

CERTIFICATE

I, John James Crowhurst, DO HEREBY CERTIFY THAT

1. I am a practising mining engineer with Bacon & Crowhurst Ltd., 1720 - 1055 West Hastings Street, Vancouver, B.C.

2. I am a graduate of the University of British Columbia and have been granted the degree of Bachelor of Applied Science.

3. I have been practising my profession as a mining engineer for 35 years.

4. I am a member of the Association of Professional Engineers of British Columbia, Registration No. 2120.

5. I was the General Manager of the Newmont Mining Corporation Dawn Uranium property, situated on the Spokane Indian Reserve, Ford, Washington, during 1958 and 1959.

6. I nor any member of my firm have directly or indirectly received or expect to receive any interest direct or indirect in the property or securities of Peregrine Petroleum Ltd.

J.J. Crowhurst, B.A.Sc. P.Eng.

Vancouver, Canada,
May 7, 1976