

# MAR 19690043: NORTHEASTERN ALBERTA

Received date: Dec 31, 1969

Public release date: Jan 01, 1971

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**ECONOMIC MINERALS**

FILE REPORT No.

U-AF-084(1)

U-AF-085(1)

U-AF-086(1)

U-AF-087(1)

REPORT ON QUARTZ MINERAL PERMITS 128, 129,

130 & 131, IN THE PROVINCE OF ALBERTA

for

DOLPHIN EXPLORATIONS LTD.

1155 W. Pender Street,  
Vancouver, B.C.

by

Anthony Rich

and


John A. Greig

Department of Geology,  
University of Alberta,

Edmonton, Alberta.

May 9, 1969

This is Exhibit "B" referred to in the affidavit of M. BARRY NEEDHAM  
sworn to before me at VANCOUVER in the Province of British Columbia  
this 18th day of December, 1969

  
\_\_\_\_\_  
(H. RIDGWAY) A Notary Public in and for the  
Province of British Columbia

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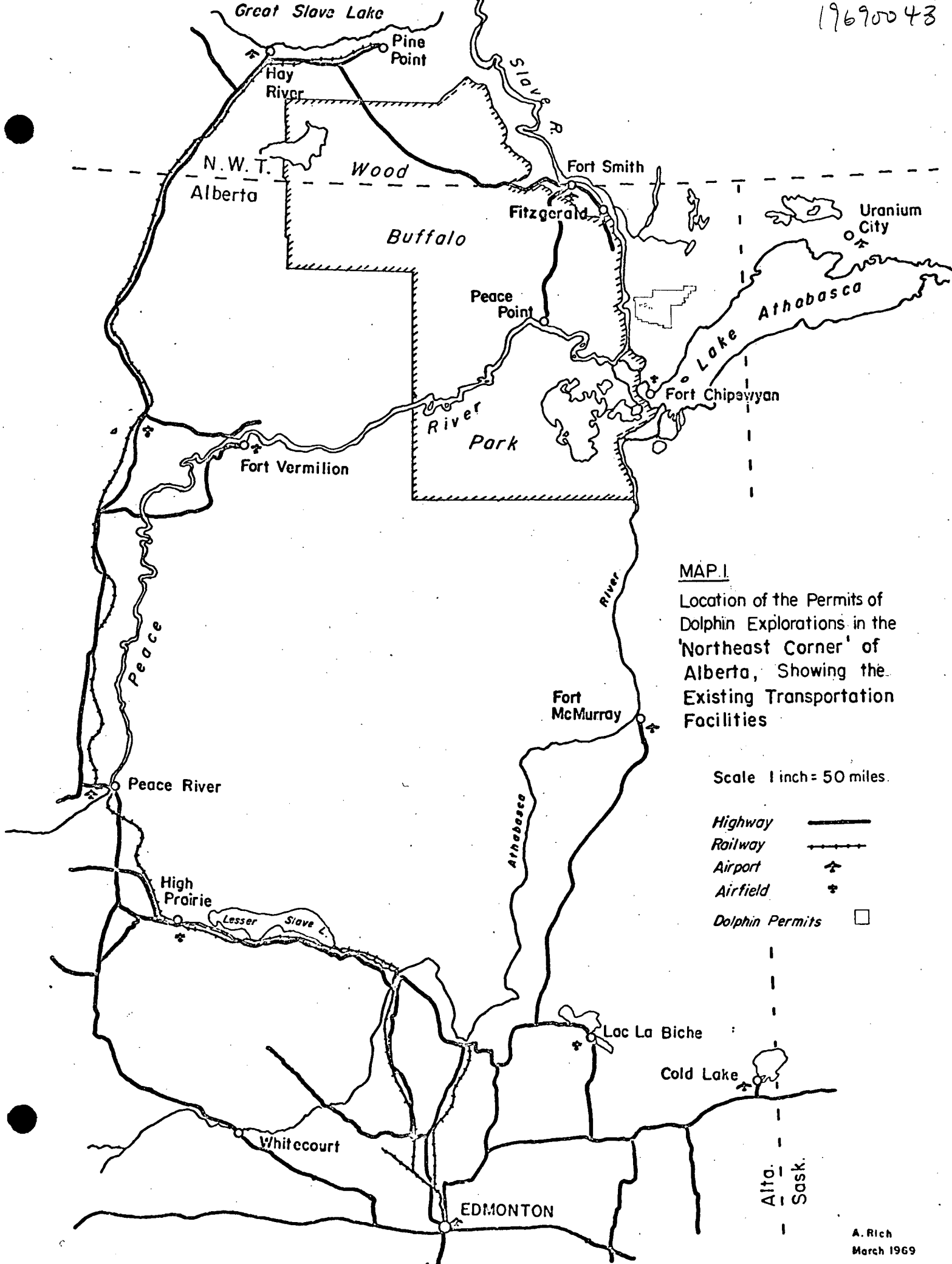
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INDEXING DOCUMENT NO. 700151

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MAP I

Location of the Permits of Dolphin Explorations in the 'Northeast Corner' of Alberta, Showing the Existing Transportation Facilities

Scale 1 inch = 50 miles.

- Highway —————
- Railway ———+———
- Airport —▲—
- Airfield —✦—
- Dolphin Permits □

## INTRODUCTION

Quartz Mineral Exploration Permits 128, 129, 130 and 131 are situated in the Northeast Corner of Alberta. The permits have areas of 17, 61, 77 and 77.75 square miles respectively. The total area is 148,960 acres. The permits were taken to cover favourable structures in an area where uranium and other mineralization is likely to occur.

## LOCATION AND ACCESSIBILITY

The permits lie about 35 miles northeast of Fort Chipewyan, between Lake Athabasca and the Slave River. The permits are at a latitude of about 59° 15' N and a longitude of 111° 00' W.

Numerous lakes within each of the permit areas provide easy access to float equipped aircraft based in Fort Chipewyan (distance of about 35 miles), Fort McMurray (170 miles), Fort Smith (60 miles) and Uranium City (80 miles). All the ground of all four permits is easily accessible by foot from camps located on the numerous lakes.

## GEOLOGY

### General

The Northeast Corner of Alberta is underlain by Precambrian metamorphic and igneous rocks. Metamorphic grades vary regionally and extend through the range from greenschist to granulite facies. Most of the igneous rocks have been metamorphosed to some extent. The rocks are Tazin equivalents and vary in age from about 1800 to 2200 million years. (Baadsgaard<sup>2</sup>).

The major structural features of the Precambrian of NE Alberta and NW - Saskatchewan are given on Map 2. This is a compilation based on published reports by the following governmental offices : Research Council of Alberta, Geological Survey of Canada, and Saskatchewan Department of Mineral Resources. An aerial photographic interpretation of smaller scale features is given by Godfrey<sup>4</sup>.

Mylonites are developed along the Warren and Allan faults. The mylonites of the Allan fault occur in bands over a width of several miles where mapped by Godfrey. This mylonite zone may be the most prominent in this sector of the Canadian Shield. The Allan fault strikes almost due south through the centre of the Northeast Corner toward Lake Athabasca, where it changes strike to a NE-SW direction. It can be traced north to the vicinity of Great Slave Lake. The Athabasca system of faults can be projected along strike toward Fort Chipewyan and may merge with the Allan fault in that area. The displacement on the Allan fault is believed to be largely strike slip. The east side of the Allan fault is believed to have moved north relative to the west side.

Four major sets of faults are apparent in the Northeast Corner. The strike directions are NW-SE, NE-SW, E-W and N-S. Those striking NW-SE are more apparent in the northeast part of the area. They have an apparent displacement which is left-handed and are believed to be tensional. They are probably the result of the same stress field which caused the displacement on the Allan fault. Due to a lack of detailed mapping it is not possible to say whether the NE-SW are mainly left or right handed faults. This second set is believed to be related to movement on the Allan fault. Both the NW-SE and NE-SW faults may therefore be approximately contemporaneous with the Allan fault. The E-W faults are later than the Allan fault and may not be caused by the same stress field.

With the possible exception of the latest granites, all rock types are strongly folded. Folding is mainly isoclinal. Some uranium deposits appear to be localized along the noses of folds. These may have occupied dilatancies resulting from the folding of alternately competent and incompetent lithologies (saddle reefs).

#### Genesis of the Uranium Deposits

Several possible sources for the uranium are outlined below:-

1. Late granites - Deposited by magmatic hydrothermal fluids.
2. Surrounding rocks - Derived through metamorphism and transported by hydrothermal fluids, or leached and transported by meteoric waters.

3. Mylonites - Derived from the mylonites during their formation by a process of leaching of the fine grained cataclastic material.
4. Combinations of the above.

Whichever initial source is favoured, the uranium appears to have been remobilized several times and localized in favourable open structures. Although most of the deposits in the Uranium City area occur in the approx. 2000 m.y. old Tazin rocks, a few vein type deposits of pitchblende do occur in the younger Martin rocks (approx. 1850 m.y.) and still younger Athabasca sandstone.

In the Uranium City area most deposits occur close to the Athabasca system of mylonites, which are developed along the Black Bay and adjacent parallel faults. A process of leaching of the uranium from the mylonites soon after their formation and before recrystallization is logical. This is analogous to the leaching of uranium from tuff beds.

The known deposits appear not to have any consistent spatial relationship with the granites as would be expected for case 1 above. On the other hand, the uranium deposits are not randomly distributed, and the suggestion is that these are not caused by the processes mentioned in 2.

#### Localization of Uranium deposits

The North-East Corner is compared with the Uranium City area. This is pertinent because Uranium City is nearby and it has been studied in detail: because both areas are underlain by Tazin rocks (*sensu lato*), and because the structural environment is almost identical.

Intensive study by many geologists in the Uranium City area points to the following common denominators in the control of uranium mineralization.

Faulting - The approximately twenty mines which have been in operation, together with the many uranium occurrences, demonstrate a very close association with shear zones and minor faults which tie in with the major structures. Broad mylonite belts are associated with the NE-SW striking faults, and there is evidence to suggest that the uranium

is genetically related to the process of mylonization. The intersections of faults striking E-W with faults striking NE-SW are, statistically, particularly favourable loci for uranium.

Folding - Dilatancies along the axes of minor folds serve as structural receptors for mineralization in several mines in the area (e.g. Eldorado). In each case the folds are in close proximity to faults and, therefore, constitute a structural control secondary to the fault.

Lithology - There does not appear to be any consistent lithological control for uranium in the Beaverlodge Area; the host rocks span almost the complete range of lithologies found in the region. Most uranium deposits are found in the 1820-2200 million year old (Baadsgaard<sup>2</sup>) Tazin group of gneisses and metasediments. The Tazin rocks are regionally metamorphosed and the grade of metamorphism ranges from greenschist to granulite facies.

The three most notable occurrences found by Godfrey are mentioned below. These are described more fully in Preliminary Report 58-41 (Res. Counc. of Alberta). His report covers only between 5% and 10% of the Precambrian of NE Alberta.

1. On the Southwest arm of Andrew Lake radioactivity of 6 times background was noted in biotite schist and feldspathic quartzite. The full extent is not known. This ground is held by Rapid River Mines (see attachment).
2. A level of radioactivity 4 to 5 times background is associated with an occurrence at Spider Lake (Godfrey<sup>1</sup>) and may extend for a strike length of about 2 miles. Grab samples assayed as follows: 1.03%U - .69%Mo; 3.93%U - 1.03%Mo; 3.29%U - 1.40%Mo. This property is covered by a permit held by McIntyre Porcupine Mines Ltd.
3. Numerous occurrences have been found in the vicinity of Cherry Lake. One of these radioactive occurrences continues for at least 150 feet along strike and 400 feet across strike. This ground is held by McIntyre.

The three occurrences cited above occur in metasediments.



At least three important uranium occurrences are documented in the area outside that covered by Godfrey. One of these, the Fishing Lake discovery, occurs in granite, granite gneiss and pegmatite (see attachment). High grade uranium over narrow widths has been reported for the Leggo Lake showing where the host rock is a "black hornblende granite".

According to Collins and Swan<sup>3</sup>, "four miles N 40° E of Allison Bay, yellow stains of alteration products were observed over an area of 30 feet by 400 feet, and, at one locality where surface blasting had been undertaken, a radioactive anomaly was found that reached a maximum of 10 times background on a geiger ratemeter". The host rocks are granite.

Little is known of the structural control for the occurrences noted by Godfrey. These may be localized along the axes of isoclinal folds close to major cross faults. The Fishing Lake, Leggo Lake and Allison Bay deposits are located along fracture zones striking E-W to NE-SW.

#### Detailed Geology of Permits 128, 129, 130 and 131

The area included by permits 128, 129, 130 and 131 was mapped on a reconnaissance scale by Riley<sup>5</sup>, in 1958. Only a very general impression of the rock types present can be gained from Riley's mapping. The rock types underlying the permits (according to Riley) are shown on Map 3.

Granite and prophyroblastic granite gneiss are the main rock types on the property. The regional structure is shown on map 2 (attached). The permits are located immediately to the west of the wide N-S striking mylonite zone of the Allan Fault. This mylonite zone is at least several miles wide where mapped further north by Godfrey.

The permits are situated so as to cover a strong system of generally E-W trending faults. These tend to converge toward the Slave River. Numerous equally strong faults strike at angles oblique to the E-W faults.

A system of generally north-south trending fractures pervades the entire area and these are particularly apparent around Barrow Lake on permit 131. These fractures appear to cut all the aforementioned faults. The overall fault and fracture density is probably greater than in any comparable area in this part of the Shield.

#### ECONOMIC POTENTIAL

The rocks in the NE Corner belong to the Tazin group (Godfrey<sup>6</sup>), which is the host rock for most of the uranium deposits in the Beaverlodge area of Saskatchewan. The metamorphic grades are the same.

The geological environment of permits 128, 129, 130 and 131 is considered highly favourable for the localization of uranium for the reasons outlined below:-

The structural environment is almost identical with that of the Beaverlodge uranium camp where an unstable belt adjacent to the NE-SW trending Athabasca system of mylonites is transected by a strong zone of E-W faults and associated minor faults. The permits by comparison cover an area with a particularly high density of faulting and fracturing which is part of an "unstable belt" adjacent to the mylonites of the Allan fault zone.

The importance of faults and fault intersections as controls for uranium mineralization has been emphasized. The frequency of occurrence of these controlling structures makes this area one of prime importance. With few exceptions the uranium deposits of the Beaverlodge area occur close to the Athabasca mylonite zone. A parallel can be drawn with the permit areas which similarly are adjacent to a strong mylonite zone.

Folds can serve as secondary structural controls as exemplified by some deposits in the NE Corner. Not enough detailed work has been done to comment on the frequency of folding in the permit area. It can be stated, however, that within those areas that have been mapped in detail in the NE Corner folding is prevalent throughout.

Numerous sulphide deposits occur in the NE Corner, notably sulphides of copper and molybdenum. To the south near Allison Bay (Allison Bay deposit - see attachment), silver mineralization associated with uranium and copper minerals has recently been discovered in later cross faults. The Allison Bay deposit changes from copper through silver to uranium along its strike. The association of copper, silver and uranium on a regional basis is common throughout the world. The structural controls of the sulphide deposits in the NE Corner appear to be the same as for the uranium. The claim blocks surrounded by permit 131 are believed to cover gold bearing quartz veins. Although uranium is the primary target, the possibility of finding economic deposits of silver, gold and copper should not be overlooked.

The amount of overburden is minimal and therefore the likelihood of locating radioactive anomalies both by ground work and by airborne radiometric methods is very much enhanced.

Only a small portion of the NE Corner has been mapped in detail and the remainder has been prospected in only a very cursory fashion. It is thought highly significant that, in spite of the lack of detailed work, so many important uranium deposits have been found to date in the area.

#### RECOMMENDED PLAN FOR EXPLORATION

The first phase of the exploration program should be to obtain a fairly detailed picture of the geology of the permit areas. Mapping and prospecting could be carried out by a two man crew, with supervision, over a three month period. Mapping should be done in greater detail in the neighbourhood of favourable structures. Scintillometers should be carried on all traverses.

The percentage of rock outcrop in the area is high. However, to supplement the geological and radiometric coverage of the area, soil or vegetation samples (geochemical or biogeochemical) could be collected. These could be taken at intervals of about 500 feet. The cost at this stage would be simply that of the sample bags. They could be analysed later for uranium and copper, if this is deemed feasible.

An airborne scintillometer (spectrometric) survey has been arranged to cover the area. The survey should be completed by mid-June. It should be emphasized at this point that, even with the most modern equipment, an airborne radiometric survey is still a reconnaissance tool. Its use would

in no way preclude the work of the ground party. It could considerably accelerate the exploration by outlining targets for investigation.

The costs are estimated for three phases of exploration, below. If a find of any significance is made in phase 1, then phase 2 should be considered. To complete phase 2 the field season can be extended as necessary to about mid October, or the number of men can be increased.

The operations indicated in phase 3 are, of course, contingent upon the success of the previous phase.

COSTS

Phase 1

Equipment - purchase (boat, motor, camp etc)	\$ 1,500
- rental (scintillometers, radio)	\$ 1,500
Camp operating costs	\$ 3,000
Mapping, prospecting and supervision (3 months)	\$ 8,000
Airborne radiometric survey - approx. 240 sq. miles - 1/8 mile spacing - 1920 line miles at \$5.00 per line mile (arranged)	\$10,000
	<u>\$24,000</u>

Phase 2

Detailed mapping	\$ 2,000
Detailed ground geophysics	\$ 2,000
Trenching, sampling, assays and supervision	\$ 2,000
	<u>\$ 6,000</u>

Optional:

Geochemical analysis	\$ 3,000
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Phase 3

Diamond drilling	\$10,000
Supervision	\$ 3,000
Sampling and assays	\$ 1,000
Camp	\$ 2,000
	<u>\$16,000</u>

TOTAL \$49,000

Respectfully submitted.

Anthony Rich

John A. Greig

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2. Baadsgaard, H.; Personal communication and; Godfrey, J.D. and Baadsgaard H.; (1962); Structural Pattern of the Precambrian Shield in Northeastern Alberta and Mica Age Dates from the Andrew Lake District; in Tectonics of the Canadian Shield; Royal Soc. Can.; Spec. Publ. No. 4.—
3. Collins, G.A. and Swan, A.G.; (1954); Preliminary Report of Field Work in Northeastern Alberta; Res. Council. of Alberta; Mim. Circ. No. 18.
4. Godfrey, J.D.; (1958); Aerial Photographic Interpretation of Precambrian Structures North of Lake Athabasca; Res. Council. of Alberta; Bull. No. 1.
5. Riley, G.C.; (1960); Geology, Fort Fitzgerald, Alberta; Geol. Surv. of Can.; Map 12-1960.
6. Godfrey, J.D.; (1958); Precambrian Shield Structures North of Lake Athabasca, Alberta; Res. Council. of Alberta; Contrib. No. 89.

## ATTACHMENTS

Map 2. Faulting and Uranium Mineralization in the Precambrian North of Lake Athabasca.

Excerpt: Edmonton Journal, Friday, Jan. 31, 1969.

Excerpt: Edmonton Journal, Monday, March 17, 1969.

Excerpt: Page 6 of Collins and Swan Report - Reference 3 above.

Excerpt: The Northern Miner, March 6, 1969.

Excerpt: The Northern Miner, Feb. 1, 1968.

Article: Western Miner and Oil Review, Dec. 1953. "First Alberta Uranium Discovery"; Ferguson, A.B.

# Wollaston drilling program contracted

TORONTO (DJ) — Gulf Minerals Co., wholly-owned by Gulf Oil Corp., Pittsburgh, said it has contracted for a winter diamond drilling program on uranium prospects in the Wollaston Lake area of northern Saskatchewan.

In December Gulf Minerals said it had obtained "highly significant results" from drilling in this area some 500 miles northeast of Regina. At that time the company said that because the results occurred in only one hole no estimate could

## Hunt for uranium moves into Alberta

The search for uranium has moved into Alberta.

Test drilling is slated to begin today on the south shore of Lake Andrew in the extreme northeast corner of the province.

Howard Travis, president of Rapid River Resources Ltd., said his firm will begin drilling at the site north of Lake Athabasca and 60 miles west of Uranium City, Sask. The site is 450 air miles northeast of Edmonton.

Other firms are also active in the area. If drilling samples indicate that there is sufficient ore of a high enough grade for mining, this would be the first uranium find in Alberta.

The development of the area could be assisted by the nearness of processing facilities at Uranium City and the available water supply at Lake Andrew.

A drilling outfit from Uranium City operating with two five-men shifts, will begin the drilling in spite of temperatures as low as 60 below, Mr. Travis said.

be made on the possible extent of the uranium mineralization.

The Saskatchewan government said then that an expanded exploration program to cost more than \$750,000 would be undertaken by the company, but a spokesman said it would likely be started next summer because of difficult winter conditions.

Gulf Minerals said Thursday that along with the drilling program a "deep stratigraphic test" would be drilled on one of the permits situated in the central part of the Athabasca Basin. The test is intended to penetrate the entire sedimentary column and is planned to end in the underlying Precambrian rock, Gulf Minerals said.

# Uranium vein found

A potentially commercial uranium find has been announced in Northeastern Alberta.

Howard Travis, president of Rapid River Resources Ltd., told The Journal today it is too early to say whether there is a commercial orebody, but the vein his company intersected is running "about two or three times" better than Eldorado's mine at Uranium City.

The discovery is the first announced in Alberta, although a number of companies have been working in the northeast section of the province for the past two years. It is anticipated that the news will spark a further flurry of interest and speculation.

Mr. Howard said Rapid River had drilled four holes earlier this winter at Andrew Lake, about 60 miles west of Uranium

City. The vein was intersected at about 70 feet in the No. 3 hole. Drilling was at 40 degrees from the horizontal and uranium mineralization was found in a 3½-foot interval of core.

The location selection was based on a report by Research Council of Alberta geologist Dr. John Godfrey.

Dr. Godfrey, who has been doing mapping and exploration work in the area since 1957, said a number of mining exploration companies have acquired ground in the area mapped by his crews.

During the past six years regional surface mapping on about 700 square miles has resulted in 10 maps. These have been "selling like hot cakes," he said, and in fact some are already out of print.

In addition to the surface

mapping, the Research Council has also conducted an aerial photo interpretation on about 3,500 square miles, and published findings on active anomalies.

While Rapid River is the first firm to report a find, Dr. Godfrey noted, a number of others have been extremely active. McIntyre Porcupine Mines Ltd., under an option arrangement with New Senator-Rouyn Ltd., has conducted an extensive prospecting and drilling program over the past two years. No information has been released by the firms.

However, Ken Godin, executive officer of McIntyre said today results "were not encouraging" and the firm has dropped its options.

Last summer over half of the  
*More URANIUM Page 18*

(Continued from Page 1)

Precambrian Shield which cuts diagonally across the northeast corner of the province was under lease said Dr. Godfrey.

In the last few months there has been an added flurry of activity resulting from the discovery by Gulf Minerals at Wollaston Lake, Sask.

There, uranium was found in the Athabasca Sandstone, where it had never been reported before. As a result, Dr. Godfrey expects extensive work in the areas of Alberta and Saskatchewan south of Lake Athabasca this summer.

## GOOD PROSPECTS

All assays to date indicate a high-grade zone has been discovered, Mr. Travis said.

"The directors of the company and Dr. K. Warren Geiger of Edmonton, company consultant, are pleased and encouraged," he added.

"Upon completion of further assaying, Dr. Geiger will recommend whether a general evaluation and larger-scale exploration program should be carried on."

Trading in Rapid River was delayed at the opening of the Calgary Stock Exchange, then jumped to \$1.90 bid — \$1.95 asked. It was trading in the \$1.40-\$1.70 range last week.

Crown-owned Eldorado Nuclear Ltd. has a mine and refinery at Beaverlodge Lake, just east of Uranium City. The town is about 450 air miles northeast of Edmonton, just north of Lake Athabasca.

There has been extensive uranium activity in that area of Saskatchewan for many years, but little encouragement in Alberta.



Preliminary Report of Geological Field Work, Northeastern  
Alberta. June 30 - August 27, 1953.

G.A. Collins and A.G. Swan. March 1954.

Research Council of Alberta. Mimeographed Circular 18.

Excerpts :

Fishing Lake Group  
North of Fidler Point, Lake Athabasca

These mineral claims were visited by traversing north from Fidler Point over migmatite rocks of a pink orthoclase - quartz granitic type. Along the north shore of Fishing Lake, a prospector for the group, outlined the prospect.

The radioactive anomalies, four or five times background count, occur in mylonized or crushed rock zones along an east-west strike. Minor amounts of yellow uranium alteration products were visible at the most westerly occurrence. It was reported that at more easterly points that were not visited, the alteration products are more continuous and radioactive anomalies of a higher order have been found.

Allison Bay, Lake Athabasca

Four miles, N 40°E, of Allison Bay, yellow stains of uranium alteration products were observed over an area 30 feet by 400 feet, and, at one locality where surface blasting had been undertaken, a radioactive anomaly was found that reached a maximum of 10 times background count on a geiger ratemeter. The rocks were granitic with visible quartz-orthoclase and minor ferro-magnesian minerals. No faults were observed but deep valleys with steep walls which parallel the structural trends in the area, may be traces of local faults or joint surfaces.

## Prospects In Northeast

# Alberta's Potential Uranium Obscured By Abundance Of Oil

The province of Alberta is well known throughout Canada for her fossil fuel resources. Situated almost entirely within a sedimentary basin, the province contains numerous crude oil, natural gas and coal fields. Production from these sources, which accounts for virtually all of Alberta's mineral production, has been sufficiently great to place Alberta as Canada's second largest mineral producing province.

An exception to this sedimentary basin, notes Alberta's Department of Mines and Minerals, is the northeast corner of the province, where some 10,000 sq. miles lie within the Precambrian Shield. The history of exploration in this area is fairly recent and much of it has not yet been explored for minerals.

### Mineral Showings Found

The western arm of Lake Athabasca intersects this area, dividing it roughly in half. In the past, what exploration was conducted was primarily in the portion to the north of the lake, as this region was closest to the mineral producing areas in Saskatchewan and the Northwest Territories. Although no significant discoveries have been made, showings of uranium, molybdenum and nickel have been found.

The announcement in early December of last year, confirming a very significant discovery of uranium in northern Saskatchewan has initiated an exploration

play which has spread to the Precambrian Shield region of Alberta. The discovery is in the Wollaston Lake area, but, it is not yet known in what formation it was made. Speculation that the discovery is in or associated with the Athabasca sandstone basin which extends across most of northern Saskatchewan and into the southern half of Alberta's Precambrian Shield area has resulted in the filing of quartz mineral exploration permits over a broad area.

### Issued Permits Double

Prior to the announcement of the discovery in Saskatchewan, 36 mineral exploration permits covering just under one million acres were held in the northeast corner of Alberta. Almost all of these permits were for areas in the region north of Lake Athabasca. Since the announcement, 44 new permits have been issued covering a million and a half acres. Most of these permits are for lands south of the lake, however 19 have been filed in unexplored areas in the lands north of the lake.

### Exploration Pattern

During the next 10 months considerable exploration will be conducted in the area. In most cases, initial exploration will be conducted from the air with scintillation and electromagnetic equipment in order to detect any anomalous areas. Following this, surface geological

### Brynelson Interests Cover Wide Range

Among the "Brynelson Group" of companies, associated with Brenda Mines through its president, B. O. Brynelson, Magnum Consolidated Mining Co. is participating in several exploration ventures. Through Hearne Coppermine Explorations the group will be carrying out work this season in the Bathurst Inlet area, Northwest Territories. Casino Silver Mines is beginning a \$150,000 program on its Casino property, 190 miles northwest of Whitehorse in the Yukon.

The Brynelson group now holds over 20% interest in Giant Mascot Mines, acquired last year. Giant Explorations, exploration subsidiary of Giant Mascot, has programs drawn up for several prospects, in British Columbia, Alberta and the Northwest Territories.

These include drilling, mapping and detailed geochemical and magnetometer surveys for the Nahwitti Lake base metals prospect near Port Hardy on Vancouver Island. Other ground is held in this area also.

Mapping and scintillometer, magnetometer and electromagnetic surveys are planned this summer for two 20,000-acre uranium-molybdenum prospects in northeast Alberta.

On 330 claims in the Hanbury River area, 250 miles north of Yellowknife, N.W.T., a \$112,000, 3-phase program of geophysics and drilling is planned. Participation in the program comes from Abidonne Oils and Western Explorations, initially to the extent of 50% of the \$30,000 cost of the first phase.

Giant Explorations also has a 50% interest in the Hedley Syndicate, which is investigating copper, molybdenum and zinc occurrences in the southeast Okanagan area of British Columbia. Pacific Petroleum holds the other 50% interest.

contd. ??

FEBRUARY 1ST, 1968

## McIntyre To Test Uranium Property Of New Senator

McIntyre Porcupine Mines has completed plans for what will amount to a sizable exploration program this year on an extensive uranium acreage taken under a working option last year from New Senator-Rouyn Ltd. The property is an 80-sq. mile concession located in the northeastern part of Alberta and some 60 miles due west of the Beaverlodge uranium camp in Saskatchewan. Also holding a minority interest in the ground is Astrabrun Mines.

The program is to involve diamond drilling as well as other surface investigations, with a drill being moved to the property and slated to commence work on or about Feb. 20. This is to take advantage of winter conditions so that first drilling may be done from the ice on Cherry Lake.

The program during last year's field season consisted primarily of surface trenching and general prospecting, and this outlined five separate radioactive areas of sufficient importance to warrant further work, The Northern Miner understands. In each case, the showings are associated with fault zones.

Most interesting showing is regarded as the one at the north end of Cherry Lake. Here, ore grade uranium values have been obtained in two areas, while three others are regarded as potential targets for further exploration.

In one case, a radioactive zone related to a major north-south trending fault has been traced intermittently by scintillation counter and surface trenching for a length of about 2,500 ft. At the south end, near the shore of Cherry Lake, chip sampling of a rock trench across the zone has returned grade of 0.79% uranium oxide across 4.0 ft.

High scintillation counter readings have also been obtained in a swampy area about the middle of the known length. This is regarded as an interesting area and will be tested later by diamond drilling. Only low grade values were found in trenching towards the north end of the zone.

As mentioned, first drilling will be near the south end of this zone.

In addition to this winter program, which is expected to amount to at least 3,000 ft. of work, an extensive program has been lined up for this coming summer season. This latter will include further surface investigation of other known areas, as well as diamond drilling which already has been earmarked for some.

As indicated, the property is held under working option from New Senator which, in turn, obtained the ground from Astrabrun Mines. If carried to completion by McIntyre, a new company would be formed to operate the property in

which McIntyre interest would amount to approximately 52%, with New Senator having a 39% stake. In addition, McIntyre has also agreed to furnish most of the senior financing which would be required should production be warranted.

# First Alberta Uranium Discovery

By A. B. FERGUSON

TECHNICAL MINE CONSULTANTS, LTD.

**D**URING the early part of June, 1953, a discovery of radioactive material was made north of Fidler Point, on Lake Athabasca, about 80 miles westerly from Beaverlodge. As far as is known at the present time, this is the first radioactive discovery to be made in Alberta. The original discoveries were made in the vicinity of a small lake known as Fishing Lake, which is approximately five miles north of Fidler Point. The area is accessible only by air but several small lakes in the general vicinity are suitable for pontoon-equipped aircraft.

The topography of the area, in general, is similar to the Beaverlodge section of the Athabasca district in that northeasterly striking ridges, separated by valleys or draws which are frequently muskeg or lake-filled, are predominant. The differences in elevation between the valleys and hills is somewhat less than is common to Beaverlodge, the maximum relief being not more than 200 feet. The hills are largely outcrop, with the overburdened areas being lightly sand covered. Many of the valleys have precipitous walls suggesting that may contain an appreciable depth of fill.

## Geology

No geological map of the Fidler Point area has been published as yet, but examination of the ground now under option to Goldfields Uranium Mines Limited suggests that the rock types of the area are similar to those in the Beaverlodge district, and are predominantly granite, granite-gneiss and pegmatite.

The radioactive discoveries are in close proximity to two prominent, parallel, east-west striking draws about 400 feet apart and which will be referred to as the north and south

Dec 1953

draws. Pronounced radioactivity occurs over considerable areas, close to each draw, and is found in coarse-grained, hematized rocks composed predominantly of feldspar, with minor amounts of quartz and chlorite. To the north of the south draw (where the contact is covered), the feldspar rock, where visible as outcrop, has a width of up to 100 feet, and is found to parallel the south draw on the north side, and the north draw on the south side. Between these two parallel bands, the hematization is less intense. To the north of the north draw and south of the south draw a similar red alteration is present but fades quickly to the north and south respectively to a pale grey granite rock.

Radioactivity has been found in only one area in the hematized rock on the south side of the north draw, but has been found in numerous places where the hematized feldspar rock outcrops on the north side of the south draw for a strike length of approximately 8,000 feet. Where radioactivity has been discovered, it is present over fairly large areas and some pitchblende and uranium stain has been found in small fractures within some of these areas.

## Progress

Work to date has consisted of geological mapping (on a scale of 1 inch = 100 ft.) and prospecting of the 16 claims under option. In addition two diamond drills have been moved to the property and are at present exploring the radioactive occurrences associated with the south draw where the hematized rocks are obscured by overburden. One diamond drill hole has been completed and the core indicates that the south draw represents the trace of a strong fault. Brecciation and kaolinization with an

appreciable amount of fault gouge are present over a core length of 15 feet. No radioactivity was in evidence in the fault itself but preliminary scintillation of the core showed some radioactivity in the red altered rocks on the north wall.

It is proposed to diamond drill at least three of the more promising radioactive areas before freeze-up, by which time sufficient information should have been obtained as to the character and content of the occurrences to allow an evaluation of the area.

No trenching has been attempted in the main draws because of the apparently heavy covering of sand and muskeg. Some stripping has been done where overburden on the ridge paralleling the fault valley was not heavy, but because of the heavy overburden in the more promising areas, diamond drilling is the only practical method of exploration.

## General

An area of approximately 18 square miles had been staked in the Fishing Lake area by the first of September. In addition, a large block of ground had been recorded about ten miles to the north of Fishing Lake where some evidence of radio-activity has been discovered. It is not known at this time whether or not there is any relationship between the two occurrences.

Most of the men who staked claims in the Fidler Point area were not familiar with the two-post method of staking which is in use in Alberta. As a result, the general staking picture is extremely confused, and the original locators have found that, in many cases, it was necessary to re-stake their claims in order to protect the original investment.

## Wide Spread Of 'U' Prospects Jointly-Held By Subeo, Radex

Either directly or through its subsidiary, Radex Minerals, Subeo Ltd. now owns some 935,000 acres of uranium and natural gas prospects in Ontario, Quebec, Alberta and Newfoundland, according to an interim report.

In the Elliot Lake-Blind River area, Subeo holds directly 882 claims, while the Radex Uranium Syndicate in which Subeo maintains a 65% interest, holds 1,047 claims. In one area where Subeo holds 74 claims, an additional 20 are held by Sheba Mines, control of which has now been obtained by Subeo. Subeo is directing work on all 94 claims this summer, with Sheba taking a 20% share in a proposed drill program.

In the Mont Laurier-St. Anne du Lac area of Quebec, Subeo has optioned 1,128 claims covering 45,000 acres, while Radex Minerals has staked 120 claims and optioned 166 claims.

In Northern Alberta, Radex Minerals has optioned 36,000 acres in the Rapid River area. In the Marguerite River area another 100,000 acres have been acquired, and summer programs for both areas are under consideration. Under the agreement between Subeo and Radex Minerals, the latter conducts all Canadian uranium exploration for the Subeo organization except in the Elliot Lake area. Subeo retains a first right of refusal to participate in up to 50% of discoveries of minerals other than uranium on prospects turned over to Radex under this agreement.

### Oil Interests

In the Otish Mountains of north-central Quebec, Radex will be working with Atlantic Richfield and Hudson's Bay Oil

and Gas, where 33,000 acres are held under the joint agreement. Some \$60,000 has been spent so far in the first exploration phase, which is being financed by Atlantic Richfield and Hudson's Bay, up to \$100,000. A second phase, estimated at \$200,000, is planned, in which the Radex participation would amount to \$35,000.

Uranium is also being sought in Newfoundland where Radex has obtained permits covering 324,000 acres from the Reid Newfoundland Co. and 256,000 acres from the Newfoundland & Labrador Corp., a Canadian Javelin subsidiary. Further permits are under negotiation. An immediate aerial radiometric survey is planned, to be followed by geochemical surveying.

### Rights Offer

Shares of Radex were called for trading on the Vancouver Stock Exchange on May 6 of this year. The company is planning a rights offering whereby shareholders of record at June 30 will be able to purchase to June 30, 1971, one additional share at \$1.50 per share for every two shares held. To June 30, 1973, purchase price will be \$1.75 per share, to June 30, 1974, it will be \$2.50.

During the 3-months ended May 31, 1969, Subeo received \$9,704 from natural gas sales and spent \$42,954 on exploration, property acquisition and administration. Working capital at May 31 was \$153,154.

At May 31 Radex Minerals' working capital was \$606,976. This followed the expenditure of \$22,706 on exploration, \$10,869 on administration.

GEORGE CROSS NEWS LETTER LTD.

NO. 129 (1969)

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JUNE 12, 1969

### FOR THE RECORD

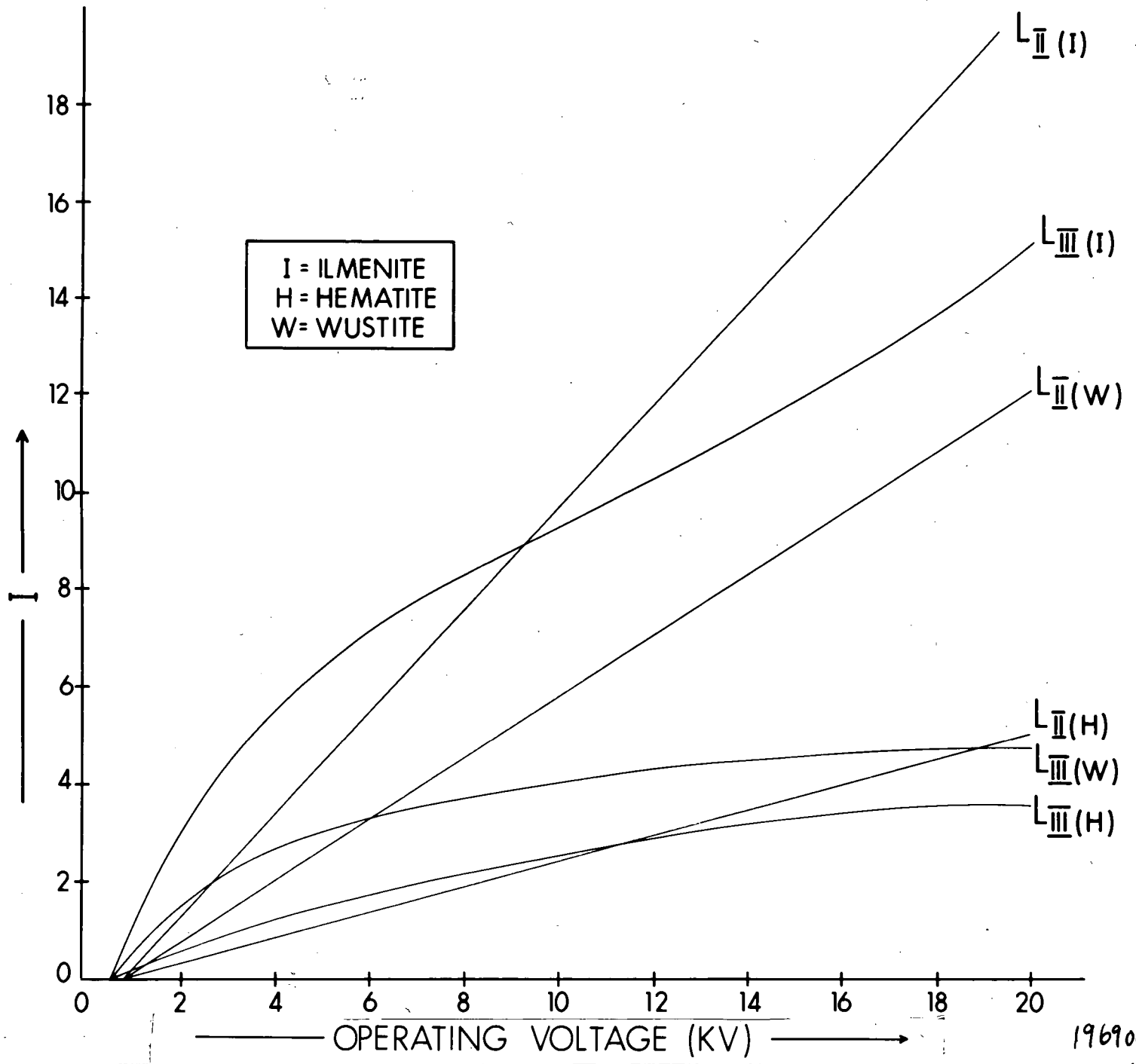
Rapid River Resources Ltd. has reported a \$120,000 mapping, surveying and drilling program is underway on its uranium prospect in northeastern Alberta, 60 miles west of Uranium City, Saskatchewan.

A report by consulting geologist, Dr. K. Warren Geiger, of Edmonton, said good results from a 4-hole diamond drill program this spring warranted further investigation.

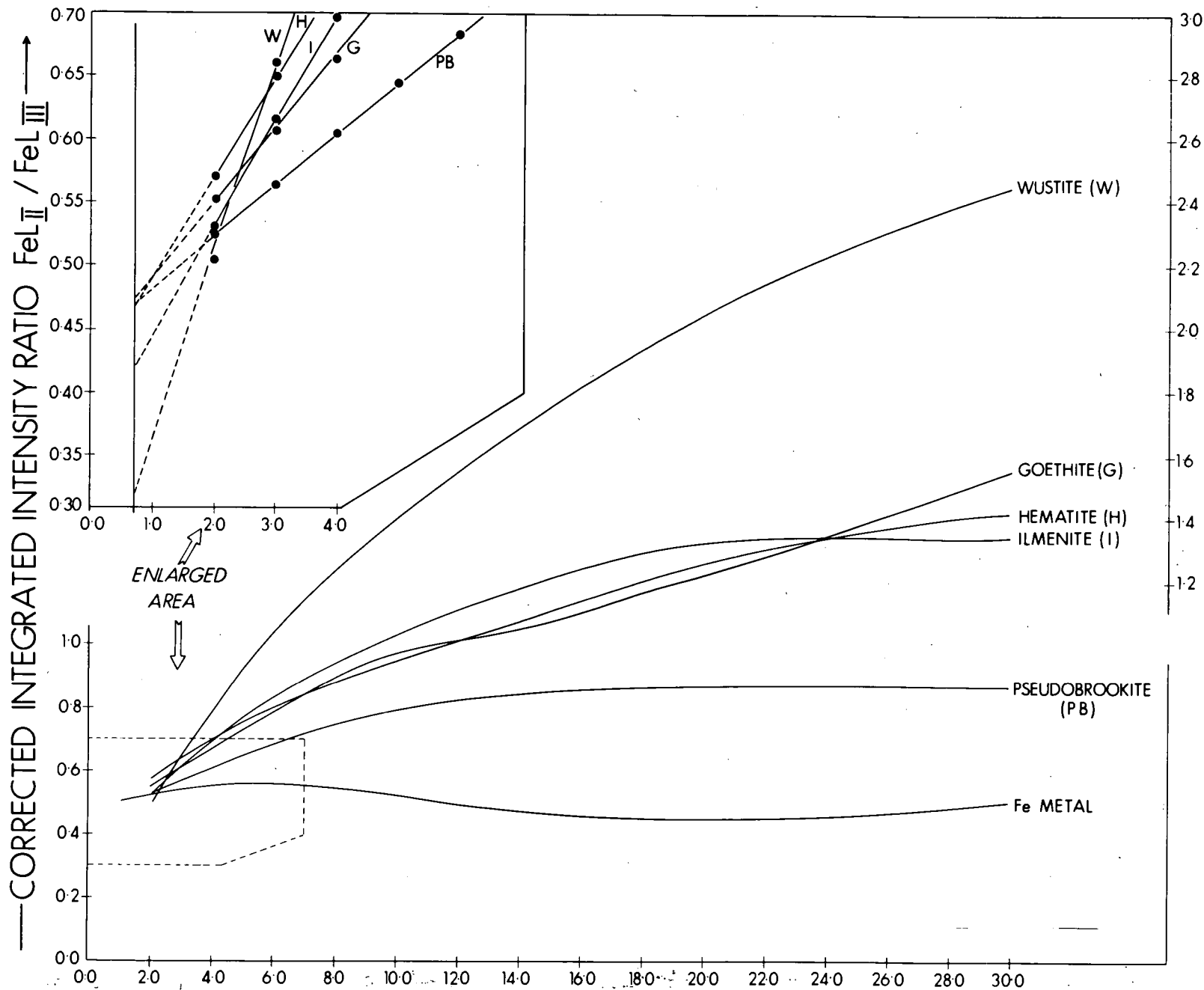
Earlier exploration established 298 separate radioactive anomalies, with concentration associated with two probable fault structures, both apparently more than 6,000 feet long.

The new program will involve systematic drilling of one of these structures.

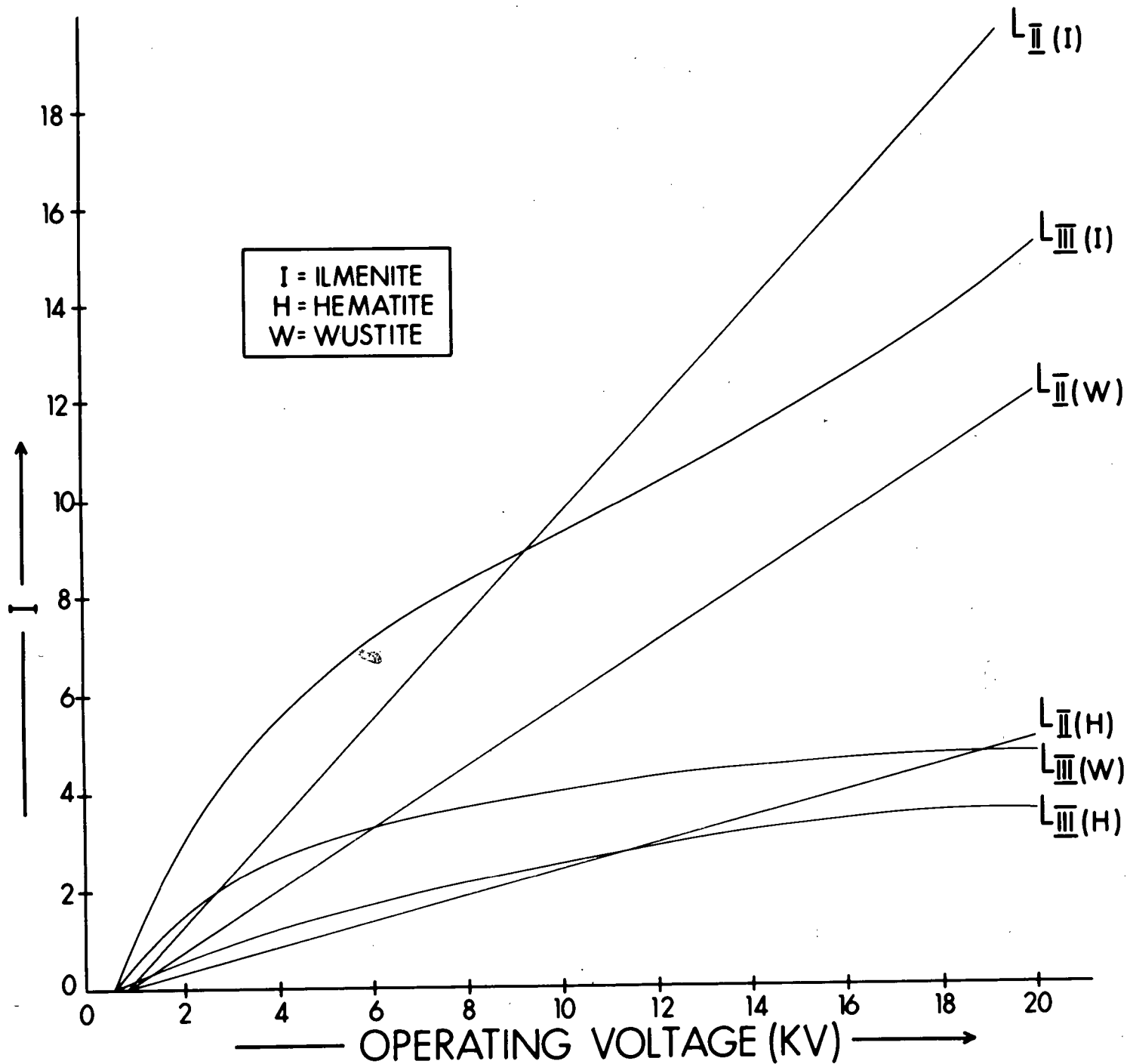
Rapid River Resources is listed on the Calgary Exchange. Through its majority interest in Sheritt-Lee Mines Ltd., it controls Silver-Lee Mines Ltd., which holds property in the Beaverdell region east of Kelowna and on Cottonwood Creek northwest of Lytton.



19690043  
Chart #1



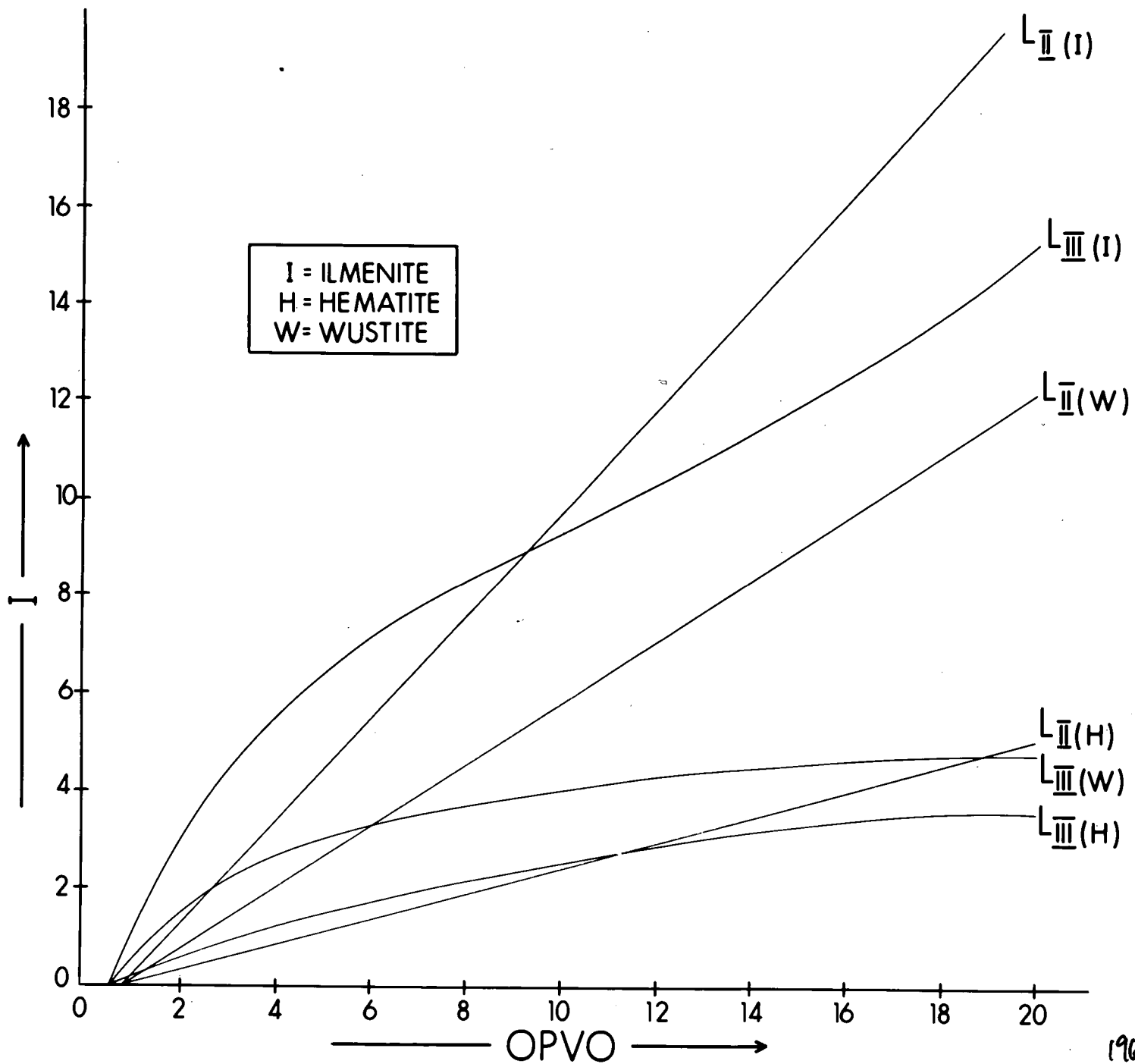
19690043  
 Chart #2



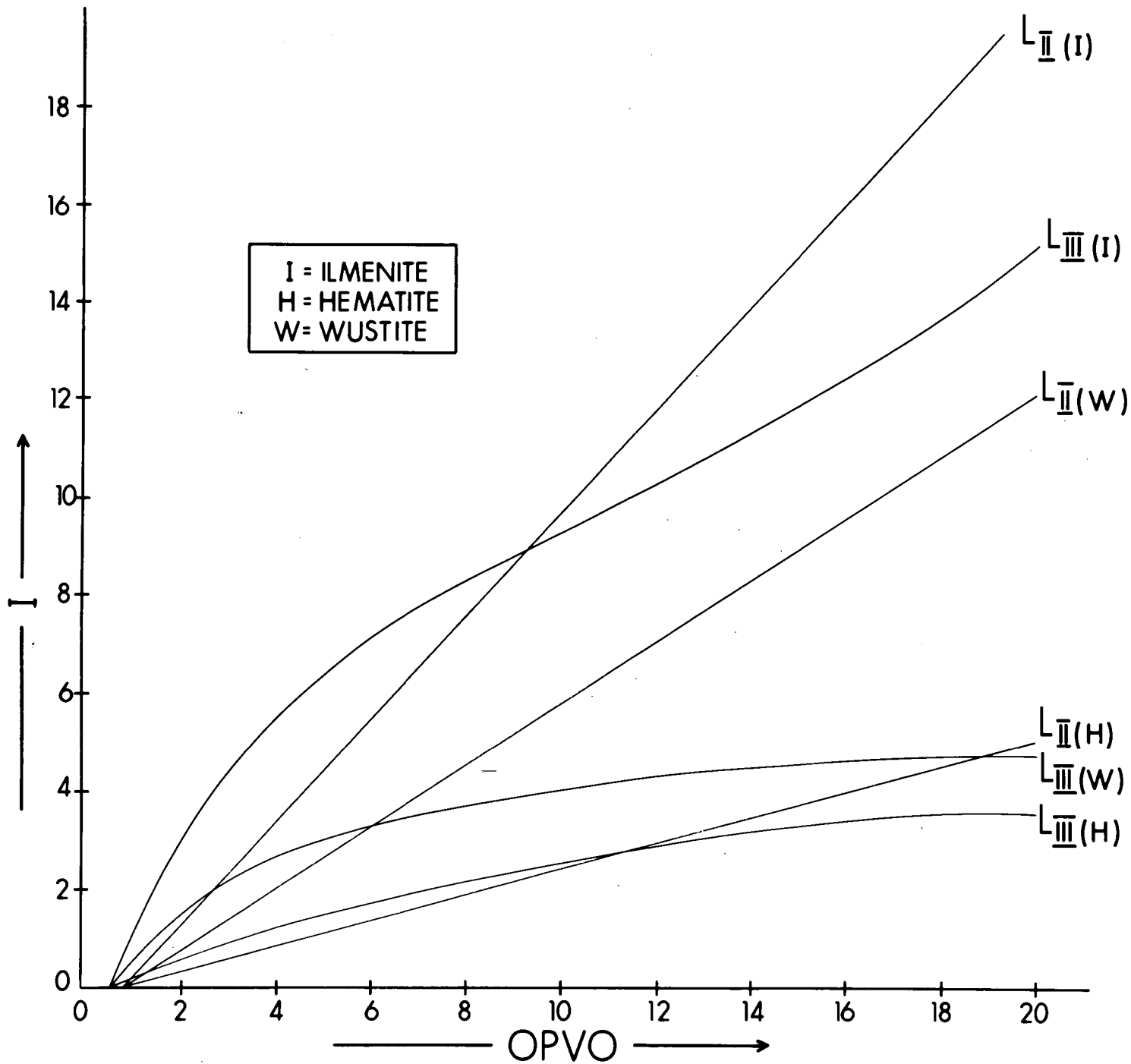
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Chart # 3

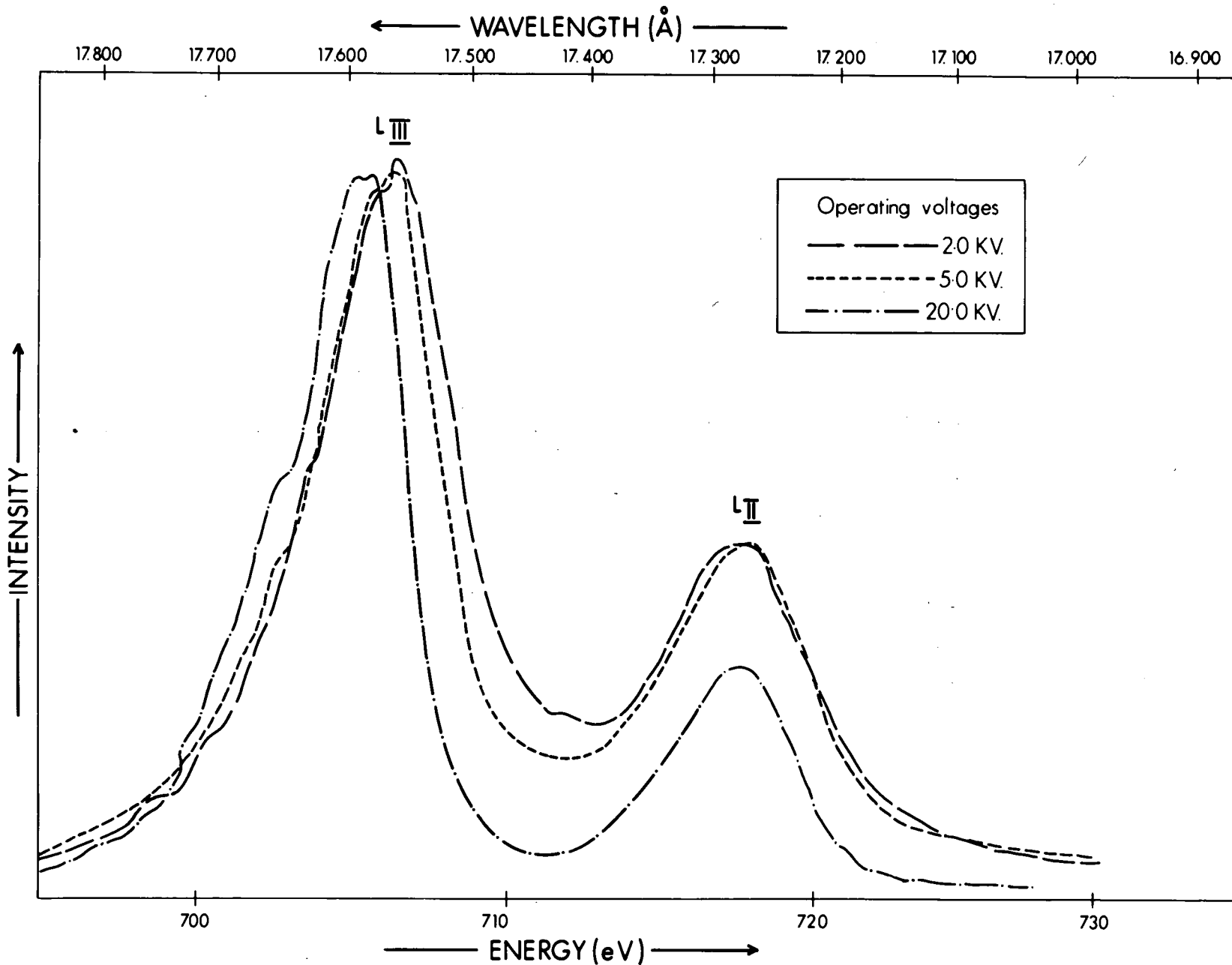




19690043  
Chart #4

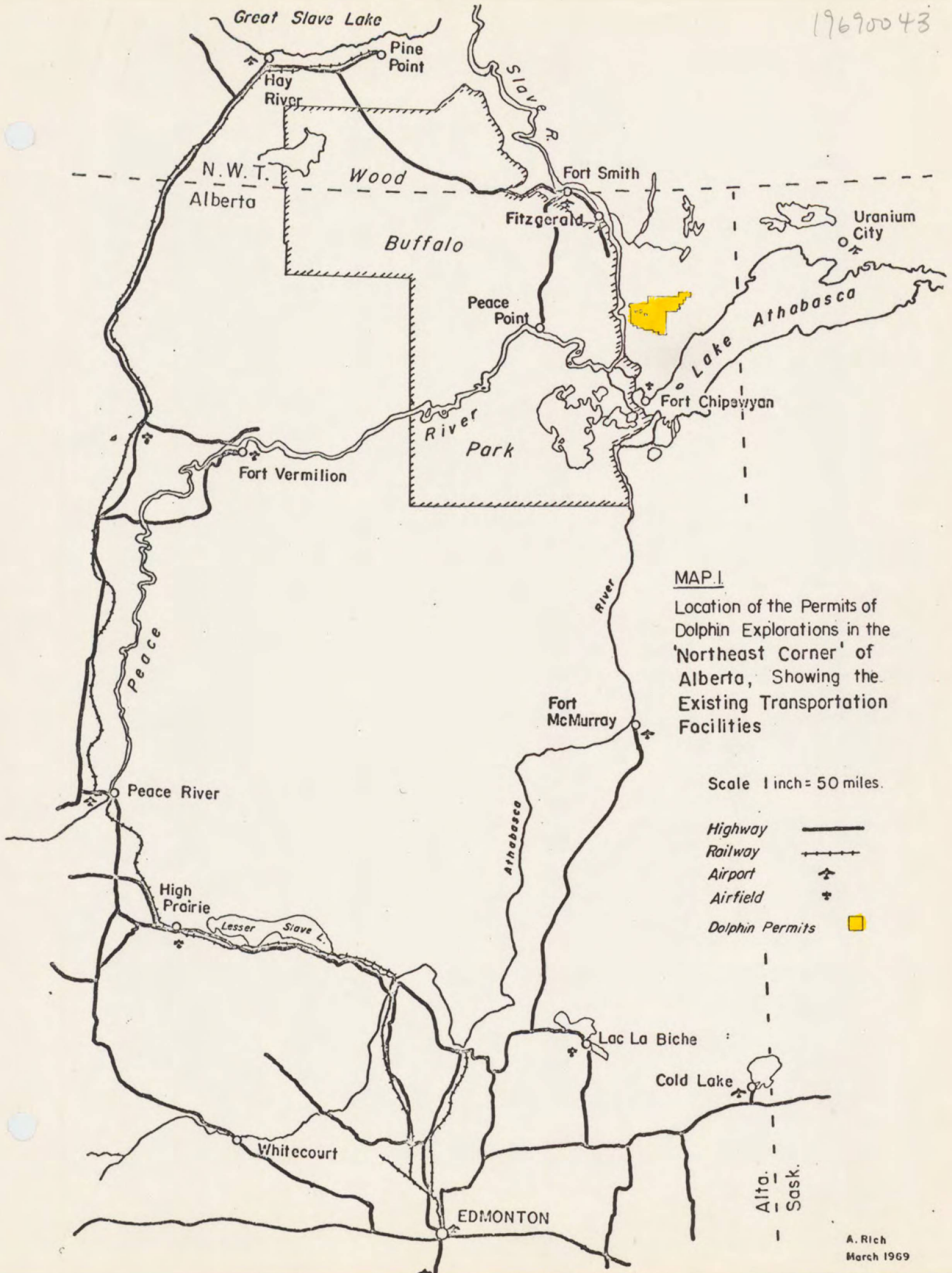


19690043  
Chart # 5



Fe L<sub>II,III</sub> X-RAY EMISSION SPECTRA OF HEMATITE.

19690043  
Chart #6



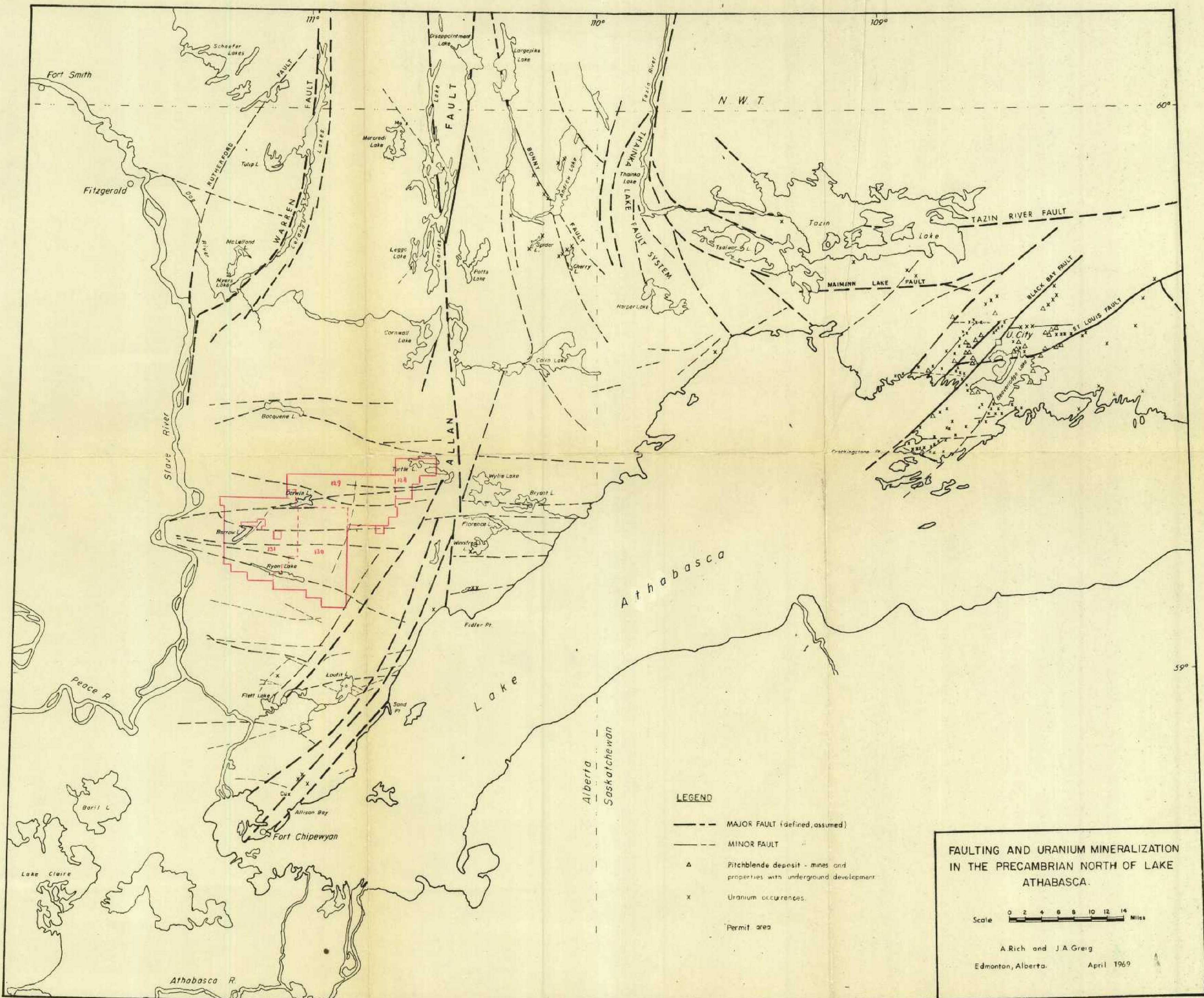
MAP I

Location of the Permits of Dolphin Explorations in the 'Northeast Corner' of Alberta, Showing the Existing Transportation Facilities

Scale 1 inch = 50 miles.

- Highway ————
- Railway - - - - -
- Airport ✈
- Airfield \*
- Dolphin Permits ■





**LEGEND**

- — — MAJOR FAULT (defined, assumed)
- - - MINOR FAULT
- Δ Pitchblende deposit - mines and properties with underground development
- x Uranium occurrences
- Permit area

**FAULTING AND URANIUM MINERALIZATION  
IN THE PRECAMBRIAN NORTH OF LAKE  
ATHABASCA.**

Scale 0 2 4 6 8 10 12 14 Miles

A. Rich and J.A. Greig  
Edmonton, Alberta. April 1969

MAP 2. to Accompany Report for Dolphin Explorations Ltd.

19690043



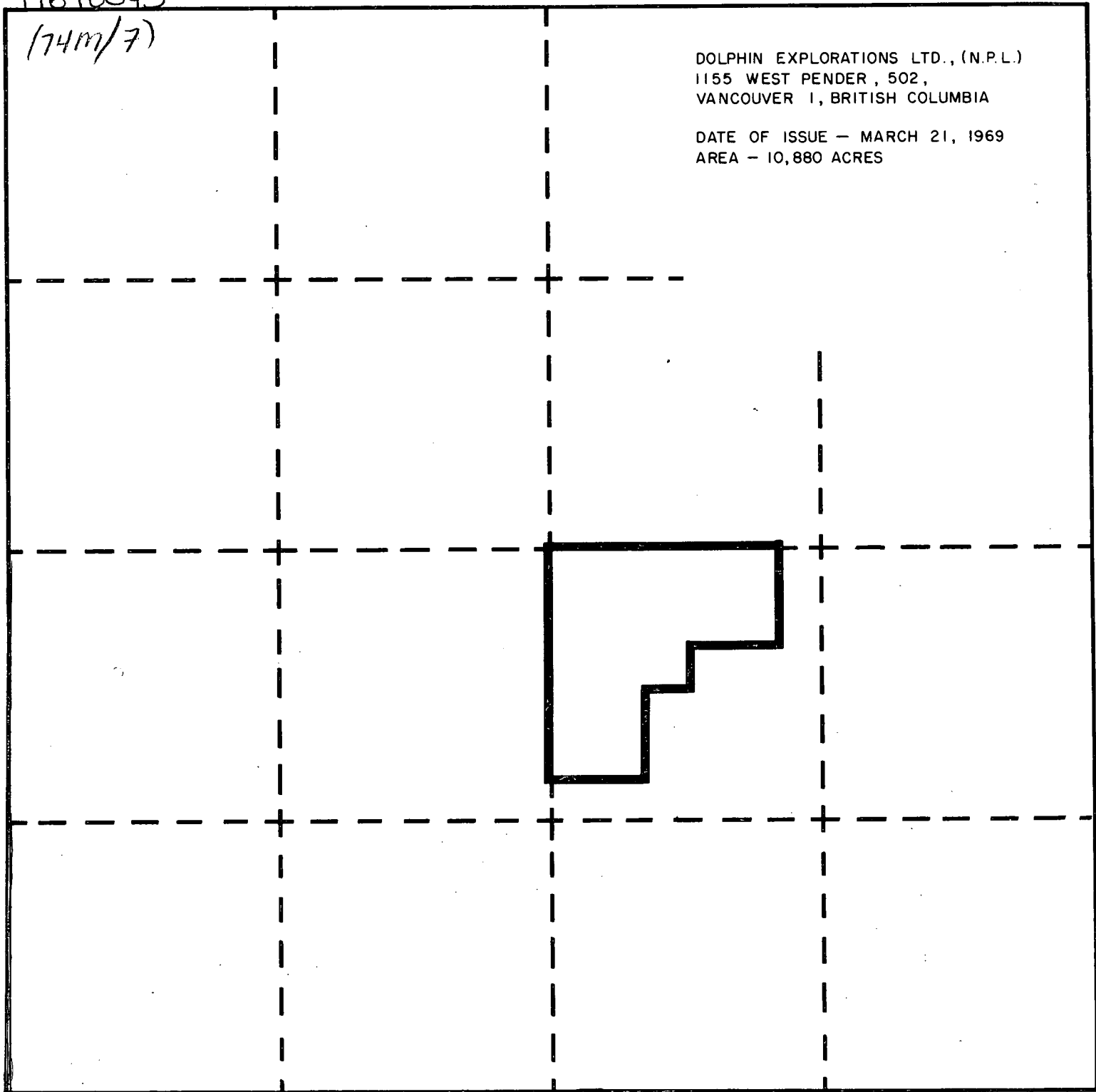
# QUARTZ MINERAL EXPLORATION PERMIT No. 128

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(74m/7)

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AREA — 10,880 ACRES



TP. 119

TP. 118

R. 4

R. 3 W. 4 M.

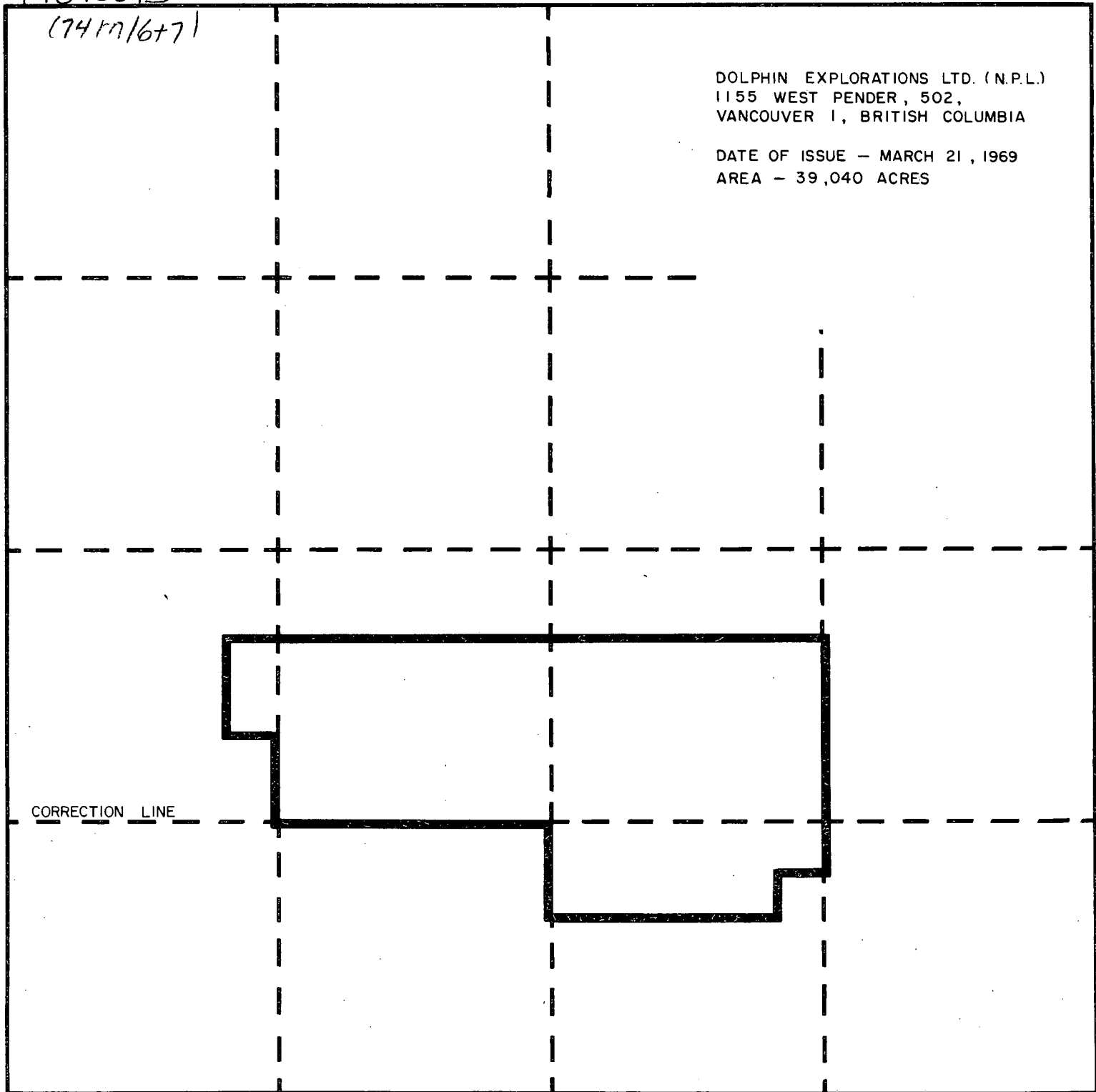
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AREA - 39,040 ACRES



TP.119

TP.118

CORRECTION LINE

R.7

R.6

R.5

R.4 W. 4 M.

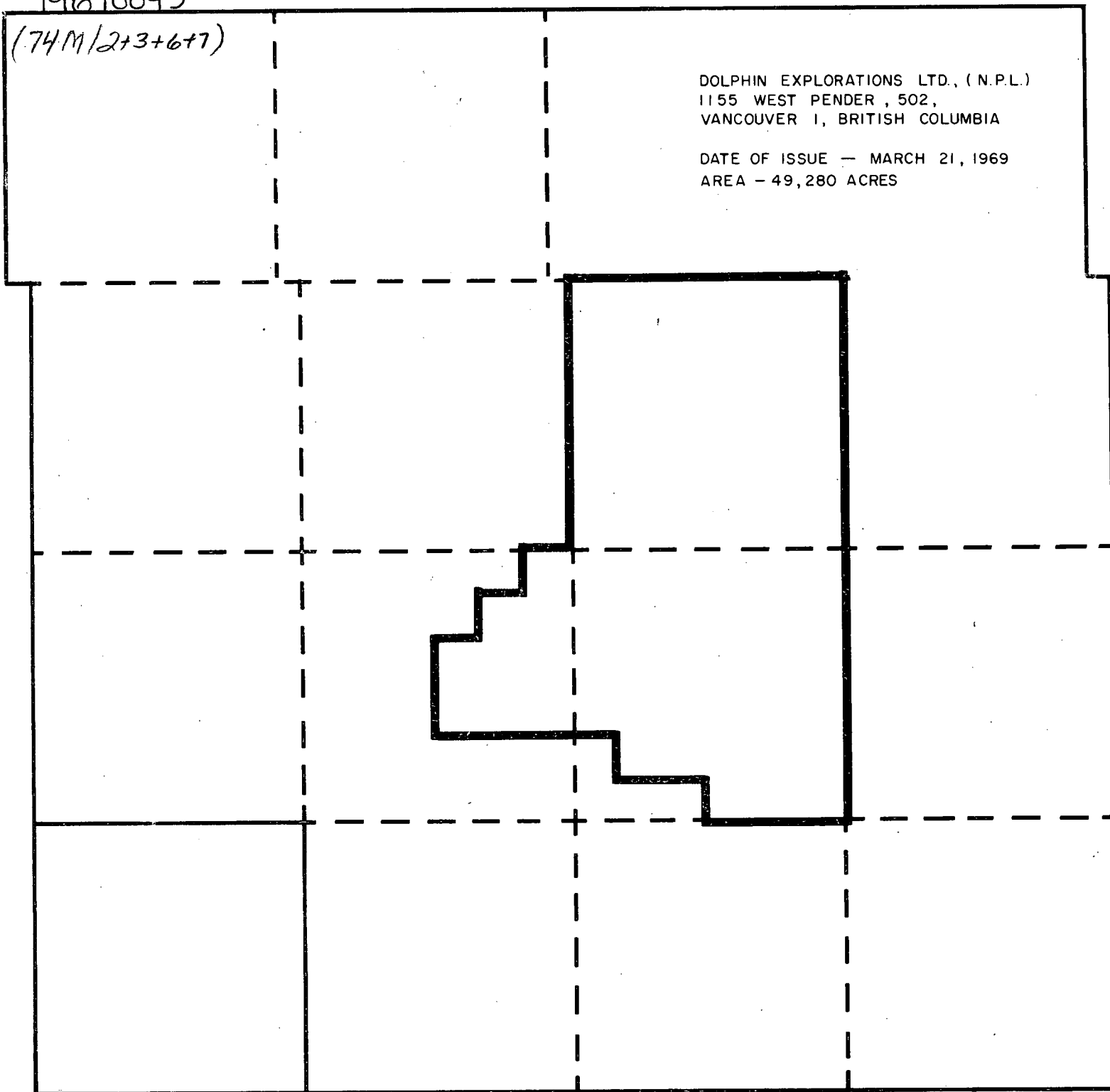
QUARTZ MINERAL EXPLORATION PERMIT No. 130

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AREA — 49,280 ACRES



R. 7

R. 6

R. 5 W. 4 M.

TP. 118

TP. 117

TP. 116



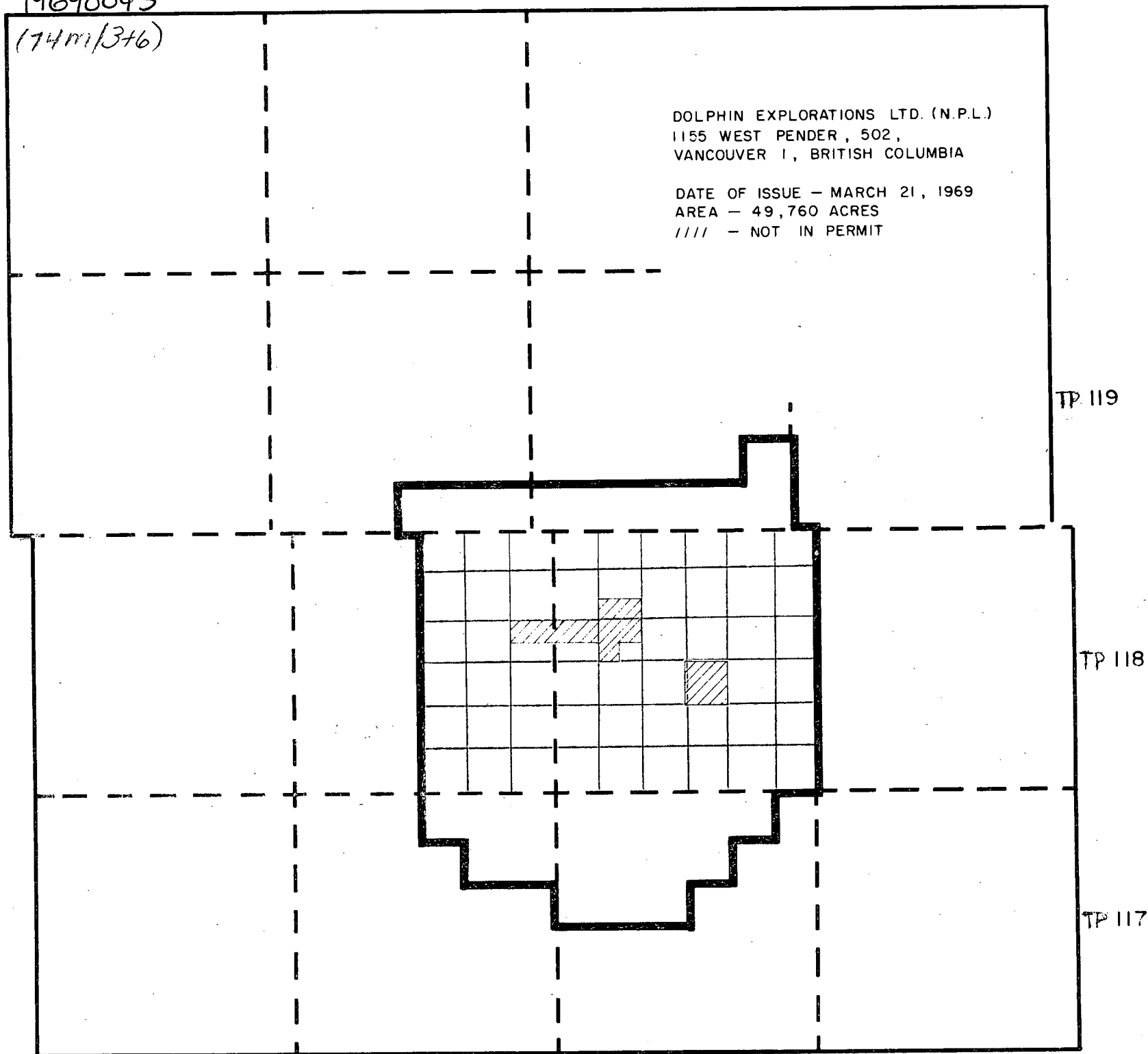
QUARTZ MINERAL EXPLORATION PERMIT No. 131

19690043

(74mi/3+6)

DOLPHIN EXPLORATIONS LTD. (N.P.L.)  
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DATE OF ISSUE - MARCH 21, 1969  
AREA - 49,760 ACRES  
//// - NOT IN PERMIT



R. 8

R. 7

R 6 W 4 M