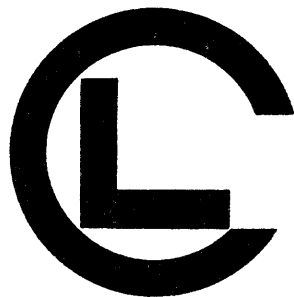


CRY LAKE
MINERALS
LTD (N.P.L.)



PROSPECTUS
DECEMBER 1969

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CRY LAKE MINERALS LTD.

(Non-Personal Liability)

Registered Office
#1650 — 777 Hornby Street
Vancouver 1, British Columbia

NO SECURITIES COMMISSION OR SIMILAR AUTHORITY IN CANADA HAS IN ANY WAY PASSED UPON THE MERITS OF THE SHARES OFFERED HEREUNDER AND ANY REPRESENTATION TO THE CONTRARY IS AN OFFENCE.

THERE IS NO SECONDARY MARKET FOR THE SECURITIES BEING OFFERED HEREIN AND THE PRICE OF THESE SHARES WAS DETERMINED BY THE OFFICERS OF THE COMPANY.

NO SURVEY HAS BEEN COMPLETED OVER THE MINING PROPERTIES HELD BY THE COMPANY AND, THEREFORE, IN ACCORDANCE WITH THE MINING LAWS OF THE APPROPRIATE JURISDICTION IN WHICH SUCH PROPERTY IS SITUATE, THE EXISTENCE OF, AND THE AREA OF SUCH PROPERTIES COULD BE IN DOUBT.

OFFERING: 380,000 SHARES.

	COLUMN 1	COLUMN 2	COLUMN 3
PER SHARE:	80¢	20¢	60¢
TOTAL:	\$304,000.00	\$76,000.00	\$228,000.00

The Company intends to engage in mineral exploration. Of the shares issued and to be issued, 21.4% are being offered to the Public and of the remaining 78.6%, 47.4% were issued to the directors, officers and controlling persons for cash and property. Reference in this behalf may be had to "Principal Holders of Securities" on Page 9 and to "Capitalization" on Page 2 of this Prospectus.

THE COMPANY IS ENGAGED IN AN EXPLORATORY SEARCH FOR ORE AND ACCORDINGLY A PURCHASE OF SHARES OFFERED BY THIS PROSPECTUS MUST BE CONSIDERED A SPECULATION.

DATED THIS 15th DAY OF DECEMBER, A.D. 1969.

DETAILS OF THE OFFERING

Offering of Shares and Plan of Distribution:

Cry Lake Minerals Ltd. (NPL) (the "Company"), is offering, by this Prospectus, 380,000 shares at \$.80 per share, payable in cash upon application and subject to a commission of \$.20 per share. The rate of Commission is 25% and the offering is for shares with \$.20 discount. No commission will be paid to trading Directors.

These shares are to be sold by the Company through its Trading Directors and Registered Brokers without the use of Underwriters.

Description of Common Shares:

The shares of the Company being offered by this Prospectus are common shares with a nominal or par value of \$1.00 per share. Any and all of such shares, when issued, shall be deemed to be fully paid and non-assessable and the holder of any such share is not liable to the Company or its creditors in respect thereof. All dividends declared by the Directors shall be paid to shareholders in proportion to the number of shares held by the shareholders.

Every shareholder present at a meeting of the shareholders is entitled, on a show of hands, to one vote and, on a poll, to one vote for each share held by him. All of such shares, when issued, rank equally for the purposes of liquidation, distribution to shareholders and all other purposes.

Dividend Policy

The Company has not paid any dividends since the date of its incorporation. The payment of dividends will ultimately be determined by the Board of Directors on the basis of earning, financing requirements and other relevant factors.

Registrar and Transfer Agent:

The Registrar and Transfer Agent of the Company's common shares is Canada Permanent Trust Companies at its principal offices at 455 Granville Street, Vancouver 2, B.C.

Purchaser's Statutory Rights of Withdrawal and Rescission:

With respect to any of the securities covered by this Prospectus which are offered in the Province of British Columbia, Section 61 and 62 of the Securities Act, 1967 (British Columbia) provide in effect that, where a security is offered to the public in the course of primary distribution,

- (a) A purchaser has a right to rescind a contract for the purchase of a security, while still the owner thereof, if a copy of the last Prospectus together with financial statements and reports and summaries of reports relating to the securities was not delivered to him or his agent prior to delivery to either of them of written confirmation of the sale of the securities. Written notice of intention to commence an action for rescission must be served on the person who contracted to sell within sixty (60) days of the date of delivery of the written confirmation but no action shall be commenced after the expiration of three months from the date of service of such notice.
- (b) A purchaser has the right to rescind a contract for the purchase of such security while still the owner thereof if the Prospectus or any amended Prospectus offering such security contains an untrue statement of a material fact or omits to state a material fact necessary in order to make any statement therein or misleading in the light of the circumstances in which it was made, but no action to enforce this right can be commenced by the purchaser after the expiration of Ninety (90) days from the later of the date of such contract or the date on which such Prospectus is received or is deemed to be received by him or his agent.

INCORPORATION AND HEAD OFFICE

Cry Lake Minerals Ltd. (NPL) (herein sometimes referred to as "the Company") was incorporated as a Specially Limited Private Company under the "Companies Act" of the Province of British Columbia on the 1st day of October, 1968, by Certificate of Incorporation. The Company was converted to a Public Company by Certificate dated the 25th day of November, A.D. 1969. The Head Office of the Company is situated at Ste. #514 - 355 Burrard Street, Vancouver, British Columbia and its registered office is situated at Ste. #1650 - 777 Hornby Street, in the City of Vancouver, Province of British Columbia.

CAPITALIZATION

The authorized capital of the Company is \$5,000,000.00 divided into 5,000,000 shares with a nominal or par value of \$1.00 each, out of which 1,393,752 shares are issued and paid up.

Designation of Security	Amount Authorized	Amount Outstanding as of June 30, 1969	Amount Outstanding as of October 1st, 1969	Amount to Be Outstanding if all Securities Being Issued Are Sold
COMMON	5,000,000	1,452,002	1,393,752	1,773,752

Upon completion of the sale of 380,000 shares offered by this Prospectus, Messrs. Egon B. Krueger and Robert J. Keen, the Company's Promotors, will hold 31.5 percent of the outstanding shares of the Company compared to 40.1 percent of the outstanding shares of the Company presently held by them.

MANAGEMENT OF THE COMPANY

DIRECTORS AND OFFICERS:

The Directors and Officers of the Company are tabulated below:

NAME AND ADDRESS	POSITION AND OFFICE	PRINCIPAL OCCUPATION WITHIN THE FIVE PRECEDING YEARS
EGON B. KRUEGER, #403 - 2180 Argyle Ave., West Vancouver, B.C. Prospector	President and Director	1963-64 — self-employed Prospector. 1964-67 — Prospector for and Field Manager of Pacific Giant Steel Ores Ltd., #410 - 355 Burrard St., Vancouver. To date — Director of Lewes River Mines Ltd. (NPL), Canyon City Explorations Ltd. (NPL) and Krueger Enterprises Ltd.
PAUL S. WHITE, Box 1888, Whitehorse, Y.T. Land Surveyor	Secretary- Treasurer and Director	Principal for White, Hosford & Impey, Land Surveyors, of Whitehorse, Y.T. 1963 to date — Director of Lewes River Mines Ltd. (NPL).
ROBERT J. KEEN, Fort Nelson, B.C. Mining Executive	Director	1963 to date — Contractor with Keen Construction, Dawson Creek, B.C.

REMUNERATION:

No remuneration has been payable or paid from the date of incorporation to the present with respect to any Director or Senior Officer of the Issuer as such and it is not intended that any remuneration will be paid in this respect in the coming year. However, reference in this regard should be had to the item "Material Contracts" on page 10 of this Prospectus.

PROMOTERS:

The Promoters of the Company are Egon B. Krueger and Robert J. Keen.

For particulars of the assets transferred by the Promoters to the Company and the cost to the Promoters thereof, refer to the heading, "Description of the Business and Properties of the Company" on page 4 of this Prospectus.

DESCRIPTION OF THE BUSINESS AND PROPERTIES OF THE COMPANY:

The Company intends to engage in the business of mineral exploration and development of its properties.

1. The Mineral Properties of the Company consist of the following:

(a) The Northwest Territories Group (36 claims):

NAME OF CLAIM	EXPIRY DATE	TAG NUMBERS
JRG 1-4 inc.	Oct. 20, 1970	A11327-A11329 inc.
JRG 5-18 inc.	Oct. 20, 1970	A11340-A11354 inc.
LOR 1-10 inc.	Oct. 20, 1970	A11330-A11339 inc.
LOR 11-18 inc.	Oct. 20, 1970	A11355-A11362 inc.

(all situate in the McKenzie Mining Division North of Arden Bay in the Northwest Territories and hereinafter referred to as the "Tin Group")

(b) Kirk Group (14 claims):

NAME OF CLAIM	EXPIRY DATE	TAG NUMBERS
Kirk 1 and 2	Aug. 11, 1973	18601-18602
Kirk 3	Aug. 11, 1975	18603
Kirk 4	Aug. 11, 1973	18604
Kirk 5-8 inc.	Nov. 8, 1973	19728-19731 inc.
Kirk 9 and 10	Nov. 8, 1972	19732-19733
Kirk 11	April 14, 1973	21943
Kirk 12-14 inc.	April 14, 1972	21944-21946 inc.

(c) The New Kirk Group (28 claims):

NAME OF CLAIM	EXPIRY DATE	TAG NUMBERS
Kirk 15-20 inc.	Nov. 5, 1970	34853-34858 inc.
Kirk 31-38 inc.	Nov. 5, 1970	34859-34866 inc.
Kirk 39	Nov. 5, 1971	34867
Kirk 40-48 inc.	Nov. 5, 1970	34868-34876 inc.
Kirk 53-56 inc.	Nov. 5, 1970	34877-34880 inc.

(d) The Nizi Creek Group (94 claims):

NAME OF CLAIM	EXPIRY DATE	TAG NUMBERS
Bob 1-10 inc.	April 14, 1970	21929-21938 inc.
Pete 11-14 inc.	April 14, 1970	21957-21960 inc.
Tom 1-4 inc.	April 14, 1970	21961-21964 inc.
Nizi 1-60 inc.	Mar. 27, 1970	36589-36648 inc.
Sun 1-4 inc.	July 31, 1970	39058-39061 inc.
Snow 1-4 inc.	July 31, 1970	39062-39065 inc.
Wind 1-4 inc.	July 31, 1970	39066-39069 inc.
Rain 1-4 inc.	July 31, 1970	39070-39073 inc.

The "Kirk Group", "New Kirk Group" and "Nizi Creek Group" (hereinafter jointly referred to as the "Liard Area Claims") are situate near the forks of the Nizi Creek and Fourmile Creek, eighteen miles South of McDame Post, on the Dease River, approximately one hundred miles south-west of Watson Lake, in the Yukon Territory.

ACCESS:

The "Tin Group", a uranium prospect, is reached by float-equipped craft or helicopter for a distance of about 200 air miles northwest of Yellowknife and 100 air miles south of Port Radium. A proposed highway which is now being used as a winter road, is located 15 miles due west of the property which could be used in the event of production.

The Liard Area Claims are reached by road through the use of four-wheel drive vehicles which are required to traverse the last 18 miles of tote road. There is also a 100-foot by 1,200-foot gravel air strip at the property which requires widening and lengthening for safe landings of light aircraft. The property is in Northern British Columbia approximately 125 miles southwest of Watson Lake, Y.T.

2. The Mineral Claims of the Liard Area Claims are held by location pursuant to the provisions of the Mineral Act of the Province of British Columbia. The "Tin Group" of mineral claims are held by location pursuant to the provisions of the Canada Mining Regulations governing mineral rights in the Northwest Territories.

3. (a) The "Tin Group" of mineral claims are held pursuant to an Option Agreement from Michael McCormick, businessman, of Vancouver, British Columbia, pursuant to which Agreement, title can be obtained by the payment of Twenty-Five Thousand (\$25,000.00) Dollars over three years;

(b) The "Kirk Group" of mineral claims was acquired from Egon Krueger and Boris Styba and North Central Mining Ltd. (NPL) for the sum of Sixty Thousand (\$60,000.00) Dollars, which was paid and satisfied by the allotment and issue of Six Hundred Thousand (600,000) Vendors shares at a deemed price of Ten (.10¢) Cents per share as follows:

Egon Krueger	200,000 shares
Boris Styba	200,000 shares
North Central Mining Ltd. (NPL)	200,000 shares

These claims were acquired by Robert J. Keen for the cost of staking in the approximate sum of \$1,500.00.

(c) The "New Kirk Group" of mineral claims was obtained by purchase from Egon Krueger and Boris V. Styba for Fifteen Thousand (\$15,000.00) Dollars paid and satisfied by the allotment and issue of One Hundred and Fifty Thousand (150,000) Vendors shares at a deemed price of Ten Cents (.10¢) per share as follows:

Egon Krueger	75,000 shares
Boris V. Styba	75,000 shares

These claims were acquired by Messrs. Krueger and Styba for the cost of staking which was repaid to them by the Company.

(d) The "Nizi Creek Group" of mineral claims was acquired by the Company at the cost of staking.

Of the 750,000 Vendors shares issued for properties, 31,250 Vendors shares have been deeded back to the Company for cancellation by way of gift in the following amounts:

SHAREHOLDER	NUMBER SHARES GIFTED BACK
Egon Krueger	12,500
Robert J. Keen	5,000
North Central Mining Ltd. (NPL)	13,750

All of the 275,000 Vendors shares issued to Boris V. Styba have been transferred to other shareholders and where any such single transfer amounted to five (5%) per cent of the total Vendors consideration, it is shown in the following:

George Redfern	114,250
Robert J. Keen	89,250

There is no persons, to the knowledge of the Company, who has received or is to receive from any Vendor greater than a five (5%) per cent interest in the shares or other consideration received or to be received by the Vendors.

4. Apart from the assessment work completed on the "Tin Group" of mineral claims by a previous owner of the property, there has been no underground or surface development carried out on the said properties. On the Liard Area Claims, approximately Thirty-Two Thousand (\$32,000.00) Dollars has been expended in carrying out the geochemical electromagnetic surveys, construction of an airstrip, bulldozer, trenching and building of a tote road. The Company owns no surface or underground development equipment except the following:

- One — D7E Caterpillar Tractor with ripper and blade
- One — 56 foot mobile Trailer Camp

5. The history of the "Tin Group" of mineral claims stems from the discovery in 1933, by Indians, of uranium bearing pitch-blend on the ridge north of the East Arm of Beaverlodge Lake. In 1934, claims were staked and two pits and a shaft were sunk on a small showing. Approximately one and a half tons of hand-sorted high grade material was sent to the Department of Mines of Ottawa for assaying. The claims having lapsed, they were restaked in 1943 along with additional claims and a program consisting of 2,005 feet of drilling, 900 feet of drifting and cross-cutting was carried out and then the project was abandoned and the claims reverted to the Crown. The present claims were staked in 1966.

There is no known history on the Liard Area Claims.

6. The present management has not carried out any work on the "Tin Group" of mineral claims but has expended \$4,672.00 assessment fees and on Engineering Reports.

7. For a description of the geological structures on the "Tin Group" and those of the Liard Area Claims, reference may be had to the geological reports of Orhan Baykal, P.Eng., P.Geol., dated May, 1969 and the report of E. D. Black, M.Sc., dated February 24, 1969, respectively, both reports being filed with the Superintendent of Brokers and forming part of this Prospectus. Insufficient work has been done to establish the existence of known ore reserves. The present Manager of the Company has conducted only sampling and surface prospecting examinations of the properties which is without a known body of commercial ore. The proposed program is to make exploratory search for ore.

USE OF PROCEEDS TO THE COMPANY

The Company proposes to use the proceeds of this issue, estimated at Two Hundred and Twenty-Four Thousand (\$224,000.00) Dollars, after deducting the commission payable and the expenses of the offering, to carry out the balance of the recommendations of Mr. E. D. Black, P.Geol., in his report dated February 24th, 1969, and the recommendations of Mr. Orhan Baykal, P.Eng., dated May, 1969, copies of which reports are filed with the Superintendent of Brokers and are attached hereto forming part of this Prospectus.

In Mr. Black's recommendations, an estimated budget of Two Hundred and Four Thousand (\$204,000.00) Dollars to be reduced by Six Thousand (\$6,000.00) Dollars for claim staking which has already been carried out will be required to complete the recommended work in his report.

In the following budget, priority will be given to the bulldozer work in connection with trenching and road construction with the diamond drilling program to follow as funds are available. None of the proceeds will be used from this issue to explore the "Nizi 1-60 inc. Group."

The proposed work will be conducted in accordance with the budget set out as follows:

RECOMMENDED 1969 EXPLORATION AND COST ESTIMATE:

BULLDOZER DRILL SUPPORT, TRENCHING ROAD AND AIRSTRIP WORK — 900 hours at \$25.00 (including fuel and operator)	\$ 22,500.00
DIAMOND DRILLING — BQ Wireline 4,500 ft. at \$20.00 (including camp support)	90,000.00
CLAIM STAKING — 60 claims at \$100.00	6,000.00
SEMI-DETAILED GEOCHEMICAL AND GEOLOGICAL SURVEY—110 Claims at \$150.00 (excluding claims surveyed and including camp support)	16,500.00
RECONNAISSANCE GEOCHEMICAL SURVEY — 200 line-miles at \$100.00	20,000.00
DETAILED I.P. GEOPHYSICAL SURVEYS — 30 line-miles at \$500.00 (including camp support)	15,000.00
	<hr/>
	\$170,000.00
MANAGEMENT, ADMINISTRATION, CONSULTING, TRAVEL, COMMUNICATIONS AND CONTINGENCIES (est'd. 20%)	34,000.00
	<hr/>
	TOTAL: \$204,000.00
(Less \$6,000.00 for claim staking already carried out)	6,000.00
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	TOTAL: \$198,000.00
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Mr. Orhan Baykal estimates a budget of Twenty-Five Thousand (\$25,000.00) Dollars for carrying out the following program:

- (1) Geological completion of the unmapped area south of location 7 (figure 3).
- (2) Detailed investigation and evaluation of the uranium occurrences. This exploration work will consist mostly of trenching by blasting.

The cost of the above outlined program can be estimated to be \$25,000.00.

If the results obtained from this exploration warrants further work, a drilling program could be initiated in the areas where the best uranium shows have been encountered. There are enough indications within the "Tin Group" of claims to indicate that once qualified, the cost of this initial

drilling program can be anticipated to be \$70,000.00 or over depending on the depth of the holes and the number of shows to be drilled.

No part of the proceeds shall be used to invest, underwrite, or trade in securities other than those qualified as investments in which trust funds may be invested under the laws of the jurisdiction in which the securities offered by this Prospectus may lawfully be sold.

Should the Company propose to use the proceeds to acquire non-trustee type securities after the initial distribution of the securities offered by this Prospectus, approval by the shareholders must be obtained and disclosure made to the regulatory securities bodies having jurisdiction over the sale of the securities offered by this Prospectus.

INCORPORATION WITHIN ONE YEAR — PRELIMINARY EXPENSES:

The Company incurred expenses in connection with its incorporation in the amount of \$1,796.69, representing \$325.00 legal fees and \$1,471.69 disbursements, which sum has been paid in full. Other preliminary expenses involving the engineering report amount to \$6,988.01, which sum has been paid in full. It is not expected that any further monies will be expended on preliminary matters.

ESCROWED SHARES — (as of November 15, 1969):

Designation of Class	No. of Shares Held in Escrow	Percentage of Class
COMMON SHARES	718,750	51.5

The above-mentioned shares are held by Canada Permanent Trust Companies, 455 Granville Street, Vancouver 2, B.C., pursuant to the terms of an Agreement in writing between the relevant shareholders and Canada Permanent Trust Companies. Under the terms of this Escrow Agreement, 718,750 shares are subject to release or transfer only with the written consent of the Superintendent of Brokers for the Province of British Columbia. If the Company loses, abandons or discontinues the development of the mineral properties for which the 718,750 shares were allotted, or if the said mineral properties are subsequently found to be not as represented herein, the Superintendent of Brokers may require the surrender by way of gift to the Company for cancellation, such number of the above shares as he, in his sole discretion deems fair and equitable.

By Pooling Agreements in writing between the relevant shareholders and Egon Krueger, Esq., all of the 675,002 shares issued for cash are held in pool until thirty days after completion of the primary distribution and will not be released without the consent of the Superintendent of Brokers.

PRINCIPAL HOLDERS OF SECURITIES:

The table below shows all those who own more than ten (10%) percent of the Common shares of the Company as at October 31st, 1969:

Name and Address	Designation of Class	Type of Ownership	No. Shares Owned	Percentage of Class
Egon B. Krueger, #403 - 2180 Argyle Ave., West Vancouver, B.C.	COMMON	Beneficial	311,000	22.3
Robert J. Keen, Fort Nelson, B.C.	COMMON	Beneficial	249,250	17.9
North Central Mining Ltd. (NPL)	COMMON	Beneficial	236,250	16.9

The percentage of greater than five (5%) per cent equity shares of North Central Mining Ltd. (NPL) are as follows:

Robert J. Keen, Fort Nelson, B.C.	52%
Robert Kirk, Watson Lake, Y.T.	24%
Earl Brown, Fort St. John, B.C.	24%

The percentage of equity shares of the Company owned by the Directors or Senior Officers directly or indirectly is shown on the table below:

Designation of Class	Percentage of Class
COMMON	60.3

PRIOR SALES:

Within the past Twelve (12) months prior to the date of this Prospectus the Company has sold 366,500 treasury shares at .10¢ per share, 308,500 treasury shares at .20¢ per share and 2 treasury shares at \$1.00 per share to net the Treasury \$98,352.00. No commission has been paid on the sale of any shares to date.

The holders of the 675,002 shares subscribed for, have entered into an Agreement with the Canada Permanent Trust Companies of 455 Granville Street, Vancouver B.C., to pool and refrain from selling the 675,002 shares referred to for the period of primary distribution of the shares of the Company offered hereby and for 30 days thereafter and the consent of the Superintendent of Brokers for British Columbia.

MATERIAL CONTRACTS:

The Company has entered into no material contracts within two years prior to the date of this Prospectus, that have not been otherwise disclosed in this Prospectus, except the following:

A Management contract with Krueger Enterprises Ltd. for the sum of \$500.00 per month for administration and field Supervision. To date, \$4,500.00 has been paid in this connection.

The only shareholder holding more than five (5%) per cent of the outstanding shares of Krueger Enterprises Ltd., is Egon Krueger.

OTHER MATERIAL FACTS:

There is no other material fact not declared under any other provision of this Prospectus.

AUDITORS:

The Auditor of the Company is: Mr. Bock W. Yip,
Chartered Accountant,
Ste. #410 - 355 Burrard St.,
Vancouver, B.C.

CERTIFICATE:

The foregoing constitutes full, true and plain disclosure of all material facts relating to the securities offered by this Prospectus as required by Part VII of the Securities Act, 1967, and the Regulations thereunder.

DATED this 15th day of December, AD. 1969.

" EGON B. KRUEGER "
Director, President and Promoter

" PAUL S. WHITE "
Director and Secretary-Treasurer

" ROBERT J. KEEN "
Director and Promoter

**GEOLOGICAL REPORT
ON THE
KIRK PROPERTIES
McDAME CREEK AREA
N.E. BRITISH COLUMBIA**

SUMMARY

The Kirk prospect comprises a group of 60 mining claims in the Cassiar Mountains of Northeastern B.C. This property has recently been acquired by Cry Lake Minerals Limited.

The property is situated approximately 100 miles from Watson Lake, Y.T., and is accessible by four-wheel drive vehicle, helicopter or wheel-equipped light-bush aircraft.

Since the initial staking in 1966, physical work has included bulldozer construction of an 18-mile access road from McDame Post to the property, preparation of a 1,200 x 100 foot gravel airstrip with in 1,000 feet of the original showings, and limited trenching over the mineralized outcrops.

Complete technical work includes generalized outcrop mapping, a detailed semi-quantitative geochemical survey and a detailed electromagnetic geophysical survey, all carried out by Metals, Petroleum and Hydraulic Resources Consulting Limited in 1967; and, a detailed induced polarization geophysical survey carried out by Seigel Associates Limited in 1968.

The original mapping and outcrop sampling located four zones of mineralization within a radius of approximately 3,000 feet, mainly within Kirk claims Nos. 1, 4 and 6. The known mineralization comprises varying amounts of pyrite, chalcopyrite and sphalerite, with minor galena and malachite; and occurs in steeply dipping silicified and carbonized shear zones in volcanic rocks of Upper Devonian or Mississippian Age.

In a carbonate shear zone (Showing No. 1) in Kirk claim No. 1 assays of 0.79% copper, 4.28% zinc and 1.30 ounces of silver (per ton) have been obtained over a width of 30 feet. Nearby, in Kirk claim No. 4, a silicified shear returned assay values of 7.24% copper and 2.98 ounces of silver per ton across a width of 4 feet. Values of the same order of magnitude as the former were obtained in two other zones.

The geochemical and electromagnetic surveys outlined coincidental anomalous conditions extending over a strike length of 800 feet from the principal (No. 1) showing. Corresponding anomalous zones have been picked up in surrounding areas but are inadequately delineated because of the restricted survey coverage.

Seigel's recently conducted induced polarization survey located and outlined a complex conductive zone from 100 to 1,000 feet in width and up to 4,400 feet in length. At least part of this I.P. anomaly coincides with the original E.M. and geochemical anomalous zones. The main part of the I.P. anomaly is approximately 800 feet wide and 2,000 feet in length. Strong conductivity has been experienced from 25 feet below surface to a depth of at least 300 feet, i.e. the depth limits of the detailed survey.

The I.P. anomaly is principally in an overburden covered area; and, for this reason, the nature of the conducting material is not known. Because of the presence of known mineralization and apparent continuity between the I.P. conductive zone, the E.M.-geochem anomaly and the mineralized outcrop area, there is a strong suggestion that the I.P. conductor could represent an important zone of sulphide mineralization.

Initially, a winter and spring exploration program including 4,500 feet of BQ wireline diamond drilling and 900 hours of bulldozer support and trenching is recommended to test and evaluate the I.P. anomaly and surrounding showings. It is further recommended that an additional 60 claims be added this winter to cover adjacent areas of interest. Should the winter operation prove encouraging a summer followup semi-detailed geochemical survey is recommended over the 60 existing and 60 planned claims (excluding the 10 claims already surveyed; 200 line-miles of prospecting and a reconnaissance geochemical survey are recommended along the twenty-mile tote-road, in search of other potential mineralization zones, and finally, 30 line-miles of additional I.P. survey work are contemplated to detail extensions of the existing (fringe) I.P. anomalies and to check out all new geochem anomalies found within the claims group.

This integrated exploration program will require a period of approximately nine months to complete and is estimated will cost approximately \$204,000. The drilling phase will represent \$90,000 or almost 50% of the recommended budget.

RECOMMENDED 1969 EXPLORATION PROGRAM AND COST ESTIMATE

DIAMOND DRILLING —	
BQ Wireline 4,500 ft. at \$20 (including camp support)	\$ 90,000
BULLDOZER DRILL SUPPORT, TRENCHING ROAD AND AIRSTRIP WORK —	
900 hours at \$25 (including fuel and operator)	22,500
CLAIM STAKING —	
60 claims at \$100.00	6,000
SEMI-DETAILED GEOCHEMICAL AND GEOLOGICAL SURVEY —	
110 claims at \$150 (excluding claims surveyed and including camp support)	16,500
RECONNAISSANCE GEOCHEMICAL SURVEY —	
200 line-miles at \$100 (including camp support)	20,000
DETAILED I.P. GEOPHYSICAL SURVEYS —	
30 line-miles at \$500 (including camp support)	15,000
MANAGEMENT, ADMINISTRATION, CONSULTING, TRAVEL, COMMUNICATIONS AND CONTINGENCIES (est'd. 20%)	\$ 170,000 34,000
TOTAL	\$ 204,000

Toronto, Ontario
February 24, 1969

" E. D. Black, M.Sc. "

INTRODUCTION

PROPERTY

The Kirk Prospect comprises a group of 60 unpatented contiguous mining claims in the Liard Mining Division of Northeastern British Columbia.
Included in the group are the following claims:

Kirk 1 - 4 (18601/04)D	Bob 1 - 10 (21929/38)B
Kirk 5 - 10 (19728/33)B	Pete 11 - 14 (21957/60)D
Kirk 11 - 12 (21943/44)D	Tom 1 - 4 (21961/64)D
Kirk 13 - 14 (21945/46)D	Kirk 39 - 48 (816947/56)
Kirk 15 - 20 (951001/06)	Kirk 53 - 56 (816961/64)
Kirk 31 - 38 (951017/24)	

LOCATION

The property is situated near the forks of Nizi Creek and Fourmile Creek, eighteen miles south of McDame Post. McDame Post is on the Dease River four miles south of the Cassiar Mine Road approximately 100 miles southwest of Watson Lake, Y.T.

ACCESS

The claim group can be reached by road or air from Watson Lake.

By road a four-wheel drive vehicle is required to manipulate the last 18 miles over the tote-trail. There is no bridge over the Dease River. However, this river can be crossed by ice bridge in the late winter or forded during the low water period in the late fall or early winter.

A rough 100-foot by 1,200 foot gravel airstrip exists at the prospect end of the tote trail. This strip, which is usable in an emergency, requires widening and lengthening for safe landings with light-wheel or ski-equipped aircraft.

The property is readily accessible by helicopter.

RESOURCES

The prospect area is well forested with mature stands of pine and aspen, some of which could be used for construction, mine timbering and fuel purposes should the need arise.

Gravel is abundant in the valley near the mineralized showings but tends to be coarse and bouldery on part of the airstrip. Road building from the Cassiar road to the property would not be difficult or prohibitive from a cost standpoint.

No hydro-electric power is available in the area and any mine development would have to rely on a diesel-driven generator as a source of electrical power.

A liberal supply of water is available from the nearby streams such as Nizi Creek and Fourmile Creek. The density of local vegetation suggests that rainfall is plentiful. It is expected therefore that the local creeks contain a good flow of water from 6 to 9 months of the year.

A small body of water lies within 1,500 feet of the airstrip and 900 feet of the main mineralization showing. This pond could easily supply all the water that might be needed for drilling or overburden hydraulicing.

HISTORY AND PROPERTY OWNERSHIP

The property was first staked by Robert (Bob) Kirk of Watson Lake, and held jointly by Mr. Kirk and Mr. Robert Keen of Dawson Creek, B.C.

Until recently all of the claims were held in the name of North Central Mining Limited, a private company owned by Robert Keen.

In 1968 twenty-eight of the original group of 60 claims lapsed. These have been restaked by A. Mercier of Watson Lake.

Finally, very recently Cry Lake Minerals acquired 32 of the original claims through agreement with North Central Mining Limited and the remaining 28 claims by agreement between A. Mercier, B. V. Styba and E. B. Krueger and subsequently transferred to Cry Lake Minerals Limited directly.

WORK COMPLETED AND ESTIMATED EXPENDITURE TO DATE

It has been estimated that a total of approximately \$32,000 has been expended on this property for various physical and technical work carried out to date. This represents an estimated \$20,000 on road, airstrip and trenching work and \$12,000 for geological, geochemical and geophysical surveys.

GEOLOGY

GENERAL SETTINGS

According to the regional geological picture described by geologists of the Geological Survey of Canada, the Kirk prospect lies within an area generally considered to be underlain by sedimentary and volcanic rocks of Upper Devonian or Mississippian Age. These host rocks flank younger intrusive granitic rocks of the Cassiar Batholith along its eastern margin and mark the front of the Cassiar Mountain range.

LOCAL GEOLOGY

Locally, the showings occupy strong parallel to subparallel shears in volcanic rocks within a mile or two of the eastern contact between the Cassiar granite and the intruded sedimentary and volcanic sequence.

The shears comprise irregular to tabular, silicified or carbonatized dyke-like bodies. Their trend is generally northwest southeastward with steep northerly to near vertical dips.

Five separate mineralized outcrops occur within a radius of 3,200 feet. These are illustrated on the attached sketch map (plate 2) which shows their relative locations, attitudes and points of sampling.

The mineralization is variable from one zone to another but comprises essentially a mixture of the sulphides of copper, lead, zinc and iron.

Pyrite, chalcopyrite and sphalerite predominate; galena is present but generally scarce. Considerable malachite surface staining is also visible in places. Both the sphalerite and galena are almost entirely missing in several of the mineralization zones, particularly in the silicified shears.

DESCRIPTION OF MINERALIZATION

Showing No. 1

A very strong mineralized shear zone in carbonitized andesite. Sulphides occur across the full width of the shear in varying amounts, from as little as 5 - 10% to as much as 50% by volume of the mineralized rock.

The exposure is well displayed on the face of a steep outcrop bluff 30-50 feet high. The vertical exposure being measured from the bulldozed road at the base of the outcrop face to the bush and overburden cover at the crest of the rock ledge.

Considerable overburden and some sloughed-in spoil banks on the side of the road-cut cover most of the exposure area at the base of the outcrop slope. Fifteen feet up-slope, however, a good view of the mineralization is available and at this point a continuous sample was obtained over a measured 30 foot width (21 feet in true thickness). The 30 foot width would be a minimum since the footwall was covered by overburden and the full width was not observed or sampled. Assays across this 30 foot section (Sample No. 1) ran 0.79% Cu, 0.22% Pb, 4.28% Zn, 1.30 oz/ton Ag and a trace of gold.

Up slope another 15 feet the zone narrows to 10 feet in true thickness. Here a sample taken across a measured 12 foot width (Sample No. 2) contained 1.30% Cu, 0.34% Pb, 5.50% Zn and 1.44 ounces Ag — no gold was detected in this sample.

A further 10-15 feet up the slope the zone is erratically exposed at the edge of the soil and tree cover. No meaningful sample could be recovered from this point of final exposure.

Bob Kirk stated that the mineralization zone widened rapidly to 60 feet or more at its lowest point, i.e. where the bulldozer had made the road-cut. While this could not be confirmed, there is strong evidence of a rapid downward widening of the mineralized zone. This pyramiding effect of the mineralized zone is well supported by the increase in width between Samples No. 1 and No. 2. Also, it seems reasonably evident from the width of the visible sulphide bearing debris in the road-cut that the zone is wider at the road level (the lowest point) than it is 15 feet up the face, i.e. at the point where sample No. 1 was taken.

Showing No. 2

At a point approximately 200 feet south of Showing No. 1 a narrower mineralized shear, roughly parallel to Showing No. 1, lies exposed along the same outcrop face. This is a silicified steeply dipping dyke in the same volcanic rocks. It differs from Showing No. 1 in that it contains a preponderance of pyrite and chalcopyrite as the main sulphide materials.

The best and widest exposure of this zone is in the bulldozed road-cut at the base of the slope. Here, a measured five-foot width was sampled. Assay results gave the following contained metals:-

Copper	—	0.94%
Lead	—	0.12%
Zinc	—	0.96%
Silver	—	2.14 ounces
Gold	—	Nil

The No. 2 shear zone also shows signs of narrowing eastward along strike and upward in the direction away from the dip. At the ridge top, approximately 35 feet from the road-cut exposure, the mineralization zone splits into two 2-foot shears separated by a 2 to 3 foot band of waste rock. Here again, as in the case of Showing No. 1 the zone appears to become wider with increasing depth and/or in the westerly strike direction.

Showing No. 3

Heavy sulphide mineralization occurs in a partially stripped outcrop exposure 600 feet east of Showing No. 1. Although Showings No. 1 and No. 3 do not appear to be directly related their alignment along the same general strike direction suggest continuity or related shearing.

The No. 2 showing comprises a one-foot thick layer of massive chalcopyrite and pyrite bounded on either side by one and one-half feet of mineralized wall-rock. A rough east-west strike and steep (65°) northerly dip is apparent, but no more than 8 feet of strike length is visible because the east end is truncated by a southeast trending cross-shear and the west end disappears below the overburden cover.

Metal values in this zone were measured across a four-foot section (Sample No. 4) and gave the following assay results:

Copper	—	7.24%
Silver	—	2.98 ounces
Gold	—	Nil

No lead or zinc assays were run because of no noticeable amount of sphalerite or galena were evident in the mineralized rocks from this showing.

Showing No. 4

On a southwesterly facing slope of a forested hill 3,200 feet to the north of Showing No. 1 a small exposure of sulphide rubble and outcrop occurs some 100 feet up-slope from the end of the bulldozer trail.

At this point, two mineralized outcrops, each approximately two feet in width, are exposed 10 feet apart on the hillside. These were taken as combined samples because of their obvious low sulphide content.

This zone resembles Showings No. 3 and No. 4, in that it is comprised of silicified volcanics containing considerable pyrite and notable amounts of chalcopyrite. Assays for the combined four foot section of mineralization — excluding the intermediate ten-foot band of waste — contained 0.66% Cu and 0.18 ounce silver. No gold was detected.

This showing is of interest only because it lies along the same general strike trend of Showings No. 1 and No. 3 and suggests a rather extensive distribution of mineralization in the general prospect area.

Table 1
RESUME OF SAMPLE ANALYSIS

Showing No.	Sample No.	Dip Angle	Width	Thickness	Cu %	Pb %	Zn %	Ag Oz/Ton	Au Oz/Ton
1	1	75°	30 ft	21 ft	0.79	0.22	4.28	1.30	Tr.
1	2	75°	12 ft	10 ft	1.30	0.34	5.50	1.44	Nil
2	3	60°	5 ft	5 ft	0.94	0.12	0.96	2.14	Nil
3	4	65°	4 ft	4 ft	7.24	N.A.	N.A.	2.98	Nil
4	5	90°	4 ft		0.66	N.A.	N.A.	0.18	Nil

(two 2-ft zones)

Note: N.A. means not assayed

GEOCHEMICAL SURVEY

SCOPE

During the last two weeks in October and first week of November 1967, a geochemical survey was carried out over the area of the original showings to determine the distribution of basemetals in the soils and search for buried extensions to the known mineralized zones. Claims involved in this work were Kirk Nos. 1, 2, 3, 4, 5 and 6.

A total of 3,100 feet of grid line was surveyed with soil sampling at 50 foot intervals, 22,400 feet of line with sampling at 100-foot intervals, and 49,300 feet of line with sampling at 200-foot intervals. The approximate total area covered by this survey was 1/8th square mile, i.e. 1/4 mile by 1/2 mile.

EQUIPMENT AND TECHNIQUE

The geochemical method used was the standard dithizone cold extraction colorimetric technique. A mogensen Trail Kit was used for this survey. Total heavy metal content of the soil at sample points was estimated in parts per million by color chart comparisons.

RESULTS

Results of this survey showed a broad pattern of anomalous base-metal values in the vicinity of the showings and lying to the west of Pond Lake (see Plate 4). Here a generally anomalous area having a basemetal content in excess of 50 ppm covers a zone approximately 900 feet by 1,200 feet. Within this area of above background metal content a zone of medium intensity (100-150 ppm) covers an area of 800 feet by 100 - 500 feet. This produces an outline of what appears to be a continuous zone of mineralization from Showing No. 1 to Pond Lake. The trend of this zone being northwest-southeast. A series of higher values (i.e. above 150 ppm), along the same general trend, forms the central core of this anomalous zone.

A separate medium-range geochemical anomaly also occurs within the general area of above-background values. This zone lies some 500 feet to the northeast of Showing No. 1.

To the east of Pond Lake another irregular area of low to medium range base-metal values has been outlined on a local hillside. This area measures roughly 700 feet by 200 - 400 feet. Also, some 400 feet to the northeast of this hillside zone, two separate medium range anomalies (100 - 150 ppm) trend eastward along a 1,600 foot by 200 foot zone. These two anomalous areas are each approximately 600 feet in length.

CONCLUSIONS AND RECOMMENDATIONS

The geochemical survey proved to be a practical and effective method of prospecting overburden covered areas. Only six claims of the original 56-claim group were involved in this phase of the work but the method was so effective that it is recommended for the balance of the property and the accessible areas along the tote-trail, from Dease River to the present claim group. It is estimated that some 50 line-miles of semi-detailed geochemical work will be required within the existing claims, a further 60 line-miles of similar coverage within the planned new claims, and approximately 200 line-miles of reconnaissance geochemical work along the tote trail.

GEOPHYSICAL E.M. SURVEY

SCOPE

To further evaluate the prospect in 1967, a ground E. M. geophysical survey was conducted over the central part of the main geochemical anomaly west of Pond Lake, on claims Kirk Nos. 1, 2, 3, 4, 5 and 6.

Ten traverse lines each approximately 1,200 feet long and 100 to 200 feet apart were surveyed at 50 ft. station intervals with a Ronka 16 E.M. unit. Total coverage was 12,700 linear feet. The results of this work appear on the accompanying geophysical plan (Plate 5) and profiles (Plates 6 - 15).

EQUIPMENT AND TECHNIQUE

The Ronka E.M. 16 is a reconnaissance ground electromagnetic instrument capable of detecting and measuring a vertical secondary electromagnetic field produced by a conductor when it is threaded by a horizontal primary electromagnetic field. The primary field used in the present work is the U.S. Naval communication signal NPG from Seattle, Washington. Other stations such as Maine and Hawaii did not prove suitable in this remote northern area.

RESULTS

By virtue of the alignment of various anomalies encountered on the separate traverse lines two distinctive conductive zones have been outlined. One of these is a 1,100-foot long northwest-southeast trending conductor which coincides well with the main part of the geochemical "high" that runs between Showing No. 1 and Pond Lake. The other is a parallel 800-foot long conductor that follows the same trend through the south end of the Lake.

Time did not permit further geophysical work over the remaining geochemically anomalous areas to the east and northeast of Pond Lake.

CONCLUSIONS AND RECOMMENDATIONS

The equipment and technique proved sufficiently satisfactory to warrant recommending its future use for base-metal prospecting in this area. It would now appear, however, that a combination of geochemical work and I.P. geophysical followup might have better and perhaps more reliable results. The Ronka E.M. 16 still has an important use in this area, specifically in the search for small high-grade mineral occurrences. No further E.M. 16 surveys are recommended on or about the property at this time.

GEOPHYSICAL I.P. SURVEY

SCOPE

During the period from October 20 to November 4, 1968 a geophysical party from Seigel Associates Limited, under the direction of Mr. Francis Bourqui, carried out an induced polarization survey over all of Kirk claims Nos. 1 - 10, and part of Kirk claims Nos. 28 and 30 (the latter two now being Bob 9 and Kirk 32).

Detailed results of this survey are to be found in a report by Jon G. Baird, dated November 25, 1968 and included as an appendix to the present report. To summarize the technique used it is sufficient to note that a three-electrode array was used at 200-foot intervals on lines spaced at 400-feet along a 6,000 foot baseline. Three-electrode spacing was also used at 300', 200', 100', 50' and 25' intervals for further detailing in certain localities.

EQUIPMENT

Baird reports the use of a Seigel MK VI time domain (pulse-type) induced polarization unit. The transmitting unit having a rating of 2.5 KW and equal on-off times of 2.0 seconds. For other details see Baird's report which is included as an appendix to the present report.

RESULTS

Several zones of chargeability response i.e. (I.P. anomalies) have been noted in the survey area. Principal of these is a zone of above normal chargeability and low resistivity in the east central part of the area, that is within Kirk claims Nos. 5, 7, 8, 9 and 10. This anomalism is indicative of metallicly conductive material. The principal part of the conductive zone measures approximately 800 feet by 2,000 feet but narrower zones of lower conductivity show additional I.P. response for an overall length of 4,400 feet. The western extremity of the weaker conductive zone reaches into the zone of E.M.-Geochem anomalism to the west of Pond Lake.

General characteristics of the main I.P. anomaly have led Baird to conclude that the conductive zone is probably metal bearing, steeply dipping and composed of several layers or lenses of conductive material with northwest strike. Whatever the conductive material the close spaced detailed I.P. work in the central part of the principal anomaly indicates its extent from 25 feet below surface to a minimum depth of 300 feet. The upper limit is likely the base of the overburden layer.

CONCLUSIONS AND RECOMMENDATIONS

In view of the size and nature of this 'textbook-type' I.P. anomaly and the presence of known sulphide mineralization in structural continuity with the conductive zone, it seems logical to suggest that the I.P. anomaly could represent an important sulphide deposit within reach of surface mining. The moderately high copper-lead-zinc and silver content of nearby outcropping mineralization makes the I.P. anomaly doubly important because of the possibility that the conductive zone could represent a large deposit of mineralization of this type and grade.

With these possibilities in view it is recommended that a winter drilling program be planned, budgeted and launched as soon as practical.

It has been suggested by Baird that two diamond drill holes totalling 900 feet would adequately test the I.P. anomaly. While it is agreed that this approach would represent a valid test of the anomaly it is not considered a wise exploration approach to limit the drilling to such an extent. Accordingly a program of 4,500 feet of diamond drilling is recommended. This will provide adequate footage to test and evaluate the I.P. anomaly, with a reserve of footage to check other conductive zones and the various showings of known mineralization.

Finally, as a means of renovating and improving the tote-road and air-strip and to support the drilling and carry out exploratory surface trenching, it is further recommended that a total of 900 hours of bulldozer (D6 or D7) time be allotted to the project for the winter and summer operations.

CERTIFICATE

I, E. D. Black, of Suite 1510, 100 Adelaide Street West, Toronto, Ontario, certify that: —

- 1) I graduated from McGill University in Montreal in 1958 and hold a degree of Master of Science in Geology.
- 2) I am a member of the Geological Association of Canada, and have practiced my profession for twelve years.
- 3) I have based my Summary and Recommendations on my experience, on knowledge gained during a visit to the property in July of 1967, on the results obtained by staff geological personnel who carried out the geochemical and geophysical work cited in this report and on study of the geophysical report by Seigel Associates Limited which has been included as an appendix to the present report.
- 4) I hold no interest directly or indirectly in this property or the Companies mentioned in this report and I do not expect to receive any such interest.

Toronto, Ontario
February 24, 1969

" E. D. BLACK, M.Sc."

I, W. J. Riddell, P.Eng. of Suite 1510, 100 Adelaide Street West, Toronto, Ontario, certify that:

- 1) I am a graduate of Queen's University in Kingston, Ontario and hold a degree of Bachelor of Science in Mining Engineer.
- 2) I am a resident member of the Association of Professional Engineers of Ontario and a non-resident member of the Association of Professional Engineers of British Columbia. I have practiced my profession for a total of eighteen years.
- 3) I have examined the report of Mr. E. D. Black and Mr. Jon Baird and examined the results of the field work conducted by Mr. G. R. Ferrill. I consider that Mr. Black's report is a valid evaluation of the property and that the recommended exploration programme is a reasonable proposal for further exploration on the property. I have not personally examined in the field the claims held by Cry Lake Minerals Ltd.
- 4) I hold no interest directly or indirectly in the property nor do I expect to receive any interest directly or indirectly in the property or in the companies referred to in the report.

Toronto, Ontario, Canada
August 5, 1969

" W. J. RIDDELL, P.Eng."

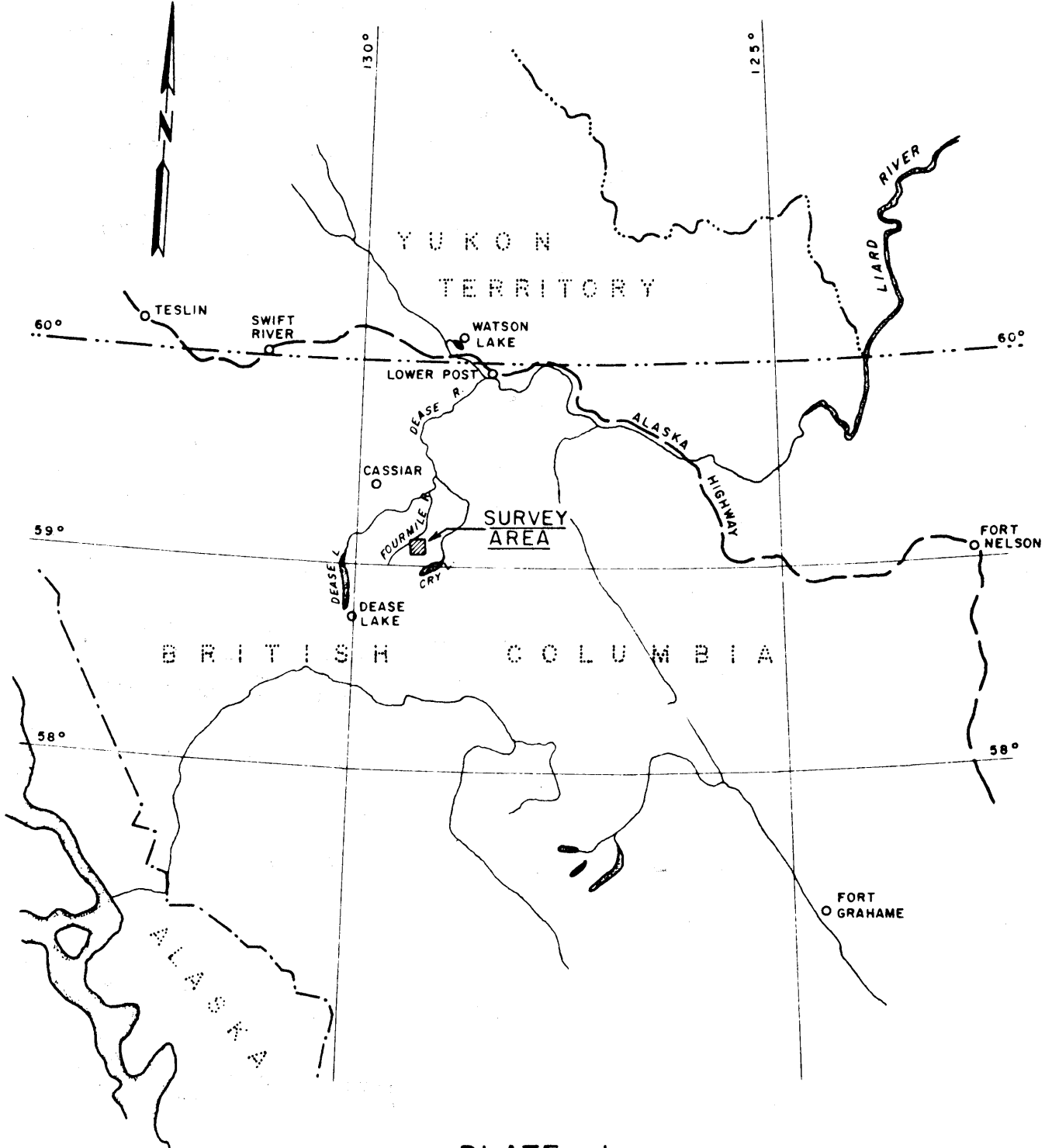
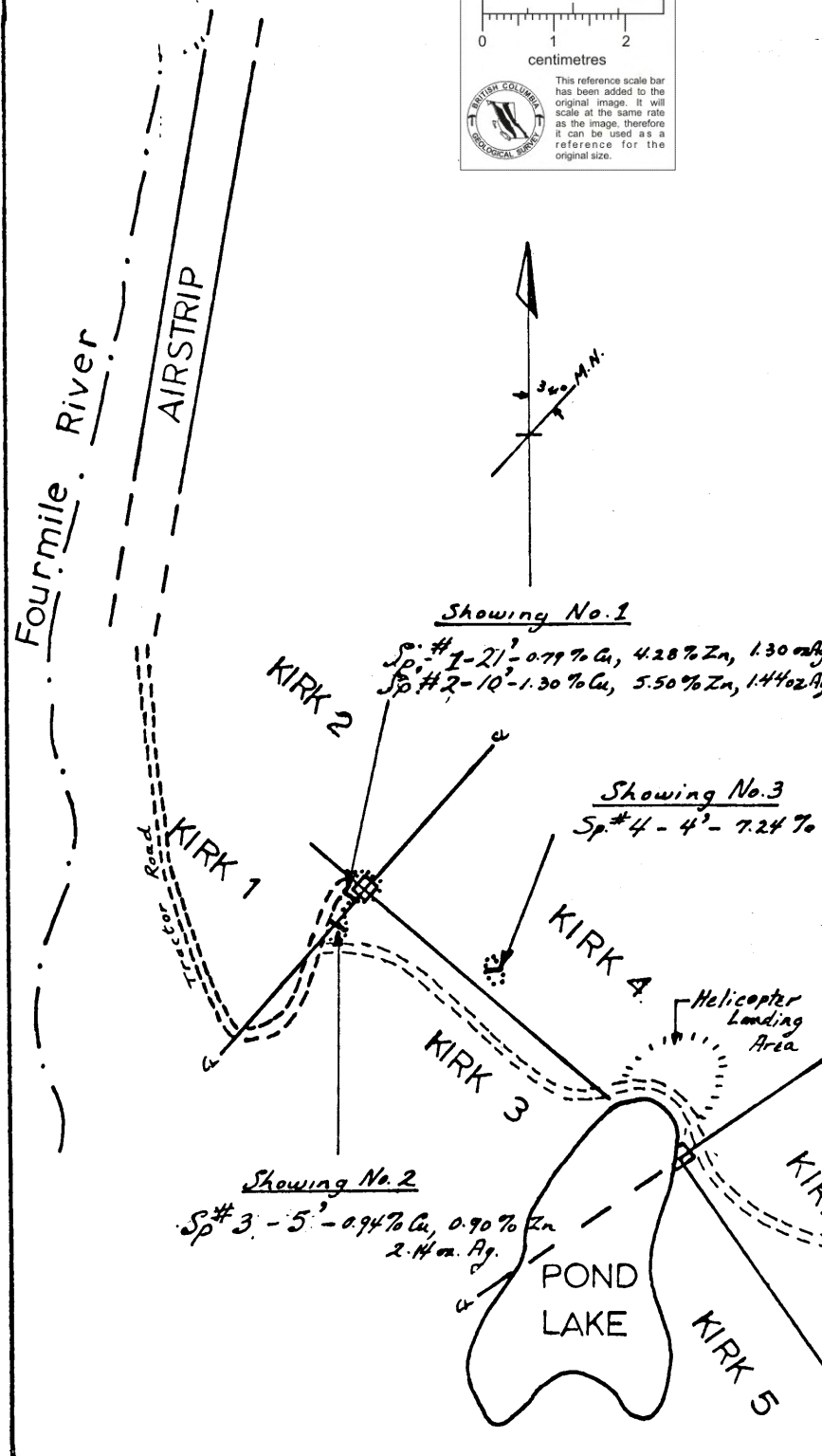
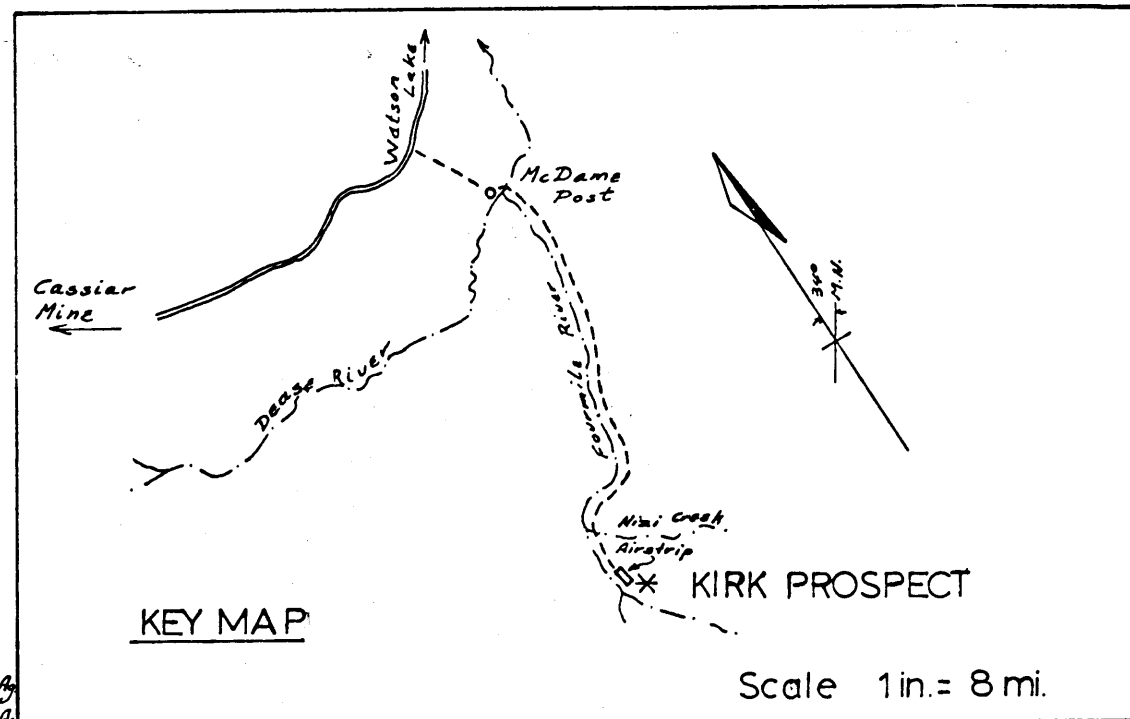
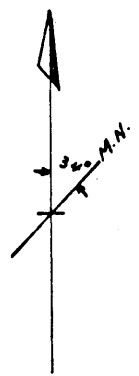
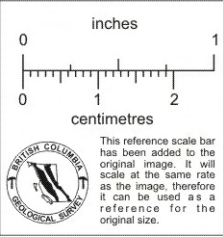


PLATE I
CRY LAKE MINERALS LTD.
 CASSIAR AREA, BRITISH COLUMBIA
LOCATION PLAN

SCALE: 1 INCH = 63.13 MILES
 SURVEY BY SEIGEL ASSOCIATES LIMITED
 NOVEMBER 1968





Legend

- Showing of base-metal minerals in outcrop.
- Claim corner.

metals petroleum & hydraulic resources consulting limited		
map showing		
OUTCROPS & SAMPLES		
KIRK PROSPECT		
McDame Creek Area		
Northeastern B.C.		
By-EDB.	JOB No.	Plate 2
Scale 1 in. = 500 ft	C-9	Date Dec. 67

E.D. Black.

metals petroleum & hydraulic
resources consulting limited

map showing

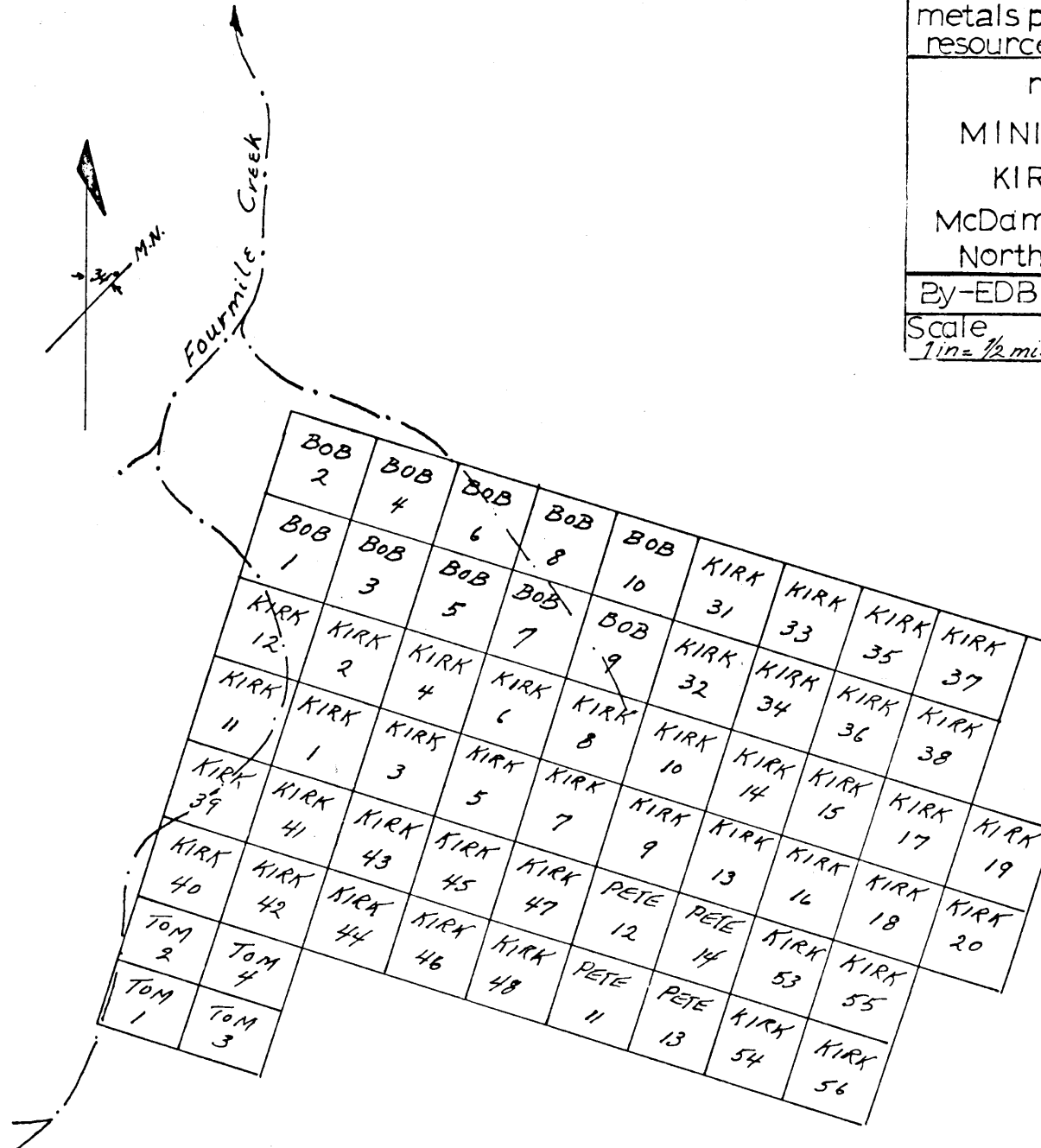
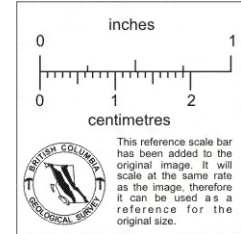
MINING CLAIMS

KIRK PROSPECT

McDame Creek Area

Northeastern B.C.

By-EDB	JOB No. C-9	Plate 1
Scale 1 in = 1/2 mi.		Date DEC. 68



- after Map supplied by Gydate Minerals Limited Dec. 1968.

E.D.B.

**GEOLOGICAL REPORT
ON THE
TIN MINERAL CLAIMS
BEAVERLODGE LAKE - HOTTAH LAKE
N.W.T.**

INTRODUCTION:

This report has been written for the purpose of assessing the geological and mineralogical possibilities of the Tin group of mineral claims located in the Hottah Lake - Beaverlodge Lake area, N.W.T.

The field work was done by the writer in July of 1967. The area was geologically mapped and the pitchblende occurrences were investigated. The drilling and underground works performed on the adjacent mineral claims, known as the Atom group, were also taken into consideration, and the property was assessed and re-interpreted in the light of data obtained during this recent survey.

RECOMMENDATIONS:

The Tin mineral claims are favourably located in metallogenetic province where deposition of pitchblende is known to have taken place. The geological setting and mineralogical possibilities of the claims are such that an economic deposit may possibly take place along the major and subsidiary faults that are present in this area.

Based on data obtained during the field work and on the considerations outlined above the following programme can be recommended for the Tin mineral claims:

- (1) Geological completion of the unmapped area south of location 7 (figure 3).
- (2) Detailed investigation and evaluation of the uranium occurrences. This exploration work will consist mostly of trenching by blasting.

The cost of the above outlined programme can be estimated to be \$25,000.

If the results obtained from this exploration warrants further work, a drilling programme could be initiated in the areas where the best uranium shows have been encountered. There are enough indications within the Tin claims to indicate that once qualified, the cost of this initial drilling programme can be anticipated to be \$70,000 or over depending on the depth of the holes and the number of shows to be drilled.

ACCESSIBILITY:

The map-area is about 200 air-miles northwest of Yellowknife and 100 air-miles south of Port Radium. Aircraft on floats is the only practical means of transportation to the site. (Figure 1).

A proposed highway, which is now being used as a winter road, is located 15 miles due west of the property. This road could be used in the event of production.

HISTORY OF THE PROPERTY:

Uranium was discovered in this area in 1933. In the autumn of that year, Indians had found pitchblende on the ridge north of the East Arm of Beaverlodge Lake. In January of the following year D'Arcy Arden and E. H. Hargraves staked the Tatee and Bee Claims. Following this staking the Hottah Lake Mines Limited was formed. Subsequently, two pits were dug to explore the uranium occurrences (Location 3, Figure 3) and a shaft was sunk on a small showing. Pitchblende was not found beneath the small surficial lenticular body and after deepening the shaft to 60 feet the work was discontinued. The land was allowed to revert to the crown.

The ore obtained from the pits was hand sorted and 1½ tons of it was shipped to the Department of Mines in Ottawa. The ore there, was divided into five lots which assayed respectively: 48.4%, 38.4%, 52.4%, 22.1%, and 41.1% U₃O₈.

The grounds were re-staked in April 1943, by the Cormac Group. This staking consisted originally of 6 claims which was increased to 26 claims covering all the quartzite outcrop northeast and southwest of the original location. This staking was done by the DeStaffany group; which was eventually incorporated into the Traverse Longlac Mines Limited. Following an exploratory programme conducted in 1955 and 1956, which consisted of 2005 feet of drilling and 900 feet of drifting and crosscutting, the project was abandoned and the grounds were allowed to revert to the Crown.

In 1966 the area was re-staked as the present 35 Tin mineral claims.

PROPERTY:

The property, located in Beaverlodge Lake Area, between Arden Bay and the North Arm of Beaverlodge Lake, (Figure 1), consists of the Tin claims shown on the Hottah Lake Map-Sheet 9 - 860, (Figure 2).

The Tin claims consist of 35 claims numbered from 1 to 35, (no claim #27). Record numbers: Tin 1 and 2, N-67628 and 29; Tin 3, N-67640; Tin 4 to 23, N-93676 to N-93695; Tin 24 and 26, N-93875 to 77 and Tin 28 to 36, N-93879 to 87.

The Tin claims were staked and recorded in 1966 by Mr. Frank Lafferty.

TOPOGRAPHY:

The claims are located on land surrounded by water on three sides. To the north and northwest it is bounded by the Stairs Bay and the North Arm of Beaverlodge Lake to the southeast by the South Arm of Beaverlodge Lake (Also called Arden Bay after D'Arcy Arden the original staker), and to the southwest of the Beaverlodge Lake narrows. The hills reach an altitude of about 1300 feet with a maximum relief of about 700 feet attained northeast of the shaft, (Figure 1).

The topography is subdued and rolling and the hills have an even slope.

The highest hills are ridges coincident with belts of sedimentary quartzitic rocks and feldspar porphyries. Areas underlain by granite have, as a rule, a low relief.

GEOLOGY:

In the Beaverlodge Lake area a belt, up to one mile wide, consists of interbedded sedimentary, volcanic and quartz feldspar porphyry rocks trending northeast along a ridge extending from the southwestern corner to the northeastern end of the map-area. Granite intrusion rims these rocks to the north and south.

The sedimentary and volcanic rocks occur as a faulted roof pendant within the granite and can be correlated with the Snare group of Protozoic age of the Snare River and Ingray Lake map-areas.

The quartzite of the Snare is probably the most conspicuous formation. It outcrops along the northeast trending ridge bounded on the southeast by the Beaverlodge thrust fault and on the northwest by the granite, (Figure 3). The quartz porphyry and younger volcanic rocks are found southeast of the fault and are also rimmed on the southeast by the granite.

South of location 7 (figure 3) an area remains unmapped. This area, which is heavily covered by vegetation is in the proximity of uranium shows and should be mapped in detail.

TABLE OF FORMATIONS

Proterozoic:

Diabase and Gabbro (7)	Dykes and intrusive sheets.
Granite (6)	Pink to reddish, medium to coarse grained.
Gabbro (5)	Dark green, medium-grained to massive.
Argillite (4)	Cherty, dark greenish-grey.
Dacitic Flows (3)	Bluish-grey, fine-grained, dacitic lava flows.
Feldspar Porphyry (2)	Greenish, fine-grained feldspar and chlorite with phenocrysts of feldspar.
Quartzite and slate (1)	White, medium-grained to massive quartzite and dark greyish-green, flaggy slate.

QUARTZITE:

The formation that underlies the hill immediately northwest of the shaft consists of a white homogenous, medium-to fine-grained, siliceous quartzite. The beds are massive and ripple marks are quite common. The massiveness and lack of distinct bedding have led a few authors to refer to the quartzite as the "Giant Quartz Vein".

Northwest of the shaft, for a distance of about 500 feet, the quartzite dips to 75° to 80° N.W. Overlying this unit, a section, composed of a thin bedded slate interbedded with quartzite was exposed for a distance of about 100 feet. The slate was buff weathering and dark greyish-green in colour. The equivalent of this slate, immediately overlying the Beaverlodge thrust was also present at location 1.

The quartzite was heavily fractured and veined. The veins, consisting of white quartz, were criss-crossed and half an inch to several inches thick. They were spaced from a few inches to a couple of feet giving the appearance of a stockwork. They were barren of minerals and thus appears that the fracturing and quartz infilling occurred much earlier than the younger faulting and injection of pitchblende.

In this report the quartzite has been considered to be the oldest formation. This stratigraphic position is in keeping with Kidd's view but is opposite to that of Henderson who had considered the quartzite to be younger than the feldspar porphyry. However, structural evidences suggest that the quartzite is older than the feldspar porphyry.

FELDSPAR PORPHYRY:

The feldspar porphyry, underlies the area southeast of the Beaverlodge fault. It consists of a very fine-grained groundmass with phenocrysts of quartz and feldspar. This groundmass is composed of quartz and highly sericitized feldspar and chlorite varying in colour from greenish to yellowish-green to purplish-grey.

The euhedral feldspar phenocrysts are up to 1/8" in size and are disseminated throughout the rock. Near the fault zone, the formation is fractured and has a fragmental appearance. This fragmental phase consisted of rounded to sub-angular porphyries, varying in size from a few inches to a foot or more, enclosed in a groundmass of similar composition.

DACITE:

A very fine-grained, blue weathering, bluish coloured dacitic lava flow overlies the porphyry rocks. The lava flow is structureless, massive and may vary in composition from dacite to latite. The contact in some areas is marked by a 20 to 100 foot thick agglomerate consisting of coarse, angular to subangular fragments of feldspar porphyry imbedded in a dacitic groundmass. This relationship suggests dacitic lavas flowing over the older porphyry rocks.

ARGILLITE:

In the northeastern corner of the map-area a relatively large area is underlain by a buff weathering, greenish-grey, cherty and ferruginous argillite. The formation is highly folded and the dips are erratic. Near the fault zone the dips are in the order of about 45° to 50° to the north.

GABBRO:

The gabbro underlies the area south of the air strip. It is massive and fractured. Greenish epidote fills the joints and fractures. Dark green on fresh surface, it was composed of sericitized feldspar and dark green hornblende partially altered to chlorite.

GRANITE:

The granite was the most pronounced unit within the map-area. The areas underlain by it have generally low relief and, conversely, nearly all areas of low relief are generally underlain by the granite. Consequently it is thought that the granite underlies most of the area north and northwest of the quartzite outcrop and is also in contact with the exposed sedimentary and volcanic rocks located south of the Beaverlodge Lake fault.

The granitic rocks vary in composition from granite to grandiorite. They weather in a reddish colour, are massive and medium-to coarse-grained. They contain about 60 to 70 per cent pink to reddish feldspar, 20 to 25 per cent quartz and 10 to 20 per cent chlorite. The granitic body is frequently cut by milky white quartz veins that are either barren or contain as minerals mostly hematite and possibly molybdenum in very fine specks.

DIABASE AND GABBRO DYKES:

The youngest activity of the Snare group appears to be the intrusion of gabbro dykes. In this area, it occurs only east of locality 6, (Figure 3). The dyke cuts all the rock units described above and in turn appears to be displaced by the younger Beaverlodge thrust fault. The unit is a brown weathering, greenish to black rock consisting of fine-grained plagioclase and pyroxene. The steeply dipping dyke seems to have intruded the enclosing rocks along fracture planes that were almost vertical.

STRUCTURAL GEOLOGY:

Within the map-area, the most prominent structural feature was the faulted belt of sedimentary and volcanic rocks bounded on each side by the granite. The core of this belt was composed mainly of quartzite and feldspar porphyry.

In the earlier reports, the contact between quartzite and porphyry had been considered to be a normal sedimentary contact. However, the present field work and investigation of the contact has shown that the attitude of the quartzite with respect to that of the other formations strongly suggest the presence of a major fault zone.

The quartzite-feldspar porphyry contact is well exposed about 10 feet southwest of the shaft. In this area, the quartzite forms a sharp ridge, 8 to 10 feet high. At the contact, a gouge, 1 inch to 4 inches thick, was present. Furthermore, the quartz veins cutting the quartzite or the porphyry rocks was discontinuous and terminated abruptly at the contact. The presence of brecciation in the porphyry near the contact also confirmed the presence of a fault zone which has been named in figure 3 "the Beaverlodge Thrust". It had a strike of N46E and a dip of about 68° to 69° NW and in the northeastern portion of the map-area had thrust the quartzite against the younger argillite (Figure 3). Thus this fault, extending from the southwest corner to the northeast corner of the map-area, could be traced for a distance of about 5 miles.

Several subsidiary faults were also present. One such fault was located about 250 feet northwest of the shaft. This fault cuts the quartzite and could be traced southwestward from the shaft, past the sawmill and north of location 1, where it had about 5 to 6 foot wide fractured and brecciated zone.

Another subsidiary fault can be seen about 1000 feet northeast of the shaft. This fault zone, about 15 feet wide, occurs south of the Beaverlodge thrust and cuts the feldspar porphyry rocks. This frontal fault seems to extend northeastward, displacing the dacite and thrusting the quartzite against the feldspar porphyry and argillite.

As far as folding is concerned, only minor folds could be seen within the map-area. An anticlinal and a synclinal flexure was mapped north of the narrows. The anticline butts against the granite and the syncline was cut by the Beaverlodge thrust. The lack of more recognizable folding may be due to the difficulty in mapping folds within the structureless and massive formations.

Jointing was seen quite frequently. In the quartzite two sets of jointing was prominently displayed. One set of joints had a N-S strike and the other was striking E-W.

In terms of age relationship, the tectonic movement, which created the Beaverlodge thrust and associated faults, appears to be the youngest activity in the map-area. This activity probably occurred in late Proterozoic or possibly in early Cambrian time.

ECONOMIC GEOLOGY:

Surface Occurrences:

Within the map-area all the pitchblende occurrences were spatially related to the regional fault system. They were either found to occur along the strike of major faults or along the secondary fractures related and generally close to the major faults.

At location 1, a higher geiger counter reading was obtained in the slates along the fault plane. There were no direct signs of pitchblende but high radioactivity was prevalent.

At location 2, several hematite filled fractures cutting the granite showed some sign of radioactivity. Pitchblende or staining was not visible. Disseminated minerals were also present in the granite. They were too fine to be properly identified but were thought to be molybdenite.

Locations 3 and 4 are located within the Atom claims. In this property a shaft was sunk to a depth of 60 feet and in 1955 and 1956 diamond drilling and underground exploratory work was undertaken on the basis of encouraging results obtained from the above drill holes.

At location 5, radioactivity was encountered in several places along the quartzite-porphry fault contacted. A shallow pit 20 x 7 and 3 to 5 feet deep had also been dug within the quartzite immediately northwest of the fault line. It appears that a slight change in strike of the fault has caused enough fracturing in the quartzite to cause a small deposit. Into the fractured quartzite, a quartz vein with chlorite several feet long has been intruded along with hematite & pitchblende. Thin veinlets and fractures are coated with uranium stains and covellite associated with hematite.

At location 6, radioactivity was encountered along a fracture zone extending northwest almost at right angle to the fault line. Pitchblende or uranium staining were not seen but the geiger counter response was good.

Location 7, was visited by Henderson who gave a very detailed account of this occurrence —" The pitchblende occurs along a zone of quartz stringers in quartzite, conglomerate, and argillite that strikes northeast and dips 55 to 60 degrees northwest. Three large trenches and a small pit have been dug across the zone in a length of 70 feet. The conglomerate bed, which is about 4 feet thick, is composed of quartz and porphyry pebbles up to 1½ inches in diameter in a coarse, gritty, quartzitic, matrix. The conglomerate grades upward into a coarse, gritty quartzite containing a few scattered pebbles, and the vein zone containing the pitchblende is in the gritty quartzite, but, to the southwest, angles off into an overlying, greenish thinly bedded argillite, and breaks up into a network of quartz stringers containing no pitchblende.

The small southwesterly pit is in the vein zone after it has passed into the argillite, and the geiger counter gives no appreciable reaction either in it or to the southwest of it. The large trench, 5 feet to the northeast, is 12 by 5 feet at the surface, and 6 feet deep, with the longer dimension along the vein zone. The vein zone is exposed at both ends, and lies between the 4 foot conglomerate bed to the southeast and the 1 foot bed of coarse, gritty quartzite succeeded by argillaceous sediments to the north-west. The vein zone, which consists of stringers of comb quartz with some associated hematite and pitchblende along the walls of the stringers, is 4 to 6 inches wide, increasing in width to 14 inches at the northeast end of the trench. There is much uranium stain along the vein zone, and the geiger counter needle is driven off the dial in this trench.

In the next trench to the northeast, which is 15 feet long, 3 feet wide, and 3 feet deep, with its longer dimension normal to the structure, the vein zone is exposed at the southeast end. It is not as well defined as in the last-described trench, but there are a few quartz stringers with much stain and a little pitchblende, and the geiger counter needle is driven off the dial.

The next trench is 30 feet northeast of the last one described and is about 20 feet long, 3 feet wide, and 3 feet deep & normal to the rock structure. The trench is in conglomerate and gritty quartzite, but there is no well defined vein exposed in it although one 2 inch quartz veinlet at the southeast end of the trench contains a little uranium stain. The geiger counter needle rises 30 to 40 points above normal in this trench.

In summary the best part of this showing is exposed in the two southwesterly trenches, where a zone of quartz stringers 4 to 14 inches wide carrying pitchblende is exposed over a length of 35 feet. This zone dies out to the southwest, where it passes into slaty argillite, and apparently also to the northeasterly trench.

At location 8, two small pits were dug within the greenish-grey cherty argillite. The area was not radioactive, but highly ferruginous. This may have prompted the excavations at this locality.

No radioactivity was detected northeast of location 8, either along the fault zone or within the quartzite which was, in this area, frequently interbedded with jasper and heavily banded with quartz veins barren of mineralization.

The occurrence of pitchblende and radioactive zones along the major faults indicate that the mineralization is directly related to the fracture system caused by the differential movement along the faults. The ore occurs in lenses of various sizes located in brecciated zones along the faults. The mineralization of the different deposits appears to be due to hydrothermal solutions moving upward along the fracture planes. Consequently, since the fractures have acted as a receptacle for the oncoming mineralized solution, the size of a deposit may be expected to be directly related to the frequency and magnitude of fracturing. These last two features may, in turn, depend on the characteristics of the rock type involved in the movement along the thrust and to the amount of stress developed by the tectonic action.

The description of the different occurrences points also to the fact that the localization of uranium minerals may be influenced by the nature of the wall rock. A chemical reaction between the wall rock and the hydrothermal solution may have taken place causing the precipitation of uranium. The better deposit seems to occur mostly when a fair amount of mafic minerals, such as chlorite, are present. The quartz veins or veinlets cutting the granite carry mainly hematite.

To summarize the mineralogical setting of the area it can be said that:

- (1) Uranium mineralization occurs in lenses and pockets located along shear zones which are directly related to brecciation and stresses developed by faulting.
- (2) The uranium minerals have been deposited by hydrothermal solution moving along the fracture planes.
- (3) Chemical reactions with the wall rocks may also have taken place causing the deposition of uranium minerals and formation of hematite and mafic minerals.

SUMMARY AND CONCLUSION:

Pitchblende is found intermittently for about 2½ miles along the Beaverlodge thrust and along other shear zones present in this area. The deposits occur usually as lenticular ore shoots in fractured or brecciated zones that are related to the regional fault system. They occur either along the major fault or along secondary fractures that are related or are close to the major fault.

The frequency and size of deposits is expected to be governed, partially if not wholly, by the magnitude of fracturing and brecciation which are in turn controlled by the nature of the rocks involved in the faulting and by the intensity of the movements that may have taken place along those faults.

The mineralization in this area, although spotty, is quite strong. The fracture systems are pronounced and may be conducive to the formation of sizeable brecciated zones that may act as a depositional receptacle for the oncoming mineralized hydrothermal solutions.

The most favourable conditions for the deposition and localization of uranium appears to be the following features:

1. Faulting and brecciation.
2. Circulation of mineralized solution along fault planes and subsequent deposition in brecciated or fractured zones.
3. Hydrothermal reactions with the wall rock and consequent deposition of uranium along with hematite and mafic minerals.

“ ORHAN BAYKAL,” P.Eng., P.Geol.

SCHEDULE OF PROPERTIES

<u>Claim Name</u>	<u>Record Number</u>	<u>District</u>
Tin 1 and 2	N-67628 - 29	Yellowknife
Tin 3	N-67640	Yellowknife
Tin 4 to 23	N-93676 - 95	Yellowknife
Tin 24 to 26	N-93875 - 77	Yellowknife
Tin 28 to 36	N-93879 - 87	Yellowknife

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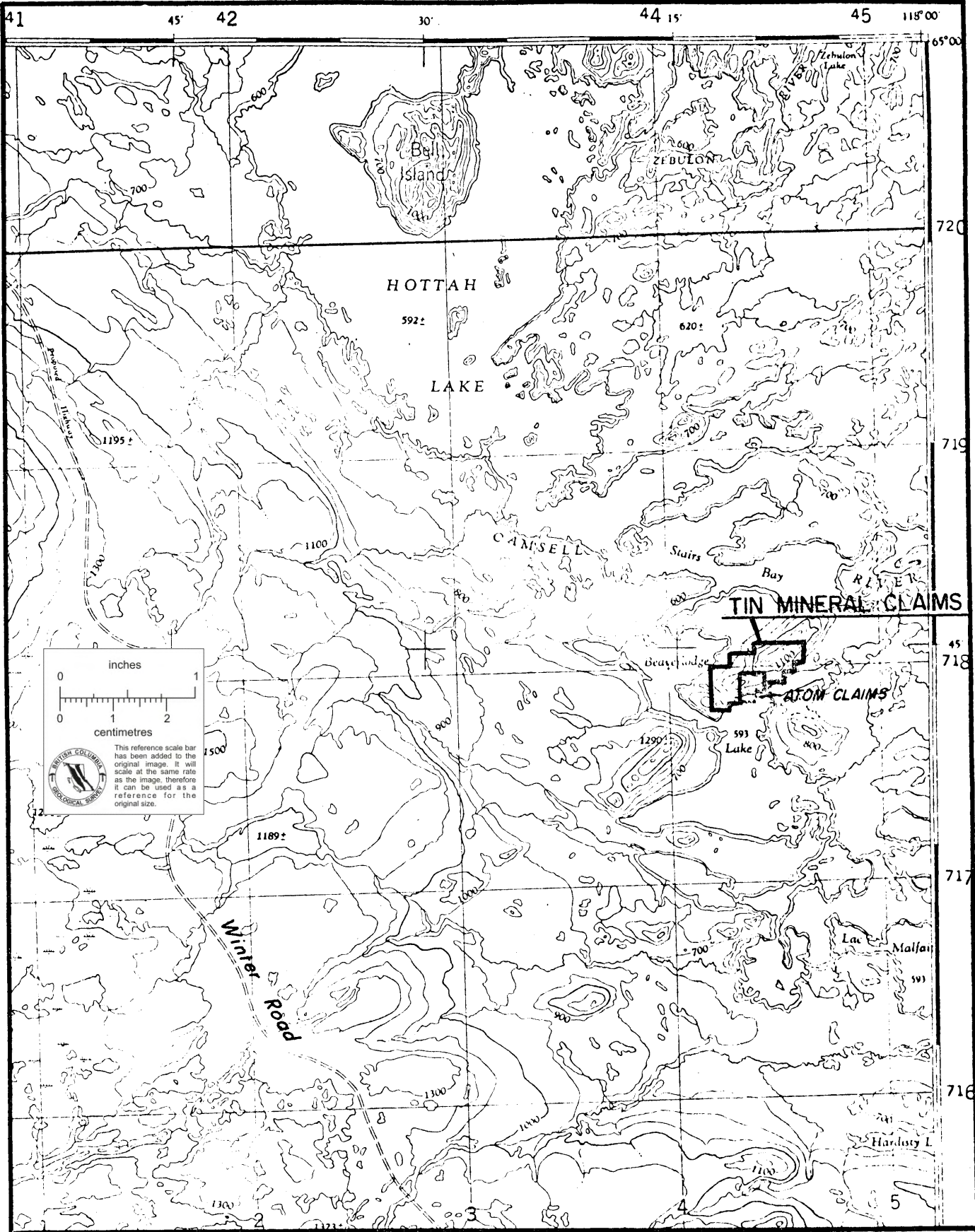
DECLARATION

I, Orhan Baykal of 718 — 8th Avenue, S.W. Calgary, Alberta, certify that I am a graduate of Michigan Technological University holding a B.Sc. degree in Mining Engineering, and a graduate of the University of Michigan holding a M.Sc. degree in Geology.

I am a registered member of the Association of Professional Engineers of Alberta holding Professional Engineer and Professional Geologist certificates and a non-resident registered member of the Association of Professional Engineers of the Province of British Columbia.

I have no interest direct or otherwise in this property nor do I expect to receive any such interest. My Report is based on field work done during July 1967 and studies of available geological publications.

“ ORHAN BAYKAL,” P.Eng., P.Geol.



LOCATION & TOPOGRAPHICAL MAP
of
TIN MINERAL CLAIMS
BEAVERLODGE LAKE - HOTTAH LAKE
N.W.T.

APRIL, 1969

SCALE:- 1" to 4 Miles Approx.

FIGURE 1

CRY LAKE MINERALS LTD. (N.P.L.)

For the Period from Inception
(October 1, 1968) to June 30th, 1969

STATEMENT OF DEFERRED EXPENDITURES

Exploration			
Kirk Group			
Engineering and consulting fees		6,988	
Chartered flying		3,328	
Field supervision		2,550	
Induced polarization survey		5,716	
Line-cutting		1,100	
Magnetometer survey		2,178	
Recording fees		997	
		22,857	
Tin Group			
Assessment fees	3,600		
Reports	1,000		
Registration and maps	72	4,672	27,529
		4,672	
Administrative			
Audit, legal and prospectus		1,850	
Management fee		2,250	
Rent and office services		2,400	
Telephone		703	
Travel, lodging and promotion		3,749	
General		410	11,362
		4,102	
Total Deferred Expenditures			38,891

STATEMENT OF SOURCE AND APPLICATION OF FUNDS

Source of Funds			
Proceeds from share issue			173,352
Loan on equipment purchase			19,000
Option agreement on claims			20,000
			212,352
Application of Funds			
Mineral claims (note)	114,082		
Equipment purchase	37,445		
Deferred expenditures (per statement)	38,891		
Incorporation expense	1,797	192,215	
		192,215	
Excess of funds received over funds used			20,137

AUDITOR'S REPORT

To the Directors
Cry Lake Minerals Ltd. (N.P.L.)

I have examined the balance sheet of Cry Lake Minerals Ltd. (N.P.L.) as at June 30th, 1969 and the statements of deferred expenditures and source and application of funds from inception (October 1st, 1968) to June 30th, 1969. My examination included a general review of the accounting procedures and such tests of accounting records and other supporting evidence as I considered necessary in the circumstances.

In my opinion these statements present fairly the financial position of the Company as at June 30th, 1969 and its sources and applications of funds for the period then ended in accordance with generally accepted accounting principles.

July 28th, 1969
Vancouver, Canada

" BOCK W. YIP "
Chartered Accountant

CRY LAKE MINERALS LTD. (N.P.L.)

BALANCE SHEET

As at June 30th, 1969

ASSETS

Current Assets

Cash	17,022	
Accounts receivable	<u>4,420</u>	21,442
Mineral Claims — at cost (note 1)		114,082
Equipment — at cost		37,445
Deferred Expenditures — per statement		38,891
Incorporation Expense		<u>1,797</u>
		<u>213,657</u>

LIABILITIES

Liabilities

Accounts payable		1,305
Equipment agreement payable		19,000
Option agreement payable		20,000

Shareholders' Equity

Share Capital

Authorized —

5,000,000 shares, par value \$1.00 each

Issued —

	Number	Par Value	Discount	Net	
For claims	750,000	750,000	675,000	75,000	
For cash	675,002	675,002	576,650	98,352	173,352
	<u>1,425,002</u>	<u>1,425,002</u>	<u>1,251,650</u>		

213,657

Approved on behalf of the Board

“EGON B. KRUEGER”

Director

“PAUL S. WHITE”

Director

CRY LAKE MINERALS LTD. (N.P.L.)

For the Period July 1st, to October 31st, 1969

STATEMENT OF SOURCE AND APPLICATION OF FUNDS

(Unaudited)

Source of Funds

No Funds Received

Application of Funds

Deferred Expenditures

Exploration and Development

16,052

Administrative

6,038

22,090

Acquisition of Fixed Assets

910

Incorporation Costs — Territorial Registration

351

Excess of Funds Used Over Funds Received

23,351

CRY LAKE MINERALS LTD. (N.P.L.)

As at June 30th, 1969

NOTE TO FINANCIAL STATEMENTS

The Company's mineral claims were acquired as follows:

Tin Group — 35 claims located in the McKenzie Mining Division of Northwest Territories, held pursuant to an option agreement dated November 19th, 1968 under which the Company must pay \$25,000 over three years.

25,000

Kirk Group — 14 claims located in the Liard Mining Division, British Columbia, acquired for \$60,000 by the issuance of 600,000 treasury shares at a deemed price of 10c per share. In addition the Company reimbursed the vendor of the claims \$13,000 in exploration costs expended by the vendor on the claims.

73,000

New Kirk Group — 28 claims located in the Liard Mining Division, British Columbia, acquired for \$15,000 by the issuance of 150,000 treasury shares at a deemed price of 10c per share.

15,000

Nizi Group — 78 claims located in the Liard Mining Division, British Columbia; 18 of which were acquired gratis and 60 of which were acquired by staking.

1,082

114,082