MME Form 9
Rev. Nov. 65

UNITED STATES
DEPARTMENT OF THE INTERIOR
Geological Survey

OFFICIAL DOCKET FILE  Contract No. _____  Docket No. 6870

Application
- [ ] Denied
- [x] Withdrawn

Contract
- [ ] Terminated - Not Certified
- [ ] Terminated - Certified
- [ ] Cancelled
- [ ] Royalty Agreement

The records contained in this file are marked (x) and arranged in this order:

Folder No. 1:

**Left Side**

- [ ] Royalty Audits
- [ ] Certification of Discovery
- [ ] Closing Letter
- [ ] Cost Audits
- [ ] Termination Notice or Agreement
- [ ] Recision Notice
- [ ] Assignment of Contract
- [ ] Contract Amendments
- [ ] Contract with all exhibits and annexes
- [ ] Owner's Consent to Lien and Subordination Agreement
- [x] Application and Attachments

**Right Side**

- [ ] Project Summary (final)
- [ ] Work Completed Analysis (final)

All other material filed in chronological order including the following reports if checked:

- [ ] Field Team Semiannual Report for Certified Project
- [ ] Final Field Team Report (Tab)
- [ ] Operator's Final Report (Tab)
- [ ] Interim Field Team Reports
- [ ] Operator's monthly reports and all attachments
- [ ] On-site Exam. Report (Tab)
- [ ] Settlement Sheets
- [ ] Drill Logs

Additional Folders:

**Left Side**

Folders No. _____: Reports

- [ ] Analysis of Semiannual Inspection Reports
- [ ] Project Summary (Interim) by MME Engineers

**Right Side**

- [ ] Field Team Semiannual Report for Certified Project
- [ ] Field Team Interim Reports
- [ ] Operator's Monthly Reports with Transmittal, Narrative and Maps

Folders No. _____: Maps (Use pocket folder or envelope)

Folders No. _____: Settlement Sheets

Folders No. _____: Drill Logs

Folders No. _____: Royalty Material

72195-65

# GREAT LAKES NICKEL LIMITED

THUNDER BAY, ONTARIO, CANADA

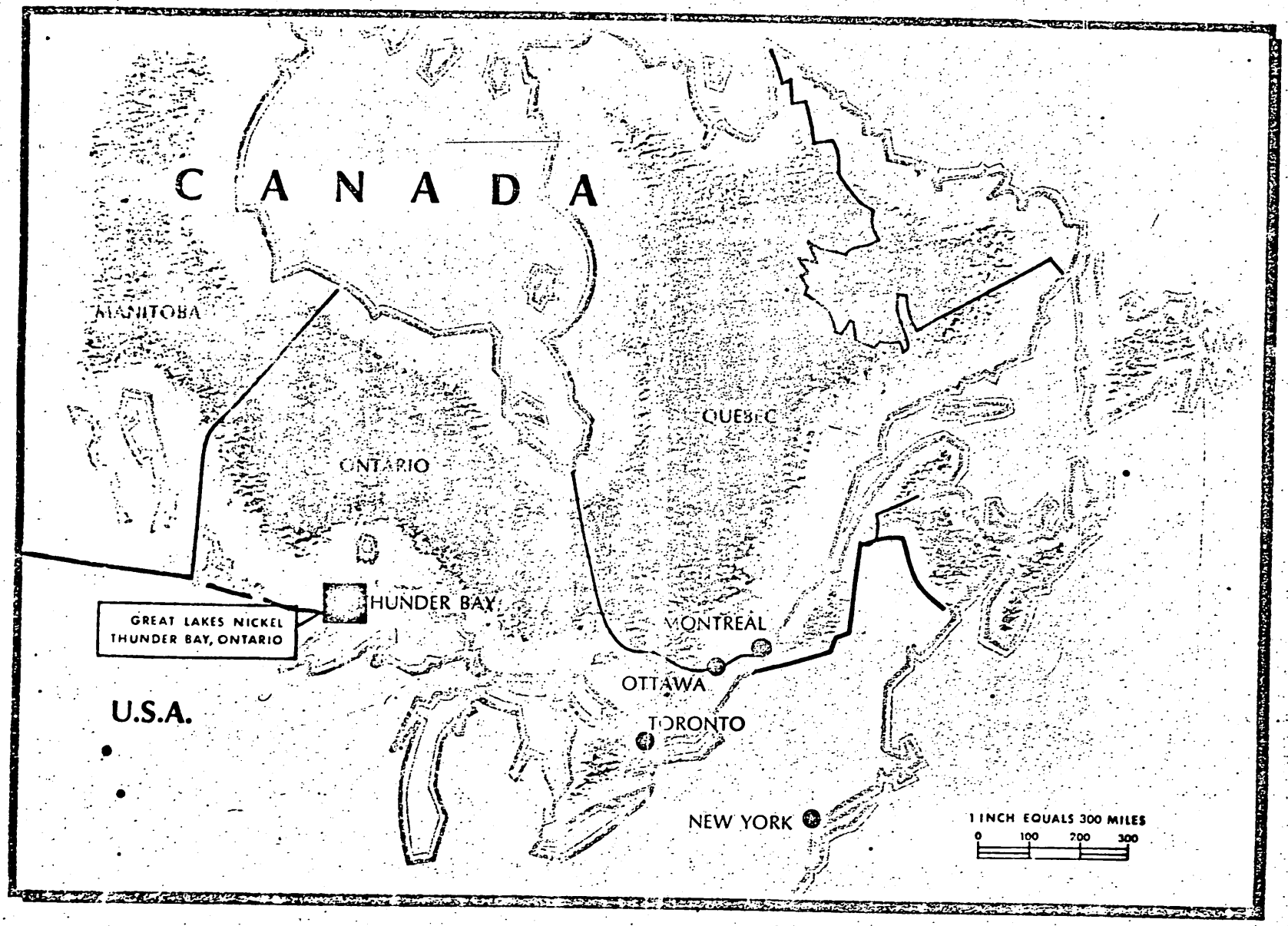
## HISTORY

Great Lakes Nickel Limited, a Canadian mining company, was formed in 1969 through the merger of Great Lakes Nickel Corporation Limited and Thunder Bay Nickel Corporation Limited. Prior to the merger, each company owned contiguous portions of a large nickel-copper-precious metals ore body, each with significant tonnages. The merger was effected to provide the resource base for a large mining complex and to achieve the economics inherent in a single, large operation.

The developers of the project are Messrs. J. A. McCuaig, H. R. Hogan, I. C. Christopher and W. H. Hood. Well known and highly respected in mining circles, these four men have a total of eight academic degrees in geological sciences, mining engineering, and an average of 20 years each of related experience.

A number of independent consultants are associated with the project. Professor H. Monette of Laval University, Quebec City, is retained as mining consultant. Dr. T. Salman of McGill University, Montreal, is retained for the milling work and precious metal studies. Additional test work has been carried out by INCO and the Canadian Department of Energy, Mines and Resources in Ottawa. Jan. H. Reimers and Associates undertook the smelting and refining investigations. Parsons-Jurden Corporation, a mining and metallurgical company, was retained to do detailed feasibility studies. The latter firm, one of the largest in the world, is a recognized authority on feasibility evaluation and the related engineering and construction aspects in the development of a natural resource industry.

Great Lakes Nickel to date has spent more than two million dollars on developing the project. Additional development activities presently under way include further drilling, refining of feasibility studies and other steps necessary to permit an early start on the construction of the facilities for this major mining complex.


CANADA
MANITOBA
ONTARIO
QUEBEC
THUNDER BAY
GREAT LAKES NICKEL
THUNDER BAY, ONTARIO
MONTREAL
OTTAWA
TORONTO
NEW YORK
U.S.A.
1 INCH EQUALS 300 MILES
0
100
200
300

# THE ORE BODY

The existence of mineralization in the general area of the Great Lakes Nickel project has been known since the turn of the century. It remained to Dr. McCuaig and Mr. Christopher to recognize (a) the possibility of large reserves and (b) that recent technological and engineering advances opened up a live prospect of economic development.

There are recent precedents for profitable development of known but hitherto untouched ore bodies. The existence of base metals at Pine Point, Northwest Territories, was known for decades prior to development. The existence of reserves at Peachland, British Columbia, has been known for almost as long. Both were developed as a product of transportation and technological advances and both are now actually or potentially rich properties.

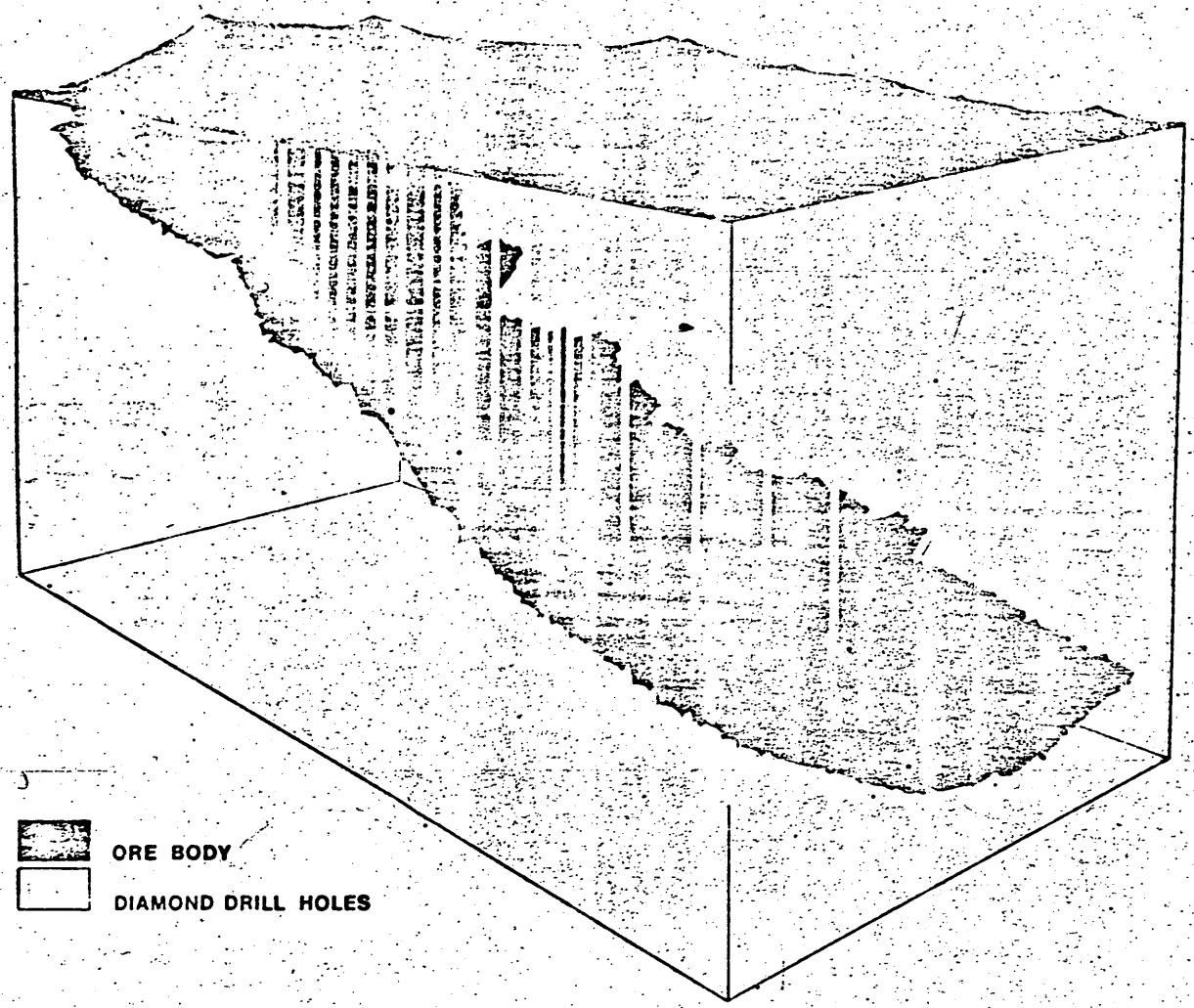
Great Lakes Nickel Limited has to date outlined an ore body of 106 million tons with a grade of 0.40 per cent copper, 0.20 per cent nickel and with a recoverable precious metal value of $1.75 per ton.

Geologic information from diamond drilling and surface exploration indicates the probability of large additional reserves on the Great Lakes Nickel claims. However, considering the 106 million tons of ore delineated, the mine life will be at least 17 years, at a planned production rate of six million tons per year.

Feasibility studies have been based upon this tonnage. However, if the established mineralized area is extended into the surrounding slightly lower grades, the tonnage is increased to 142 million tons with 0.37 per cent copper and 0.18 per cent nickel. If it is extended further, the tonnage increases to 200 million tons of 0.33 per cent copper and 0.16 per cent nickel. In both cases, the precious metals content is in direct proportion to the nickel grade.

The ore itself is an anorthositic gabbro containing copper and nickel sulphides with significant recoverable precious metals, namely platinum, palladium, rhodium, gold and silver. As is well known, copper and nickel sulphides can be processed at significantly lower cost than the lateritic nickel deposits currently under development.

The economic feasibility and profitability of the project is due in part to the nature of the mineralization and in part to the nature of the ore body. The ore body has been explored by diamond drilling to a length of 10,700 feet and an average width of 1,000 feet. In the area that it is proposed to mine, it averages about 100 feet thick. The size and disposition of the ore body permits the use of low cost trackless mining and bulk handling techniques. The mineralization is unusually uniform throughout the ore body. The sulphide mineralization is such that a ratio of concentrate of 33:1 can be achieved in the milling operation. This will result in a high-grade concentrate and economical smelting and refining procedures.




PORTION OF ORE BODY

# PROPOSED DEVELOPMENT

## Location

The geographical location of the Great Lakes Nickel mine site will provide many advantages in both construction and operation stages. Transportation, communications, electrical power, gas and water are all readily available.

The ore body is located in Pardee Township in the Thunder Bay district of Northwestern Ontario. The site is 40 miles southwest of Thunder Bay, and connects by seven miles of gravel road to a hard-surfaced, main commercial highway. Thunder Bay, a city of 100,000 people, will provide a comfortable living area for the families of the 1,200 employees at Great Lakes Nickel.

The site is five miles from the navigable waters of Lake Superior, and the St. Lawrence Seaway provides an immediate and economical route to world markets.

Electrical requirements have been estimated at 65,000 kilowatts per year. This power is readily available from an Ontario Hydro-Electric Commission power grid 40 miles from the mine site.

A main, cross-country gas pipeline close to the site will provide all gas requirements.

Water will be provided through pumps and a pipeline from Lake Superior and so will be available in unlimited supply at a reasonable cost.

All plant facilities, such as the mill, smelter, refinery, general offices, warehouses, shops, change houses and laboratories will be constructed at the mine site.

## Mining

Mining will be underground. The primary method used will be sub-level long-hole open stoping followed by sub-level caving techniques for pillar recovery. Stopes and pillars will be at right angles to the longitudinal dimension of the ore body. The sub-level caving technique was first developed in the Kiruna ore body in Sweden and is currently being used by INCO in its Stobie mine at Sudbury, Ontario. It is a low cost method and is particularly suited to the Great Lakes mining operation because of the uniform mineralization, the good "ground" characteristics of the ore body and host gabbro, and the opportunity for using bulk handling techniques. Initially, two main production shafts are planned, one of which will be sunk to a depth of 1,800 feet and the other to 2,500 feet. Each of the main shafts will have its own services and so, in fact, there will be two self-contained mines.

Horizontal drifts will be driven parallel to the margins of the ore body and cross cuts will be driven from these drifts to develop the stoping blocks and extract the ore. A system of ore and waste passes will be installed. These will feed into a main crusher located under the "keel" of the ore body and opposite each shaft. The ore will be crushed to 8 inches, conveyed to a shaft storage bin and from there it will be hoisted 1,000 feet to an upper shaft storage bin. An incline conveyer will then carry it to the fine crushing plant on the surface.

The ore will be mined at the rate of approximately 24,000 tons per day, on a 5 day per week basis.

## Milling

On the surface it will be crushed further in a fine crushing plant and ground in rod and ball mills until it is reduced to approximately the fineness of cement — 60 per cent minus 200 mesh.

The copper and nickel sulphides and the precious metals will be separated from the host rock by a flotation process with an intermediate regrinding stage. A concentration ratio of approximately 33:1 will be achieved.

The resulting concentrate will contain 12.3 per cent copper and 5.3 per cent nickel, plus the precious metals. Recoveries of copper and nickel are, respectively, expected to be approximately 94 per cent and 81 per cent, based on projections from the pilot plant scale tests and laboratory tests which resulted in estimated recoveries of 92.7 per cent and 80.5 per cent, respectively, for copper and nickel. The concentrate will be thickened to 60 per cent solids and pumped to the smelter.

Milling will be at the rate of about 17,000 tons per day on a 7 day per week basis for an annual total of six million tons of ore.

## Smelting

It is planned to use the flash smelting and sulphur recovery process developed by Outokumpu Oy in Finland. These are well-established and proven processes that have the additional advantage of being able to comply with all present and foreseeable pollution control requirements.

## Refining

The Outokumpu Oy refining process will be used. The process has been successfully employed for ten years at the nickel refinery in Harjavalta, Finland, and for shorter periods in other mines throughout the world.

In the refinery, the matte will be ground, then leached with air injection in the leaching tanks. There will be four leaching stages and at various stages in the process the leach solutions will be passed through electrowinning cells where the copper and nickel will be isolated.

After further treatment a high grade sludge, containing all the precious metals, is produced. This will be marketed to precious metal refineries throughout the world.

## Tailings Disposal

A clay core, rock-fill dam will be constructed to permit the tailings to be impounded in a valley south of the mine. This area is sufficient to contain all the tailings produced during the proposed life of the mine. Most of the water pumped to the tailings pond will be recirculated.

## THE PRODUCT

The Great Lakes Nickel mine will produce three major products: electrolytic nickel, electrolytic 'wire bar' copper and a very high grade precious metals sludge. Its two lesser products will be minor quantities of cobalt hydroxide and elemental sulphur.

On the basis of the data presently available, annual production is projected below:

| Product | Pounds | Ounces |
|---|---|---|
| Copper | 43,500,000 | |
| Nickel | 18,660,000 | |
| Platinum | | 34,000 |
| Palladium | | 136,000 |
| Rhodium | | 2,600 |
| Gold | | 10,500 |
| Silver | | 350,000 |

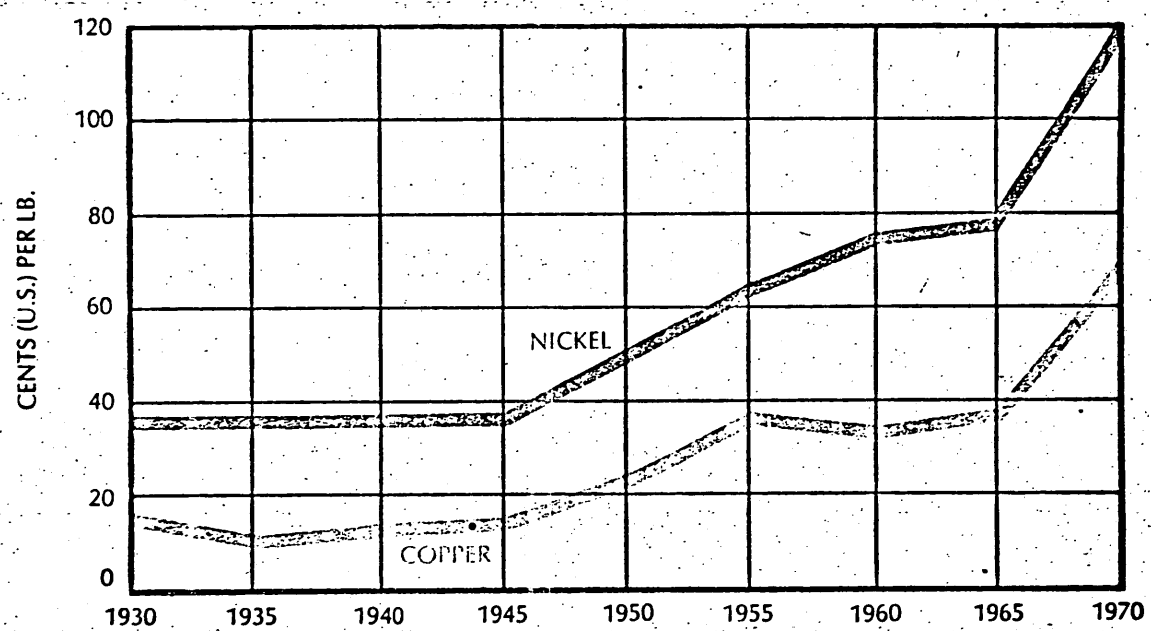
## THE MARKET

Current and projected markets for copper, nickel and the precious metals strongly indicate very good future markets for GLN's mined products.

Feasibility projections have been based upon first quarter 1970 prices. There is every indication that the long-term upward trend in the price of copper and nickel will continue. Although the economic feasibility is based upon copper and nickel prices prevailing today, it is reasonable to anticipate that the returns will be higher than current prices, implying a favourable impact on earnings.

The graph on the following page illustrates the general upward trend of copper and nickel prices over the past forty years. It shows very clearly that, in spite of the decline in copper prices in the mid-1950's, the direction of the trend has never altered. On the basis of many analyses of the supply-demand relationships and the projections for the future, there is no apparent basis for anticipating any major and continuing decline in prices. On the contrary, it is reasonable to assume that although there may be cyclical swings, the trend will continue upwards.

The projected life of the mine is a minimum of 17 years which is long enough to bridge a cyclical down-turn in product price. In addition, the GLN mine will have a good product mix — copper, nickel and precious metals, and if there is a decrease in price of one metal there very well could be an offsetting rise in the price of one of the others. This is a definite advantage over a mine that is predominantly producing a single product.




NICKEL & COPPER PRICES 1930-1970

## OWNERSHIP AND MANAGEMENT

To create a competent financial, development and management team, the developers, Messrs. McCuaig, Hogan, Christopher and Hood, have retained the services of International Capital Corporation and Acres Limited.

International Capital Corporation is a private merchant bank recently formed with the Royal Bank of Canada, United Corporation Limited and Acres Limited as the principal shareholders. ICC will act as financial advisers.

Acres Management Services Limited, a subsidiary of Acres Limited, has assumed responsibility for management until all debt money is repaid. Acres Management Services is forming, from present staff and other selected specialists, a highly skilled management, engineering and construction team capable of bringing the mining complex into profitable production. Acres Limited, in conjunction with Bechtel Limited, is presently performing a comparable function in the $900 million Churchill Falls Power Project in the Labrador.

## OF INTEREST...

- A large, known ore body with economically recoverable nickel, copper and precious metals. Diamond drilling is still in progress and continues to expand the ore picture. Ore ultimately developed will be considerably greater than the ore body presently delineated
- An operating life of more than 17 years at a production rate of 6 million tons per year and considering only the delineated ore body
- A location close to a city — no mine town site required — operating services close by — attractive living environment
- Personnel readily available
- Convenient Electricity, Gas and Water
- Excellent transportation facilities
- An experienced management team

# X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD DON MILLS ONTARIO 445-5755

## Certificate of Analysis

NO. 9879

APPENDIX B
The Mountbracken Corporation
(Please Return)

TO. Le Roy M. Ceresa,
2722 5th. St.,
PERU, Illinois, 61354
U.S.A.

RECEIVED Jan. 15, 1971 INVOICE NO. 6792

SAMPLE(S) OF 7 rocks SUBMITTED TO US SHOW RESULTS AS FOLLOWS:

| Sample No. | Cu ppm | Ni ppm |
|---|---|---|
| 116 | 81 | 35 |
| 122 | 83 | 305 |
| 138 | 24 | 20 |
| 139 | 64 | 80 |
| 150 | 90 | 175 |
| 151 | 150 | 350 |
| 157 | 220 | 190 |

Date Jan. 18, 1971

X=Ray Laboratories Ltd.

X-RAY ASSAY LABORATORIES LIMITED

# X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD DON MILLS ONTARIO 445-5755

## Certificate of Analysis

NO. 5880

TO. Le Roy M. Ceresa,
2722 5th. St.,
PERUS, Illinois, 61354.
U.S.A.

RECEIVED Jan. 15, 1971 INVOICE NO. 6792

SAMPLE(S) OF 12 rock chips SUBMITTED TO US SHOW RESULTS AS FOLLOWS:

| Sample No. | Cu ppm | Ni ppm |
|---|---|---|
| 103 | 88 | 55 |
| 105 | 67 | 175 |
| 107 | 75 | 230 |
| 109 | 95 | 315 |
| 121 | 60 | 105 |
| 129 | 110 | 110 |
| 130 | 105 | 80 |
| 131 | 50 | 345 |
| 132 | 53 | 395 |
| 133 | 92 | 150 |
| 136 | 49 | 180 |
| 143 | 69 | 90 |

X-RAY ASSAY LABORATORIES LIMITED

Jan. 18, 1971

# X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD DON MILLS ONTARIO 445-5755

## Certificate of Analysis

NO. 5962

TO. Le Roy M. Ceresa,
2722 5th. Street,
PERU, Illinois, 61354,
U.S.A.

RECEIVED February 2, 1971 INVOICE NO. 6872

SAMPLE(S) OF 16 rocks SUBMITTED TO US SHOW RESULTS AS FOLLOWS:

| Sample No. | Cu ppm | Ni ppm |
|---|---|---|
| 101 | 58 | 140 |
| 109 | 91 | 250 |
| 111 | 115 | 175 |
| 115 | 138 | 65 |
| 120 | 76 | 40 |
| 122 | 97 | 175 |
| 126 | 66 | 80 |
| 128 | 100 | 175 |
| 129 | 79 | 110 |
| 130 | 140 | 85 |
| 131 | 54 | 365 |
| 132 | 80 | 430 |
| 134 | 95 | 135 |
| 135 | 31 | 185 |
| 142 | 149 | 20 |
| 144 | 156 | 100 |

Feb. 11, 1971

X-RAY ASSAY LABORATORIES LIMITED

# X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD DON MILLS ONTARIO 445-5755

## Certificate of Analysis

NO. 7203

TO. The Mountbracken Corporation,
2722 Fifth Street,
PERU, Illinois-61354.

RECEIVED May 26, 1971 INVOICE NO. 7203

SAMPLE(S) OF 46 rocks SUBMITTED TO US SHOW RESULTS AS FOLLOWS:

| Sample No. | Cu ppm | Ni ppm |
|---|---|---|
| 244 | 1700 | 1200 |
| 245 | 85 | 122 |
| 245A | 155 | 120 |
| 248 | 112 | 143 |
| 250 | 80 | 196 |
| 251 | 78 | 156 |
| 254 | 96 | 130 |
| 256 | 96 | 160 |
| 257 | 124 | 132 |
| 58 | 60 | 145 |
| 59 | 174 | 154 |
| 60 | 94 | 395 |
| 61 | 76 | 345 |
| 62 | 103 | 405 |
| 63 | 120 | 130 |
| 64 | 90 | 156 |
| 65 | 66 | 475 |
| 66 | 85 | 445 |
| 67 | 118 | 189 |
| 68 | 101 | 124 |
| 69 | 116 | 490 |
| 70 | 81 | 49 |
| 71 | 97 | 84 |
| 72 | 107 | 119 |
| 73 | 71 | 140 |
| 74 | 149 | 164 |
| 76 | 80 | 151 |
| 77 | 107 | 145 |

| Sample No. | Cu ppm | Ni ppm |
|---|---|---|
| 278 | 105 | 230 |
| 79 | 97 | 280 |
| 80 | 70 | 275 |
| 81 | 70 | 285 |
| 82 | 15 | 20 |
| 83 | 170 | 116 |
| 84 | 111 | 100 |
| 85 | 194 | 42 |
| 86 | 54 | 20 |
| 87 | 55 | 315 |
| 88 | 100 | 137 |
| 89 | 138 | 103 |
| 90 | 143 | 88 |
| 91 | 145 | 82 |
| 92 | 153 | 98 |
| 93 | 115 | 94 |
| 94 | 95 | 96 |
| 95 | 78 | 40 |

June 2, 1971

X-RAY ASSAY LABORATORIES LIMITED

# THE MOUNTBRACKEN CORPORATION

OF DELAWARE

2722 FIFTH STREET, PERU, ILLINOIS 61354

APPENDIX F
The Mountbracken Corporation
(Please Return)

FINANCIAL STATEMENT, MARCH 2, 1972

The Mountbracken Corporation was incorporated under the laws of the State of Delaware on December 9, 1970. It is currently qualified to transact business in the States of Delaware and Minnesota. It has an authorized capitalization of 500,000 common shares with a par value of $ .10 and 50,000 preferred shares with a par value of $1.00.

As of this date there are issued 116,241 common shares (distributed among four stockholders); no preferred shares have been issued.

As of this date the Corporation has accounts outstanding totalling $79.41; cash on hand totalling $333.00, and assets in the form of a library of research materials, maps, aerial photographs, rock specimens, etc., and leases on mineral rights and options to lease mineral rights on nine square miles of Minnesota, more or less, the which leases and options to lease are valued (at direct cost) at something over $4,819.15, and covering 5,412.38 acres, or over nine square miles. This is a complete and accurate account of the financial condition of THE MOUNTBRACKEN CORPORATION of Delaware at March 2, 1972, to the best of my knowledge and belief.

Signed at
Peru, Illinois,
March 2, 1972.

LeRoy M. Ceresa
LeRoy M. Ceresa
Secretary-Treasurer

LMC:sjbs

APPENDIX U

The Mountbracken Corporation
(Please Return)

First National Bank in Peru

1810 Fourth Street • Peru, Illinois 61354

March 7, 1972

Mr. LeRoy M. Ceresa, Secretary-Treasurer
The Mountbracken Corporation
2722 Fifth Street
Peru, Illinois 61354

Dear Mr. Ceresa:

Your loan application seeking $125,000.00 to further the systematic exploration of a described area for mining copper, nickel and platinum is a bit unusual for a national bank to consider.

The area seems quite promising and we do not doubt that such a venture may produce worthwhile rewards.

You project realistic leasing costs of $200,000.00 to enter into such a venture.

We at the First National Bank respect each individual that has joined with this corporate venture and know that each of them is responsible in his own field, however, for a bank to consider such a speculative venture especially with little collateral to support it would be most difficult.

Each loan application that comes to us must be carefully considered and then we must reach a decision. Our decision is to decline your loan application.

Sincerely,

Harold L. Simkins

Harold L. Simkins
President

HLS:jm

Central National Bank

Commercial Banking
Angelo L. Luciano, Vice President

March 12, 1972

Mr. LeRoy M. Ceresa
Secretary-Treasurer
The Mountbracken Corp.
2722 Fifth Street
Peru, Illinois 61354

Dear Mr. Ceresa:

We are returning herein the total package of literature forwarded to us on March 5.

We are sorry, but we are unable to handle this request at this time.

Best regards.

Sincerely,

ALL/cal
Enclosures

LA SALLE STATE BANK
LA SALLE, ILLINOIS 61301
815/223-8800

March 7, 1972

Mr. LeRoy M. Ceresa,
Secretary-Treasurer
The Mountbracken Corporation
2722 Fifth Street
Peru, Illinois 61354

Dear Mr. Ceresa:

Your application for a loan in the amount of $125,000.00 was referred to the loan committee.

As the bank does not engage in this type of loan on mineral deposits, etc., the loan is not approved.

Yours truly,

Jos. J. Hughes
Vice President

JJH:js

THE MOUNTBRACKEN CORPORATION

OF DELAWARE

2722 FIFTH STREET, PERU, ILLINOIS 61354

OFFICIAL COPY
O. M. E.
RECEIVED
MAR 30 1972

| INITIALS | CODE |
| --- | --- |
| Rew | 4-B |
| | |
| | |
| | |
| | |

March 21, 1972

Dr. Harold Kirkemo,
Chief,
Office of Minerals Exploration,
U.S. Geological Survey,
Washington, D.C.

Dear Dr. Kirkemo:

I believe that Mr. David Shevitz of Pope, Ballard, Kennedy, Shepard & Fowle telephoned you in connection with our application for financial assistance in minerals exploration pursuant to Public Law 85-701 (72 Stat. 700; 30 U.S.C. 641).

The application which we now submit consists of 1) 2 copies of MME Form 40; 2) 2 copies of our application in report form; 3) 2 copies of Appendices A through U; 4) a map tube containing a base map and 5 overlays, all of which are labelled parts of the Appendices.

We have done our best to follow the very complete outline of information required issued by your office and have deviated from it only to include a two-page history of our interest in the ground.

As described in the application, our embryonic corporation has acquired mineral rights in some 5,412 acres (roughly eight-and-one-half square miles) of high and, we think, promising ground in Minnesota. We believe that a carefully planned and fairly deep diamond drilling program may uncover a nickel-copper-platinum-group metals deposit of considerable economic significance.

I might mention that we are not engaged, so to speak, in looking for a needle in a haystack. The geologic data that we have accumulated thus far suggest that, if there is indeed an ore body beneath our ground, it is very likely large and of relatively low-grade. In fact the Mountbracken ground is situated within four miles of a deposit with proven ore reserves in excess of 100,000,000 tons (with over $10 in recoverable nickel, copper, gold, silver, and platinum-group metals per ton).

May I thank you in advance for reviewing our application

and look forward to a favorable decision at your convenience?

Yours faithfully,

LeRoy M. Ceresa

LeRoy M. Ceresa,
Secretary-Treasurer,
THE MOUNTBRACKEN CORPORATION

Sep. Cov.: 1 Base Map & 5 Overlays
Enc:2 copies Application & Appendices
LMC:sjbs

MME Form 40
(Revised Nov. 71)

Form approved
Budget Bureau No. 42-R1368

OFFICIAL COPY
O. M. E.
RECEIVED
MAR 30 1972
INITIALS | CODE

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

# APPLICATION FOR FINANCIAL ASSISTANCE IN MINERALS EXPLORATION

Pursuant to Public Law 85—701 (72 Stat. 700; 30 U.S.C. 641)

**NAME OF APPLICANT** *(Full legal name and mailing address as they should appear on contract if one is executed.)*

THE MOUNTBRACKEN CORPORATION
2722 Fifth Street,
PERU, Illinois. 61354

**APPLICANT DO NOT USE THIS BLOCK**

DOCKET NUMBER: 6870

DATE RECEIVED: 3-30-72

REGION: IV

DIVISION CODE:

**BUSINESS ORGANIZATION** *(Check one)*

- INDIVIDUAL ☐
- CORPORATION ☐
- PARTNERSHIP ☐
- OTHER *(Specify)* ☐

STATE IN WHICH FIRM IS ORGANIZED: DELAWARE

**LIST CORPORATE OFFICERS OR PARTNERS HERE, IF APPLICABLE**

| NAME | ADDRESS | TITLE |
|---|---|---|
| William C. Carroll | 902 16th Street, Peru, Illinois. 61354 | President |
| LeRoy M. Ceresa | 2722 Fifth Street, Peru, Illinois. 61354 | Secretary-Treasure |
| Robert Telfer | Spring Valley, Illinois. 61362 | Director |

MINERAL(S) FOR WHICH YOU WISH TO EXPLORE: NICKEL/COPPER/PLAT.GP/minor gold, silver

ESTIMATED COST OF PROJECT: $200,000

| PROPERTY NAME | LOCATION COUNTY | STATE |
|---|---|---|
| MOUNTBRACKEN | COOK | MINNESOTA |

## GENERAL INSTRUCTIONS

Before filling out this application, please read the *OME Regulations for Obtaining Federal Assistance in Financing Explorations for Mineral Reserves* (30 CFR Chap. II). To assure prompt action, your application must provide all applicable material and information specified on the back of this application form. Avoid unnecessary correspondence and delays by submitting complete and accurate information. *Please submit two copies of this application and all accompanying papers* except as otherwise noted. Place your name and address on each sheet. Each item of information, maps, and reports required as a part of this application is described on the back of this form. Identify each attached statement by the item number to which it applies. If an item does not apply to your application, show the item number on your statement and after it write "not applicable." Maps or sketches should be used to supplement narrative descriptions of the property location and boundaries in item 2, existing mine workings and geology in item 3, and the proposed exploration work in item 5. When this information is not too complex, all of it may be shown on one map or sketch. All documents and other attachments submitted as a part of this application, except those in item 3(g) which you mark to be returned, become the property of the Government and will not be returned to the applicant. Send true copies, *not originals*, of leases, contracts, and other documents which are an essential part of your business records. *File this application with the Department of the Interior, U.S. Geological Survey, Office of Minerals Exploration, Washington, D. C., 20242, or with the nearest OME Field Office.*

## CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief, and that he would not ordinarily undertake the proposed exploration under current conditions and circumstances at his sole expense.

MARCH 1972
DATED

LeRoy M. Ceresa
BY *(Signature)*

SECRETARY-TREASURER
TITLE

A wilfully false statement or certification to any Department or Agency of the United States Government is a criminal offense.
U. S. Code, Title 18, Sec. 1001.

## INFORMATION REQUIRED WITH THIS APPLICATION

*(submit on accompanying pages)*

### 1. Financial Eligibility:

(a) Submit evidence of efforts made within 90 days preceding the filing of this application to obtain credit from your bank of account and at least one other banking institution or other private source of credit. Such evidence shall include (1) *true copies of your letters to credit sources* which show date of loan request, amount and terms requested, and proposed use of loan funds and (2) *true copies of replies from credit sources.* If the loan was offered under terms which you consider unreasonable, state why you consider them so.

(b) List names and addresses of affiliated, parent, or controlling companies or organizations and state extent and nature of their interest.

(c) State how you propose to furnish your share of the cost of the exploration work.

### 2. Applicant's Rights in Land:

(a) State your interest in the land and mineral rights, whether owner, lessee, purchaser under contract, or other. If you are not the owner, submit one true copy of the lease, contract, or other document (with address of owner) under which you control the property. Describe all liens, mortgages, or other encumbrances on the land and state book and page number and official place where recorded.

(b) State the legal description (section, township, and range; metes and bounds; patent number of claims) of the land upon which you wish to explore and all adjacent land which you own or control. Describe any part of the land or workings which should not be subject to Government royalty and liens. If the land consists of unpatented claims, state book and page number for each recorded location notice, including amended locations, and official place where recorded. State all the names by which you know the property.

(c) For all land or mineral rights encumbered or not owned, submit five copies of Lien and Subordination Agreements signed by owner on MME Form 52. If the agreements cannot be obtained, state reasons and whether you can furnish a performance bond.

### 3. Physical Description:

(a) Describe in detail and illustrate with maps or sketches all mining or exploration operations which you know have been or are being conducted upon the land. Include existing mine workings and all production facilities.

(b) State your interest, if any, in operations described in (a)

(c) State, if you know, the past and current production, supporting your statement with copies of settlement sheets, mine records, or published data if available.

(d) Describe known ore reserves, giving quantities and grades.

(e) Describe by narrative and maps or sketches the geologic features of the property, including ore minerals, geologic formations if known, and type of deposit (vein, bedded, etc.).

(f) If you have sampled the area you propose to explore, show where the samples were taken, describe sampling methods used, and provide copies of assay certificates. State your reasons for expecting to find ore.

(g) Send with your application at least *two* copies of all geologic or engineering reports, assay maps, or technologic information which you have, indicating whether you require their return.

### 4. Accessibility of Property:

(a) To aid the OME representative who may examine the property state name, address, and telephone number of person who will meet him; give directions for reaching the property; and describe accessibility of property and of any mine workings.

(b) Name the shipping and supply points and state the distances to the property.

### 5. Exploration Work:

(a) Describe fully the proposed exploration work giving individual footages and sizes of openings *for each item of work.* Use narrative, maps, plans, and sections as necessary. Show location of the proposed work as related to geologic features such as veins, ore-bearing beds, contacts of rock formations, etc. Show on maps also the relation of the proposed work to any existing mine workings and to *claim boundaries* or to the closest identifiable corner.

(b) If an access road must be built, show the proposed location on the property map and state the length, type and construction methods proposed.

(c) If an OME contract is executed, state how soon thereafter work would be started and finished. State your anticipated average daily or monthly rate of progress for each type of work.

### 6. Experience:

State your operating experience and background to conduct this exploration work and also that of the person who will supervise the work.

### 7. Estimate of Costs:

Furnish detailed estimates of the necessary costs for time and materials *for each item of the work proposed in 5(a)* under the headings listed below with a total for each heading and the estimated total cost of the work. Costs for any work to be performed by an independent contractor should be listed separately under category (a) below. Costs for any work that is not to be performed by an independent contractor should be listed under categories (b) through (g).

(a) Independent contracts. State the total cost of any proposed independent contract for all or any part of the work, and the number of units and the unit cost for each type of work, such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, or per cubic yard of material moved. Cost estimates should be supported by bids from three contractors if possible. (*Note*—If none of the work is to be contracted, write "none" after this item.)

(b) Personal services. The cost of supervision, engineering and geological services, outside consultants, and labor should be itemized by numbers and classes of employees; rates of wages, salaries or fees; and periods of employment. State whether these services are available.

(c) Operating materials and supplies. List items of material and supplies giving quantity and price of each. Include under this heading power, water, and fuel, and units of equipment and tools costing less than $50 each.

(d) Operating equipment. List items of equipment and tools costing $50 or more per unit. Give specifications and indicate how each item is to be acquired—i. e., rented, purchased or provided by the applicant. If rented or purchased, state the estimated rental or purchase price and mobilization charge. If furnished by the applicant, state condition and present fair market value.

(e) Initial rehabilitation and repairs. Describe the type and the cost of *initial* rehabilitation or repair of existing buildings, fixtures, installations (exclusive of mine workings), and movable operating equipment now owned by the applicant which will be used in the exploration work.

(f) New buildings, fixtures, installations. Describe each building, fixed improvement, and installation to be purchased, constructed, or installed for the exploration work, stating specifications and cost including labor, and materials.

(g) Miscellaneous. Describe the type and estimate the cost of repairs and maintenance of the operating equipment listed in 7(d). Do not repeat initial repairs listed in 7(e). Show also the costs of analytical work, accounting, workmen's compensation and employees' liability insurance, payroll taxes, and other required costs that do not fall within the previous categories. [*Note*—The Government will not contribute to costs incurred before the date of the contract, or to costs of or incident to: (1) acquiring, using, or possessing land and any existing improvements, facilities, buildings, installations, and appurtenances, or the depreciation and depletion thereof; (2) general overhead, corporate management, interest and taxes (other than payroll and sales taxes); (3) insurance (other than employees' liability insurance); and (4) damages to persons or property (other than authorized repair to or replacement of equipment or other property used in the work).]

THE MOUNTBRACKEN CORPORATION
OF DELAWARE

2722 FIFTH STREET, PERU, ILLINOIS 61354

CONFIDENTIAL

March 21, 1972

Dr. Harold Kirkemo,
Chief,
Office of Minerals Exploration,
U.S. Geological Survey,
Department of the Interior,
Washington, D.C.

It is the intent of this application and attachments to seek a loan of $125,000 to further the systematic exploration, at depth, of an area which we believe may contain a copper-nickel-platinum-precious metals deposit of considerable economic significance.

We offer here a brief history of our interest in the ground, an account of the Corporation, a description of the lands now held, and reproduce abstracts of relevant geological research and professional opinion on the area, as well as an outline of the minerals exploration program which we contemplate. We offer this information under the following heads:

I. History
II. Financial Condition
III. Our Rights in Land
IV. Physical Description
V. Accessibility of Property
VI. Exploration Work
VII. Experience
VIII. Estimate of Costs
IX. Personal, Professional, & Credit References of Directors
X. The Public Interest
XI. Table of Appendices

## I. HISTORY

In the early spring of 1968 our principal stockholder (a regular reader of The Northern Miner) became interested in the extraordinarily large low-grade nickel-copper-platinum-precious metals find in Pardee Township, Ontario (about four miles northeast of the U.S.-Canada border) which is owned by Great Lakes Nickel Limited. (See Appendix A for news reports on that company as well as an annotated geologic map of Pardee Township, 1968, and a general overview of more recent developments and prospects at Great Lakes.)

Driving home to Illinois from Thunder Bay, Ontario, along the "North Shore Road" (Route 61) in July, 1968, our principal stockholder was struck by what seemed to him a topographic similarity between the land lying immediately on either side of the border and the Great Lakes property four miles northeast of the international boundary.

He bought a carpenter's claw-hammer locally, headed into the hills along one of the many gravel trails on the U.S. side, and began banging off pieces of rock for a closer look. Some, though not all of the specimens he examined looked like medium-to-coarse-grained anorthositic/olivine or troctolitic gabbro. In one or two he found what looked (to his unprofessional eye) to be a few very tiny flecks of sulfide.

On his return to Illinois he began gathering information on the area and was disappointed to learn that Frank F. Grout, in The Geology of the Rove Formation and Associated Intrusives in Northeastern Minnesota (University of Minnesota Press, 1933) dismissed his hills of interest as "diabase dikes" pure and simple.

Other, more recent literature on the area (see Appendix T )gave him some hope, however, and he made another trip up on his own, this time gathering samples from both sides of the border. These he showed to Dr. Woodland of the Department of Mineralogy, Field Museum of Natural History, Chicago, who, after examining them under his binocular viewer,gave it as his opinion that the samples from both sides of the border were "from the same magma."

His interest in the area renewed, he retained the law firm of Pope, Ballard, Kennedy, Shepard, & Fowle for the purpose of incorporating as The Mountbracken Corporation of Delaware (1970) and persuaded Messers Carroll, Ceresa, and Telfer to serve as President, Secretary-Treasurer, and Director respectively.

A "walk-on" permit was purchased from the Chippewa Tribe and Band authorities (through the Bureau of Indian Affairs) authorizing geological examination of the Indian-held lands of interest.

Mr. LeRoy Ceresa spent ten days or so on two separate occasions with the principal stockholder gathering specimens, mapping, and taking color photographs of outcrops in the area of interest.

Looking for harder evidence than conjecture and a few sulfide specks, we sent off nearly one hundred rock chip samples for geochemical analysis. The results were encouraging, ranging from a low "background" figure of 24ppm copper (and a similarly low figure for nickel) up through two, three, four, and nearly five hundred ppm, and one sample running as high as 1,700 ppm Cu and 1,200 ppm Ni. Dr. Brooks of X-Ray Assay Laboratories, Limited, expressed the opinion that we had, at least, "a geochemical anomaly of interest." (See Certificates of Analysis for samples drawn from a nine-mile area at Appendix B .)

To abbreviate our history somewhat, we acquired a fifty-year lease (fifty-year renewable) on reasonable terms from Grand Portage Company (Lloyd K. Johnson of the Duluth law firm of Johnson & Johnson, President) which gives us mineral rights in some 1,222 acres(see Appendices C and D ). We then obtained from

the Chippewa Tribe and Band (by means of a public sale conducted by the Bureau of Indian Affairs) Exclusive Prospecting Permits with Options to Lease on an additional 4,190 acres (see Appendices C and D) giving us mineral rights in some 5,412.38 acres, or approximately 8 1/2 square miles in all. (The Indian permits have been awarded us and will issue in due course. It should also be mentioned that one of our leases includes surface rights to more than 135 acres as well as to mineral rights referred to above. Well over 90% of Mountbracken's lands are contiguous.)

In May of 1971, we went on a two-day field trip up the Gunflint Trail northwest of Grand Marais, Minnesota. The trip was conducted by Professor Paul W. Weiblen of the University of Minnesota under the aegis of the Institute of Lake Superior Geology. We learned that scholarly opinion now disagrees with Grout's 1933 designation of our area of interest simply as "diabase dikes".

In November, 1971, we spent two days at the University of Minnesota showing our maps, specimens, and geochemical results to Dr. Weiblen, Dr. Mudrey, and Dr. Paul K. Sims, Director of the Minnesota Geological Survey. Dr. Weiblen made a polished sample and thin-section and took a microphotograph (see Appendix E) and identified $Cu_5 Fe S_4$, Fe S, and Cu Fe $S_2$. We mentioned, too, that we have specimens from the area exhibiting seams or veins nearly 1/2" thick of pyrrhotite which contain visible evidences of chalcopyrite. Tests on these specimens for pentlandite (using dimethyl glyoxime) have yielded positive results.

Dr. Weiblen subsequently recommended that we engage a competent graduate student to do detailed geological mapping of the area. Should we be successful in obtaining financial assistance, such a mapping project would, of course, be an important part of our exploration plans. Thinking that certain aspects of a thorough exploration of the area (surface mapping, diamond drilling, electron microprobe investigations, etc.) might yield valuable data for a Master's thesis, Dr. Weiblen put us in touch with Mr. Richard Covill, one of his outstanding students, with whom we have now arrived at a tentative agreement.

Although their interest is, quite properly, academic, nevertheless Drs. Weiblen, Sims, and Mudrey raised no general theoretical objection to our thesis, which amounts to this:

The Mountbracken ground appears, in large part, to be geologically similar to that containing the large nickel-copper-precious metals ore body three miles northeast in Canada. It seems geologically related to -- perhaps an extension of -- the Kawishiwi River ground which was of sufficient economic interest to persuade International Nickel to sink a 1000-foot exploration shaft. We have found visible sulfides, some containing easily recognizable chalcopyrite. Fairly widely selected samples have yielded interesting

nickel and copper results in geochemical analysis. If the Great Lakes analogy holds (and visible evidence of layering improves the possibility that it may) then a fairly deep, carefully planned and professionally supervised drilling program is warranted.

As noted above, it is the purpose of this application to raise funds needed for such a program.

## II. FINANCIAL ELIGIBILITY

a) We attach true copies of our letters to three financial institutions (one our bank of account) showing the amount and terms of a recent loan request. We also attach true copies of replies from those sources of commercial credit (see Appendix U).

b) For a brief outline of the corporate history, capitalization, and current financial condition of The Mountbracken Corporation, see Appendix F.

c) We propose to furnish our share of the allowable exploration funds needed (i.e. 37.5% = $75,000) by means of a private placement of letter stock. We would offer a formal undertaking that receipt of OME assistance and the private placement would be mutually contingent.

## III. APPLICANT'S RIGHTS IN LAND

a) Our rights in the 5,412 acres, more or less, derive from two sources: 1) a fifty-year (fifty-year renewable) lease from Grand Portage Company, Duluth, Minnesota (see true copy of the lease as filed in the Office of the Recorder of Cook County, Grand Marais, Minnesota, at Appendix C) and 2) Exclusive Prospecting Permits with Options to Lease acquired from the Chippewa Tribe and Grand Portage Band by means of a public sale conducted by the Bureau of Indian Affairs (see Appendix D). There are no liens, mortgages, or other encumbrances on the lands as guaranteed by the lessors.

b) For a complete legal description of the townships, ranges, and sections, metes and bounds of all lands held see Appendix G.

c) We have every reason to believe Grand Portage Company will execute Lien and Subordination Agreements on MME Form 52; we shall request that this be done as soon as we learn that our application is being favorably considered.

## IV. PHYSICAL DESCRIPTION

a) The Mountbracken and associated ground consists of a series of dikes (with at least one notable sill) tending in a northeasterly direction and running for a distance of approximately ten miles. The dikes appear to cross the international boundary (Pigeon River) and extend into Canada. The ground is rugged, rising from 740' above sea level to a high of 1,814' or about 1,200' above Lake Superior a mere three miles from its shore. (See map at Appendix H.)

The area supports no mining operations at present, although Grout mapped seven or eight shallow pits and other exploratory diggings in 1933. Some of these were evidently related to calcite veins and others to gossans or other evidences of surface sulfide deposits (see map at Appendix I).

It should be borne in mind that, although the area has certainly been prospected fairly intensively at the surface, such prospecting was conducted: 1)in a rather desultory fashion; 2)many years before advances in metallurgical technology made low-grade deposits of copper and nickel economically interesting; and 3)many years before the Great Lakes discovery three miles to the northeast (and subsequent exploration in the late 1960's) suggested the necessity for exploration at depth. The designation Grout applied to dikes in this area undoubtedly discouraged exploration as well.

b)There are no mine workings aside from the shallow pits mentioned above.

c) and d) Not applicable.

e), f), and g) It would be absurdly pretentious for us to attempt to describe, let alone sum up the complex geology of our nine quare miles of ground. We are not professionally qualified to do so. We do, however, refer the reader to:

The Geology of Cook County, Minnesota.....APPENDIX J
Grout, Sharp, Schwartz. U.of Minn. Press: Minneapolis, 1959.
The Geology of the Rove Formation and Associated Intrusives in Northeastern Minnesota, Grout and Schwartz. U.of Minn. Press: Minneapolis, 1933.....APPENDIX K
Mountbracken Corporation Property.....APPENDIX L
Aerial Photographs of the Area from 29,000'...APPENDIX M
Map of Specimen Source Locations.....APPENDIX H
General Geology of the Area (from Grout, 1933)APPENDIX N
Map Showing Cu Analysis Source Locations.....APPENDIX O
Map Showing Ni Analysis Source Locations.....APPENDIX P
Map Showing Locations of Pits, Veins, Gossans to 1933.....APPENDIX I

Abstracts from Research Papers.....APPENDIX T
Certificates of Geochemical Analysis.....APPENDIX B

Based on such professional opinion as we have canvassed to date, we can say that our ground contains large dikes of both olivine diabase and olivine gabbro or troctolite which bear a striking similarity to the host rock at Great Lakes. Gossans are visible at several locations. The great bulk of the rock contains plagioclase, pyroxene, and olivine in varying proportions. Surface samples, many of which were unfortunately rather more weathered than we should have liked, compare most favorably in their copper-nickel analyses with the geochemical results of tests on rocks gathered directly above the 100,000,000-ton Great Lakes Deposit. (See geochemical results of Ontario Department of Mines tests at Appendix Q.)

## V. ACCESSIBILITY OF PROPERTY

a) Should you wish to examine the property, please contact:

Mr. LeRoy M. Ceresa,
Secretary-Treasurer,
The Mountbracken Corporation,
2722 Fifth Street,
Peru, Illinois. 61354

Home telephone: (815) 224-2180 Office telephone: (815) 223-2520

b) The property itself is very accessible by motor car; in fact it actually touches the "North Shore Road" (Route 61) near Grand Portage, Minnesota. A convenient inland traverse is provided by the historic Grand Portage Trail. Very satisfactory year-round accommodations are available within three miles of the property. The closest city of consequence is Thunder Bay, Ontario (population: 110,000) about 40 miles northeast on Route 61. The decayed hamlet of Mineral Center (on old Route 61) is a mile-and-a-half from the property.

From an ore-shipping point of view, the Mountbracken property could hardly be more perfectly situated. It is less than half a mile from an excellent natural harbor on Lake Superior; even to travel that short distance to reach the shore of the lake it is necessary to cross a major international highway and main trucking route. There are also major rail lines within fewer than forty miles.

## VI. EXPLORATION WORK

Our exploration plans would be modified, of course, by the judgments of qualified geologists and mining engineers whose opinions we would be in a position to secure only if our present application for financial assistance were to be approved. In basic outline, however, we should wish to undertake the following phases of exploratory work:

1. Preliminary geological and petrographic study: Thorough examination and assessment of the relevant literature; microscopic

examination of thin-sections taken from the several hundred marked samples already gathered from the property.

2. Detailed geological mapping: Concentrating on high ground; probable scale: 1:500.

3. Further geochemical analysis: Five hundred more chip samples to be gathered during phase 2; analysis for Cu & Ni.

4. Detailed survey of most promising drill sites: Picket lines to tie recommended drill locations to bench-marks, hubs, section corners, or other survey anchors.

5. Diamond drilling: Narrow gage, wire-line; at least twenty holes of an average depth of 1200' would be needed to provide five cross-sections at one-mile intervals giving a sufficient picture to prove or disprove the general hypothesis. (Clearly far more drilling would be necessary definitively to prove or outline any ore reserves; this additional necessary drilling would be financed on the basis of data gathered as a result of this phase of the work.) (For initial suggestions on drill locations, see map at Appendix R.)

b) Although the property is unusually accessible (thanks to two paved highways, the gravel roads to the three lookout towers on or near the property, and several recent logging roads) nevertheless the ground is very rugged. Several short trails of less than a mile each would have to be opened sufficient to move in drill rigs.

c) If financial assistance is obtained, we would expect Phase 1 to extend from April 1 through May 31; phases 2,3, and 4 would extend through June and July; phase 5 would be completed by mid-September of this year.

## VII. EXPERIENCE

The officers and directors of the embryonic corporation as presently constituted do not have mining experience. We would propose to remedy this serious deficiency in two ways: 1) Appoint professionally qualified persons to the board at the first opportunity; and 2) Rely heavily on the advice of geologists and mining engineers in the conduct of our operations. We believe that the high value we place on the importance of competent advisors is indicated by our selection of the firm of Pope, Ballard, Kennedy, Shepard, and Fowle as legal counsel. Those associated with The Mountbracken Corporation are employed at the managerial level of

a multi-million-dollar corporation in their full-time occupations and so are not altogether unfamiliar with the principles of sound management.

As for the technical supervision of the project, we would not want to make anyone a firm job offer until we had assurances of forthcoming funds to back it up. As mentioned above, Professor Paul Weiblen of the Department of Geology and Geophysics at the University of Minnesota -- a recognized authority on the Duluth gabbro and a man for whose judgement we have a very great respect -- recommended Mr. Richard Covill who will be doing post-graduate work in geology under Dr. Weiblen. It is probable that he would supervise phases 1,2,3,and 4. As for technical supervision of phase 5, we would seek a professional mining engineer.

## VIII. ESTIMATE OF COSTS

Note: Should we learn that our application is being favorably considered we shall be happy to further "fine-tune" our estimates. At this stage it seems to us that approximations, so they be deemed reasonable, may suffice. (We list here only "allowable" costs.)

a) Independent contracts:

1. Geochemical analysis of 500 rock chip samples for Phase 3 Cu & Ni content @ $2 ea.....$ 1,000.
2. Surveying 20 diamond drill hole sites, Phase 4..... 4,000.
3. Drilling 20 BX wire-line holes @ avg. depth of 1200' assuming occasional bad ground and a drilling cost of $7.00 a foot (no wedging)..... 168,000.

TOTAL Independent Contracts: $173,000.

b) Personal Services:

1. Graduate student for Phases 1,2,3,4; 2 months part-time; 3 months full-time.....$ 4,000.
2. Consultant geologist for Phases 4 & 5; core-logging and final report, 2 months..... 5,000.
3. Mining engineer, Phase 5, 1 month..... 2,500.

TOTAL Personal Services: $ 11,500.

Note: The above-listed professional services are available. Should a bushman or helper be required, his wages would be drawn from the Contingency Fund below.

c) Operating Materials and Supplies:

1. Mapping equipment for Phases 1,2,3,4,& 5.....$ 200.
2. Field equipment & camping items..... 300.

TOTAL Operating Materials & Supplies 500.

d) Operating Equipment:

Jeep or Land-Rover for Phases 2,3,4, & 5; leased; plus fuel; avg. 20 miles per day, three months.....$ 1,000.
TOTAL Operating Equipment: $ 1,000.

e) Initial Rehabilitation & Repairs:
NONE

f) New Buildings, Fixtures, Installations:

Core house; 2"x4" & plywood construction; 12'x20'; no foundation; materials & labor.....$ 1,000.
TOTAL New Bldgs, Fixtures: $ 1,000.

g) Miscellaneous:

1. Assays & other analytical work (excluding geochemical analyses itemized under a)).....$ 2,500.
2. Expenses of graduate student while in the field.... 1,500.
3. Accounting costs (C.P.A.'s fee etc.)..... 1,000.
4. Contingency Fund..... 3,000.
5. Clearing trails or skidways for drill rigs; 5 miles maximum..... 5,000.

TOTAL Miscellaneous: 13,000.

GRAND TOTAL: $200,000.

IX. PERSONAL, PROFESSIONAL, & CREDIT REFERENCES OF DIRECTORS

William C. Carroll, President:

Mr. Thomas McCormack, General Sales Manager (Ret) DuPont Chemical Company; 1610 N. Ridley Creek Road, Media, Pennsylvania.
Mr. Thomas H. Cox, Campbell Well Seal Company, Pottstown, Pennsylvania.
Mr. Donald Cunningham, Hornblower, Weeks, Hemphill & Noyes; 2,600 East Tennessee Street, Denver, Colorado.

LeRoy M. Ceresa, Secretary-Treasurer:
Mr. Wm. Magnafici, Vice-President, First National Bank in Peru, 1810 Fourth Street, Peru, Illinois. (815)223-0214
Mr. Richard N. Ericson, Production Manager, Open Court Publishing Company, Box 599, La Salle, Illinois. (815)223-2520
Mr. Donald E. Fike, Executive Director, Horizon House, 2000 Plank Road, Peru, Illinois. 61354

Mr. George Rotsart, General Manager, Television Cable Company, 301 Peru Street, Peru, Illinois. (815)223-1106

Robert Telfer, Director:

Mr. Harold Simkins, Vice-President, First National Bank in Peru, 1810 Fourth Street, Peru, Illinois. (815)223-0214

Mr. Gordon Sears, Vice-President, Citizens' National Bank, Princeton, Illinois.

Mr. Jerry Warner, Manager, Troy Grove Gas Storage Facility, Northern Illinois Gas Company, Troy Grove, Illinois.

Mr. Craig Hancock, Instructor, La Salle-Peru High School, La Salle, Illinois. 61301

## X. THE PUBLIC INTEREST

In view of the widespread, and, we believe, justified public concern for the preservation of a habitable natural environment, it is reasonable to expect a corporation seeking financial assistance to describe in some detail its plans insofar as they may significantly alter that environment, and to offer formal undertakings outlining the measures it will take to prevent the waste of, to preserve, or to restore the same.

In the attached document (Appendix S) which we submitted last year to the Department of the Interior, we have done our best to face squarely the kinds of possible threats to the natural environment implicit in any mining or industrial development of the kind we envision.

Having thought some on the environmental ramifications of our project, and believing none of the problems raised by them to be insoluble, we think, too, of the public advantages accruing should we be successful in bringing a mine into production -- a mine that would offer obvious benefits not only to ourselves and to the Indian owners of the land, but would provide an additional domestic source of important strategic metals while, at the same time, generating tax revenues and jobs in a corner of northeastern Minnesota which is so sorely in need of both.

And should we find no ore deposit of economic interest, all who have associated themselves with the Mountbracken project will have increased, in the course of their explorations, the sum of geologic knowledge, and so be left, at the very least, with the consolations of philosophy.

/sjbs

## TABLE OF APPENDICES


APPENDIX

A News Reports from The Northern Miner
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Great Lakes Nickel, Limited: History/Ore Body/Proposed Development/The Product/The Market
Map of Great Lakes Property Showing Drill Locations to 1968 and Annotations by Geul

B Certificates of Cu & Ni Analyses of Mountbracken samples
Excerpt from Dr. Davidson's report on Kawishiwi Quadrangles mentioning Cu/Ni levels warranting drilling

C Lease from Grand Portage Co. (short form) as filed with Cook County Recorder

D Exclusive Prospecting Permits with Options to Lease from the Bureau of Indian Affairs

E Xerox of Sample Microphotograph of Mountbracken Sample made by Dr. Paul Weiblen, with comments on back

F Mountbracken Financial Statement, March 2, 1972

G Legal Descriptions of Property Held

H & L Map of Mountbracken Ground (on Scale of 1:24,000) Showing Locations of Sample Sources

I Map Showing Veins, Pits, to 1933 (from Grout)

J The Geology of Cook County, Minnesota by Grout, Sharp, and Schwartz, 1959: University of Minnesota Press

K The Geology of the Rove Formation and Associated Intrusives in Northeastern Minnesota by Grout & Schwartz, University of Minnesota Press, 1933

M Aerial Photographs of Mountbracken Ground from 29,000'

N General Geology of the area as identified by Grout (map)

O Map of Cu Analyses

P Map of Ni Analyses

Q Table Showing Geochemical Analyses of Great Lakes at Surface as done by Ontario Department of Mines

R Map of Suggested Drill Sites

S Environmental Considerations taken into Account by The Mountbracken Corporation

T Technical Abstracts: Exploration for Copper-Nickel in Northeastern Minnesota/The Duluth Complex/Rock Classification Triangle/Geology of the Southern Duluth Complex/Comparison of Copper-Nickel -- Sudbury-Duluth/Long-Term Outlook for Copper & Nickel/Growth of Taconite, Copper-Nickel, & Related Industries in Northeastern Minnesota/

APPENDIX

T (cont.) The Potential for New Mineral Discoveries in Minnesota/A Funnel-Shaped, Gabbro-Troctolite Intrusion in the Duluth Complex, Lake County, Minnesota/A New View of the Duluth Complex/ Mafic Intrusions in Pardee and Devon Townships, Ontario (drawn from the Geul Report).

U Letters from commercial sources of credit

/sjbs

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Mr. Leroy M. Ceresa
Secretary-Treasurer
The Mountbracken Corporation
2722 Fifth Street
Peru, Illinois 61354

Re: OME-6870 (Nickel-Copper-Platinum)
The Mountbracken Corporation
Mountbracken Property
Cook County, Minnesota

Dear Mr. Ceresa:

We are placing in our inactive files your application for financial assistance to explore the Mountbracken property. This is being done to up-date our application records and should not be construed as a denial of your request.

We would be unable to offer assistance in the full amount you requested for the balance of the fiscal year ending June 30, 1973. An improvement in the funding situation for the OME program in the next fiscal year is not expected.

However, if the funding situation should improve sometime in the future, and if you develop the data necessary to determine specific exploration targets, we would be glad to reactivate your application upon request. This can be done by referring to this docket number, and furnishing up-to-date data where it is required (bank letters, exploration plan, cost estimates, etc.).

Sincerely yours,

Harold Kirkemo

Harold Kirkemo
Chief, Office of
Minerals Exploration

cc: Director's reading file
Mineral Resources
OME reading file
R. A. Laurence - R-IV
Mr. Kirkemo

HKirkemo/cac 2/1/73

MME Form 7
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AUG 30 1972

Mr. LeRoy M. Ceresa
Secretary-Treasurer
The Mountbracken Corporation
2722 Fifth Street
Peru, Illinois 61354

Re: OME-6870 (Nickel-Copper-Platinum)
The Mountbracken Corporation
Mountbracken Property
Cook County, Minnesota

Dear Mr. Ceresa:

Thank you for the additional information on the Mountbracken property sent with your letter of August 12, 1972. This is the type of information that is essential in appraising the exploration possibilities of the property, and is useful in locating specific sites for bulk sampling and other work necessary to determine exploration targets. We consider this work to be preliminary to actual exploration that may be eligible for OME assistance.

The budget constraint on the OME budget in fiscal year 1973, mentioned as a possibility in our letter of April 7, 1972, is a reality so our operations this year will continue at about the same modest level of the past several years.

We wish you continued success with the preliminary work on the property.

Sincerely yours,

Harold Kirkemo

Harold Kirkemo
Chief, Office of
Minerals Exploration

cc: Director's reading file
Mineral Resources
OME reading file
R.A.Laurence with cy. of
incoming letter
Mr. Kirkemo

HKirkemo/cac 8-30-72

# THE MOUNTBRACKEN CORPORATION

OF DELAWARE

2722 FIFTH STREET, PERU, ILLINOIS 61354



OFFICIAL COPY
O. M. E.
RECEIVED
AUG 15 1972
INITIALS CODE
Carl 120 W
HK 120
Alan Bluetts


August 12, 1972.

Dr. Harold Kirkemo,
Chief,
Office of Minerals Exploration,
U.S. Geological Survey,
United States Department of the Interior,
Washington, D.C. 20242

Dear Dr. Kirkemo:

This rather belated letter is to thank you for yours of April 7, 1972 responding to our submission (OME-6870 -- copper, nickel, platinum) requesting financial assistance in pursuing an exploration program at depth on the ground we hold in northeastern Minnesota.

In order to up-date the information you have on our ground, I enclose a slightly revised map, including locations from which rock specimens have been gathered, many of them since we wrote you last. I also enclose a partial listing of geochemical results obtained from a considerable number of the specimens. I might mention, too, that we have learned from the data of a major mining company that held a small part of the ground we now hold that they obtained geochemical readings as high as 1,100 ppm Ni and 3,600 ppm Cu on some of the ground we now hold.

I hardly expect this information to be sufficient to "re-open" our case. Nevertheless we find it encouraging, and assume that the Office of Minerals Exploration would like to be kept informed of developments, especially in view of the fact that we do not wish to withdraw our application from some future consideration.

Again, our thanks for your very informative letter.

Yours faithfully,

LeRoy M. Ceresa

LeRoy M. Ceresa,
Secretary-Treasurer,
THE MOUNTBRACKEN CORPORATION

LMC:sjbs
Encs.

# GEOCHEMICAL ANALYSES
## of
## SAMPLES TAKEN FROM THE MOUNTBRACKEN GROUND
(partial listing)

All analytical work was done by X-Ray Assay Laboratories, 45 Lesmill Rd., Toronto Ontario

| Sample No.) | COPPER Cu in ppm |
|---|---|
| .151) | 150 |
| .430) | 150 |
| .433) | 150 |
| .435) | 152 |
| .292) | 153 |
| .446) | 154 |
| .245A) | 155 |
| .144) | 156 |
| .442) | 159 |
| .437) | 160 |
| .415) | 165 |
| .283) | 170 |
| .259) | 174 |
| .416) | 174 |
| .409) | 190 |
| .428) | 190 |
| .285) | 194 |
| .422) | 195 |
| .439) | 195 |
| .425) | 210 |
| .442) | 210 |
| .157) | 220 |
| .429) | 225 |
| .405) | 250 |
| .441) | 300 |
| .443) | 450 |

| (Sample No.) | NICKEL Ni in ppm |
|---|---|
| (133) | 150 |
| (276) | 151 |
| (435) | 153 |
| (259) | 154 |
| (251) | 156 |
| (264) | 156 |
| (420) | 156 |
| (438) | 158 |
| (256) | 160 |
| (407) | 160 |
| (274) | 164 |
| (432) | 164 |
| (452) | 165 |
| (445) | 166 |
| (450) | 168 |
| (105) | 175 |
| (111) | 175 |
| (150) | 175 |
| (122) | 175 |
| (128) | 175 |
| (136) | 180 |
| (446) | 183 |
| (135) | 185 |
| (436) | 186 |
| (267) | 189 |
| (157) | 190 |
| (250) | 196 |
| (449) | 198 |
| (447) | 200 |
| (440) | 205 |
| (444) | 210 |
| (442) | 215 |
| (448) | 220 |
| (451) | 220 |
| (107) | 230 |
| (278) | 230 |
| (408) | 245 |
| (109) | 250 |
| (425) | 260 |
| (279) | 280 |
| (281) | 285 |
| (122) | 305 |

| (Sample No.) | NICKEL (Cont'd) Ni in ppm |
|---|---|
| (287) | 315 |
| (109) | 315 |
| (403) | 325 |
| (131) | 345 |
| (261) | 345 |
| (151) | 350 |
| (131) | 365 |
| (409) | 385 |
| (132) | 395 |
| (260) | 395 |
| (262) | 405 |
| (132) | 430 |
| (266) | 445 |
| (265) | 475 |
| (269) | 490 |
| (411) | 630 |
| (410) | 650 |
| (401) | 740 |

NOTE: Ontario Department of Mines' "Geological Report No. 87" (1970) on page 14 gives geochemical values from "above adit, Great Lakes Nickel Corp. Ltd., on top of mesa" as 130 ppm Cu and 380 ppm Ni.

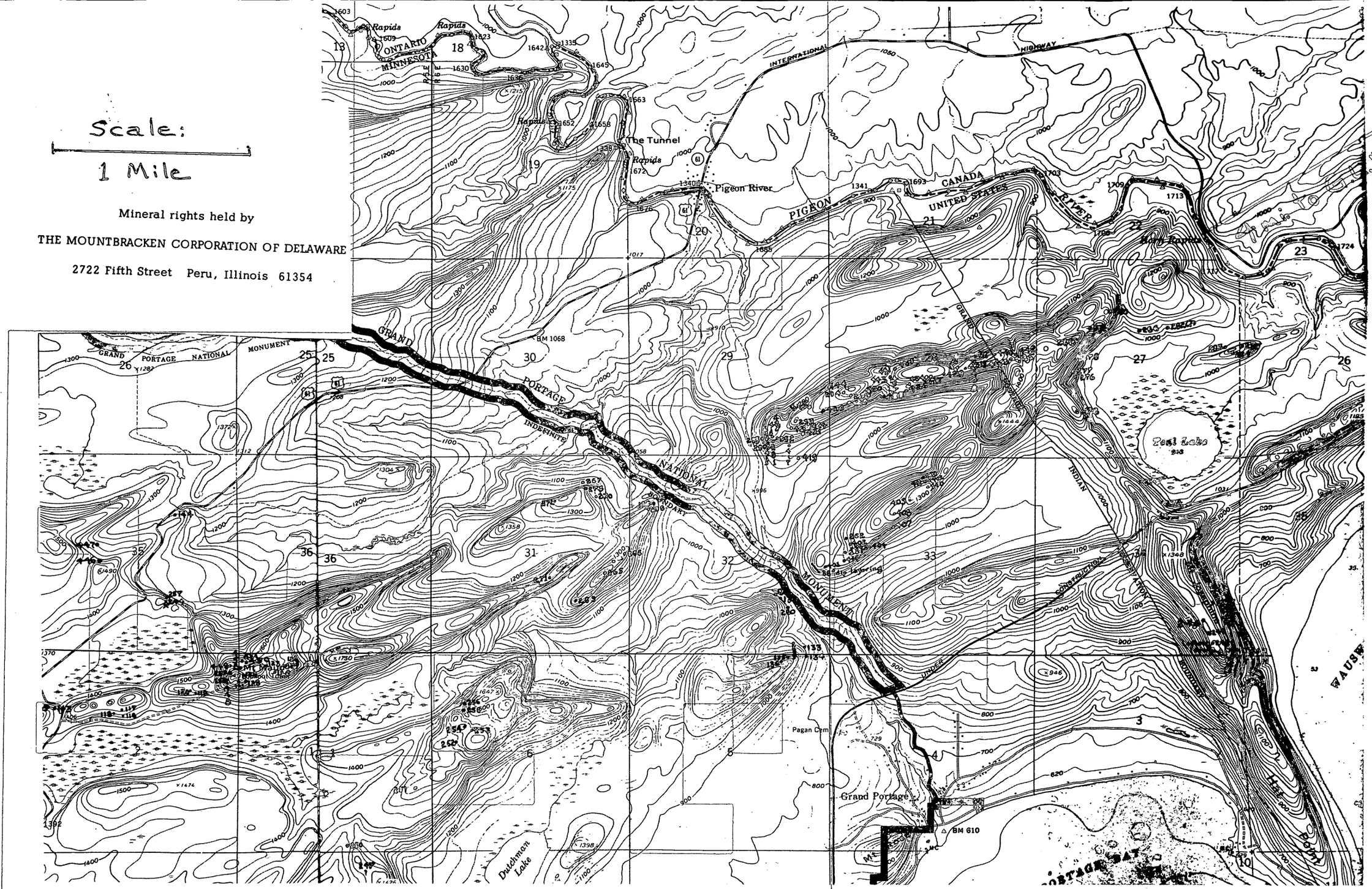
Scale:

1 Mile

Mineral rights held by

THE MOUNTBRACKEN CORPORATION OF DELAWARE

2722 Fifth Street Peru, Illinois 61354



HK

OME-6870 Mountbracken Corporation

PLEASE FURNISH SERVICE(S) INDICATED BY CHECKED BLOCK(S).
REQUIRED FEE(S) PAID.

☐ Show to whom, date and address where delivered ☐ Deliver ONLY to addressee

RECEIPT

*Received the numbered article described below.*

REGISTERED NO.

CERTIFIED NO. 133654

INSURED NO.

DATE DELIVERED 4.12.72

① SIGNATURE OR NAME OF ADDRESSEE (*Must always be filled in*)

② SIGNATURE OF ADDRESSEE'S AGENT, IF ANY

Anne M. Ceresa

③ SHOW WHERE DELIVERED (*only if requested*)

c55—16—71548-11 347-198 GPO

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RECEIPT

*Received the numbered article described below.*

REGISTERED NO.

CERTIFIED NO. 133656

INSURED NO.

DATE DELIVERED 4-14-72

① SIGNATURE OR NAME OF ADDRESSEE (*Must always be filled in*)

Anne M. Ceresa

② SIGNATURE OF ADDRESSEE'S AGENT, IF ANY

③ SHOW WHERE DELIVERED (*only if requested*)

MME Form 7
(2/63)

OFFICIAL FILE COPY

| Date | Surname | Code |
|---|---|---|
| 4/7/72 | Rawlich | 120 |
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| | | 120M |
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APR 7 1972

Mr. Leroy M. Ceresa
Secretary-Treasurer
The Mountbracken Corporation
2722 Fifth Street
Peru, Illinois 61354

Re: OME-6870 (Nickel, Copper, Platinum)
The Mountbracken Corporation
Mountbracken Property
Cook County, Minnesota

Dear Mr. Ceresa:

This is to advise you that we are returning under separate cover, by certified mail, with return receipt requested, the two copies of all material marked "Please return" which you sent with your application. This also will confirm our telephone conversation on April 3, 1972, regarding the application and the situation with respect to the OME program.

Budget constraints this fiscal year have restricted the OME program to the point where only modest assistance is available to a very few of the more promising proposals received. Accordingly, Government assistance for individual projects has ranged up to only $35,000 or $40,000 on the few contracts awarded this year. Available funds this year either have been obligated or will be obligated for contracts now in preparation. The same budget constraints are expected to continue in fiscal year 1973 beginning July 1, 1972. Under this situation, we cannot consider offering assistance in the full amount requested in your application. A less extensive program would have to be planned in the event a favorable exploration target is defined by prior geologic work, sampling, prospecting, or preliminary exploration work.

The extensive program that you outlined presumes that a large deposit of low-grade material similar to the Great Lake-Thunder Bay deposit exists on your property, whereas the preliminary work already accomplished is not that definitive. Some surface geologic work, sampling, geochemical and geophysical prospecting, or preliminary exploration work is essential in order to determine whether or not an exploration target exists. This preliminary work is in general not eligible for OME assistance, but is needed to establish a sound basis for your own decisions on whether to proceed into extensive exploration. In the event worthwhile targets are defined, we would be pleased to consider a revised application within the limits of our funds.

We were advised recently that enclosed Exhibit A entitled, "Notice to Prospective Federally Assisted Construction Contractors" should accompany each application form for the information of the applicant. In the event of an OME contract, additional notices are required as noted in Exhibit A.

We appreciate the opportunity to have reviewed your well-prepared application and the chance to discuss it with you by telephone. We hope that further preliminary work will indicate significant targets, and that we then can assist you. Meanwhile, we will consider your application to be in an inactive status pending further developments, or you may request that it be withdrawn. In the latter event, you may reinstate the application by referring to this docket by number and furnishing the information necessary to update letters to and from banks, cost estimates, and work plans.

Sincerely yours,

Harold Kirkemo

Harold Kirkemo
Chief, Office of
Minerals Exploration

Enclosures

cc: Director's Reading File
Mineral Resources
OME docket
OME Reading File
OME Region IV w/cy of material retained from application
Mr. Kirkemo

HKirkemo/gla 4-7-72

OME 68 70- Mountbrachen Corporation
Notes [redacted] materials returned to [redacted] applicant

Items marked x should be copied for our files.

No. P. 467

Appendix A: (1) Ontario Dept. of Mines Preliminary Geological Map "Pardee Township and Stuart Location". 4 inches = 1 mile

(2) Guel, J.J.C., Geology of Devon and Pardee Townships and the Stuart Location, Ontario Dept. Mines Geol. Report 87, 1970

(3) News items from Northern Miner 1-3-67, 2-16-67, 7-6-67, 8-24-67, 1-1-68, 2-8-68, 5-30-68, and undated, all concerning Great Lakes Nickel Corp. exploration and development

(x) (4) Photocopy of corporate brochure "Great Lakes Nickel Limited" (undated, but post-1969 merger of Thunder Bay and Great Lakes Nickel Corporations.)

(x) ✓ Appendix B: (1) 4 assay sheets, Mountbrachen geochemical sampling, Jan. and May 1971

(2) cover sheet for D M Davidson's report accompanying maps M7 and M8, Minnesota Geol. Survey; to establish regional association of Cu-Ni mineralization and mafic rocks, and to indicate general level of geochemical anomaly (300 ppm Cu and 200 ppm Ni cited as warranting further study.

Appendix C Lease, Grand Portage Co.

Appendix D Prospecting Permit, B.I.A., dated 11-16-71

Appendix E. poor xerox copy of photomicrograph, polished section of Mountbrachen sample, showing sulfides in silicate host.

x Appendix F: Financial statement

Appendix G: List of properties controlled by applicant (9 pages)

Appendices H & I - 1 map of Mountbrachen property, showing sample locations (covers parts of 3 - 7½ minute quads along Canadian Boundary, eventually bracketed by Grand Portage National Monument)

Appendix J. – Grout, et al, Geology of Cook County, Minn., Minn. Geol. Survey Bull. 39, 1959

Appendix K – Grout and Schwartz, Geology of Rove Formation and associated Intrusives, Minn. Geol. Survey Bull. 24, 1933

[Long dissertation on granitic (= pegmatitic? of applicants) phase of diabase (= gabbro). Mineralization (Cu, Ag) seems to be associated with this "red rock". Gives some details of old prospects]

Appendix M 4 air photos, dated 5-16-57 – 3F-7, GS-CEK
" 3B-8, GS-CEK

dated 5-6-59, 1B-19, GS-CEK
", 1F-18 GS-CEK

Appendix N Polaroid – Geologic map after Grout

" O " Cu analyses overlay, geochem samples

" P " Ni " " , " "

" Q Table 3 from publication called in A(2), " "

" R Map of suggested drill sites

" S Environmental statement

" T Various papers by PK Sims et al on Cu-Ni deposits associated with Duluth gabbro.

* " U. 3 Card letters.