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PROSPECTUS OF LEGER MINES (1964) LIMITED

Under the Securities Act (Ontario)

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1. Leger Mines (1964) Limited (hereinafter called "the Company") was incorporated under Part IV of the Corporations Act, 1953, of the Province of Ontario by Letters Patent dated March 17, 1964. Its head office is Suite 1502, 80 Richmond Street West, Toronto, Ontario.

2. *President and Director*.....

ARTHUR STEWART BAYNE,
45 Strathallan Boulevard,
Toronto, Ontario.
Consulting Mining Engineer.

Vice-President and Director.....

LLOYD EDGAR LEGER,
River Valley, Ontario.
Prospector.

Secretary and Director.....

LOUIS BRUN,
Field, Ontario.
General Contractor.

Treasurer and Director.....

ROYAL ALPHONSE VAILLANCOURT,
183 Levesque Street,
Sturgeon Falls, Ontario.
Business Executive-Owner.

Director.....

JEAN-PAUL RAYMOND,
4 Belanger Street,
Verner, Ontario.
Business Executive-Owner.

Leger Mines Limited (Private Company) and Macs Grubstake Syndicate, both of Suite 1502, 80 Richmond Street, West, Toronto, Ontario, may be considered Promoters by virtue of having caused the incorporation of the Company and being the vendors of the properties sold to the Company.

3. *Auditors*.....

LOFTUS A. ALLEN & COMPANY,
48 Yonge Street,
Toronto, Ontario.
Chartered Accountants.

4. *Transfer Agent and Registrar*.....

NATIONAL TRUST COMPANY LIMITED,
21 King Street, East,
Toronto, Ontario.

5. The authorized capital of the Company consists of 5,000,000 shares of a par value of \$1.00 each of which 1,355,068 have been issued to date as fully paid.

6. There are no bonds or debentures outstanding nor does the Company propose to issue any at the present time.

7. A total of 1,142,495 shares are pooled and held in escrow. Of these, 900,000 shares are held in escrow by the National Trust Company, 21 King Street, East, Toronto, Ontario, subject to release pro rata to all persons entitled thereto upon the written consent of the Ontario Securities Commission and the Board of Directors of the Company. Written consent of the Ontario Securities Commission is also required for the transfer or other alienation of shares within the escrow. The balance of 242,495 shares are pooled subject to a voluntary agreement whereby the shares are held in trust by the National Trust Company Limited, the same being subject to release pro rata to all persons entitled thereto not earlier than six months following the date when this prospectus is accepted for filing by the Ontario Securities Commission, such release to be conditional upon the written consent of the Board of Directors of the Company.



8. The following shares have been sold for cash:

| | | |
|---------------------------------|-------|---------------------------|
| 5 shares at \$1.00 per share | _____ | \$ 5.00 |
| 200,000 shares at .10 per share | _____ | 20,000.00 |
| 12,568 shares at .12½ per share | _____ | 1,570.96 |
| Total: 212,573 shares | _____ | <u>\$21,575.96</u> |

In addition, as stated in paragraph 10 (b), the following shares have been issued for cash expended on the Company's properties by the vendors.

| | | |
|-----------------------------------|-------|---------------------------|
| 187,432 shares at 12½¢ per share | _____ | \$23,429.00 |
| 55,063 shares at 15¢ per share | _____ | 8,259.51 |
| Total 242,495 shares | _____ | <u>\$31,688.51</u> |
| Grand Total 455,068 shares | _____ | <u>\$53,264.47</u> |

No commission was paid or is payable in respect of the said shares. There are no securities of the Company other than shares.

9. No shares have been issued or are to be issued nor was any cash paid nor is payable for promotional or other services.
10. (a) The Company has acquired and is the registered holder of 50 unsurveyed and unpatented contiguous mining claims (comprising an area of approximately 2,000 acres) as defined in the Ontario Mining Act, in the Timiskaming and Sudbury Mining Divisions, Province of Ontario. These claims are described in detail in the reports by J. R. Mowat, Consulting Geologist, and A. C. A. Howe, P.Eng., Mining Engineer, attached to and forming a part of this prospectus, and are recorded by the Mining Recorder as follows: Claim Nos. T. 51861 to T. 51864 inclusive; T. 51909 to T. 51913 inclusive; T. 52375 to T. 52378 inclusive; T. 53334 to T. 53337 inclusive; T. 53551; T. 53552; T. 53392, in the Timiskaming Mining Division; also Claim Nos. S. 118474 to S. 118488 inclusive; S. 118303 to S. 118307 inclusive; S. 119010 to S. 119013 inclusive; S. 119025 to S. 119027 inclusive; S. 119015; S. 119018; S. 119545, in the Sudbury Mining Division.
- (b) By agreements dated April 27, 1964, the Company purchased, from Leger Mines Limited (Private Company) and Macs Grubstake Syndicate as vendors, the said 50 claims in consideration of 900,000 shares of the capital stock of the Company. Under the same agreements, the Company issued an additional 212,568 shares, in consideration of \$21,570.96 in cash and 242,495 shares in consideration of the expenditure, on the Company's claims by the vendors, of \$31,688.51, (as stated in paragraph 8).

Of the total of 1,355,063 shares of the capital stock of the Company received by the vendors, Leger Mines Limited (Private Company) is entitled to 1,000,000 shares (of which 900,000 shares have been placed in escrow as stated in paragraph 7), and Macs Grubstake Syndicate is entitled to 355,063 shares, (of which 242,495 shares have been voluntarily pooled and are held in escrow as stated in paragraph 7).

- (c) To the knowledge of the signatories hereto, there are no persons entitled to receive from the vendors a greater than 5% interest in the shares received by them, except that note should be taken of the following:
- i. Upon distribution by Macs Grubstake Syndicate of vendors shares to which it is entitled —
— and —
 - ii. Upon surrender of charter and distribution of assets by Leger Mines Limited (Private Company) —
the following will hold a greater than 5% interest in the vendors' consideration:

| | |
|-----------------------------|-------------------------------|
| Maurice Bisailon | P.O. Box 250, Val Caron, Ont. |
| Arthur Stewart Bayne | (address per paragraph 2) |
| Lloyd Edgar Leger | " " " " |
| Louis Brun | " " " " |
| Royal Alphonse Vaillancourt | " " " " |

The foregoing presumes that there is no transfer of interest in the said Syndicate for the shares of the Private Company.

11. (a) An account of the known history of the properties, their accessibility and the extent of any exploration work thereon is contained in the report by J. R. Mowat, Consulting Geologist, dated January 10, 1964, and the reports by A. C. A. Howe, Mining Engineer, dated February 7, 1964, and May 27, 1964, to which reference is hereby made and which accompany and form a part of this prospectus. There is no underground plant or equipment on the Company's properties. There is a winterized camp building suitable for the accommodation of six men and a winterized building suitable for drill-core storage and field office, a portable power-operated surface rock-drill and accessory equipment and surveying equipment on the Company's properties.
- (b) The Company intends to expend the proceeds from the current sales of its securities in accordance with the recommendations of the Company's Consulting Engineer in exploring and developing the above claims and for general operating expenses.
12. The Company holds a Security Issuer's Licence from the Ontario Securities Commission and will issue the shares of the Company to the public at a price not less than 25¢ per share net to the treasury. No commission is payable on such sales. Shares may also be offered to the public through the medium of registered security dealers at a commission of not more than 25%. Under such sale of shares, not less than 25¢ per share will be paid to the treasury of the Company.
13. (a) Approximately \$43,688 has been spent on the Company's properties by its predecessors in title. Of this, \$31,688.51 has been spent by the vendors in the past year. The Company has spent, to date, approximately \$6,000 (including preliminary administrative and organization expense, Governmental and legal fees and expenses, etc.), on its properties, in preliminary engineering and preparation for diamond-drilling. Any future expenditures will depend upon the recommendation of the Company's Consulting Engineer and the amounts received by the Company through the sale of its shares. The Company has authorized its Consulting Engineer, A. S. Bayne & Company, by an agreement dated April 22, 1964, providing for performance of further exploratory work, including preliminary diamond-drilling to the value of \$15,000 in accordance with the recommendations in the Mowat report dated January 10, 1964, and the report by A. C. A. Howe, P.Eng., May 27, 1964.
- (b) Future administrative expenses, including head office accommodation and secretarial and accounting services are estimated at \$250 per month for the first twelve months of operation.
- (c) There is no indebtedness to be created or assumed other than commitments in the regular course of the Company's business which is not shown on the balance sheet dated May 25, 1964, accompanying and forming a part of this prospectus and to which reference is hereby made.
14. (a) The following are the particulars with regard to the principal business in which each Director has been engaged during the past three years:

| | |
|----------------------------------|---|
| Arthur Stewart Bayne..... | Self-employed — A. S. Bayne & Company, Consulting Engineers, Toronto, Ontario. |
| Lloyd Edgar Leger..... | Self-employed — Prospector, except from May 1, 1963, to November 30, 1963, employed as field manager by Leger Mines Limited (Private Company), River Valley, Ontario. |
| Louis Brun..... | Self-employed — General Contractor, Field, Ontario. |
| Royal Alphonse Vaillancourt..... | President, Royal A. Vaillancourt Company Limited, Sturgeon Falls, Ontario. |
| Jean-Paul Raymond..... | Self-employed — J. P. Raymond Insurance Agency, Verner, Ontario. |
- (b) All of the Directors have a direct interest in the properties acquired by the Company by reason of the fact that they are shareholders of Leger Mines Limited (Private Company) and/or members of Macs Grubstake Syndicate. Upon the distribution of shares as stated in paragraph 10 (c), the shares of capital stock of the Company held by the Directors will be as follows:

| | |
|-----------------------------|----------------|
| Arthur Stewart Bayne | 215,517 shares |
| Lloyd Edgar Leger | 197,956 shares |
| Louis Brun | 162,762 shares |
| Royal A. Vaillancourt | 138,844 shares |
| Jean-Paul Raymond | 20,000 shares |

(c) No remuneration has been paid to any officer or director of the Company since incorporation and it is not anticipated that any will be paid during the current financial year except an honorarium of \$50.00 each for each meeting of Directors which they attend.

15. No dividends have been paid by the Company.

16. By reason of the ownership of vendors' shares Leger Mines Limited (Private Company), Suite 1502, 80 Richmond Street, West, Toronto, Ontario, is in a position to elect a majority of the Directors of the Company.

17. (a) There is no agreement for the sale of vendor shares, except as noted in paragraph 17(b) following, but the signatories are advised that the holders of any vendor shares, which are now free or may hereafter be released from escrow, may offer such shares for sale and, if sold, the proceeds resulting from such sale will not accrue to the treasury of the Company.

(b) The vendors (stated in paragraph 10 (b)) have directed 20% of their vendor shares to be held in trust by the National Trust Company Limited, 21 King Street East, Toronto, Ontario, to be used at the discretion of the Company's Directors to assist in financing the Company. Of these shares, Leger Mines Limited (Private Company) has contributed 200,000 escrowed shares and Macs Grubstake Syndicate has contributed 71,013 escrowed shares.

The foregoing constitutes full, true and plain disclosures of all material facts in respect of the offering of securities referred to above as required under Section 38 of the Securities Act (Ontario) and there is no further material information applicable other than in the financial statements or reports where required.

PROMOTERS

MACS GRUBSTAKE SYNDICATE

per L. BRUN

Leger Mines Limited (Private Company)

A. S. Bayne, President

L. Brun, Secretary-Treasurer

DIRECTORS

A. S. BAYNE

LLOYD LEGER

L. BRUN

ROYAL A. VAILLANCOURT

J. P. RAYMOND

Dated at Toronto, Ontario,
the 12th day of June, 1964.

| | |
|-----------------------------|----------------|
| Arthur Stewart Bayne | 215,517 shares |
| Lloyd Edgar Leger | 197,956 shares |
| Louis Brun | 162,762 shares |
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17. (a) There is no agreement for the sale of vendor shares, except as noted in paragraph 17(b) following, but the signatories are advised that the holders of any vendor shares, which are now free or may hereafter be released from escrow, may offer such shares for sale and, if sold, the proceeds resulting from such sale will not accrue to the treasury of the Company.
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The foregoing constitutes full, true and plain disclosures of all material facts in respect of the offering of securities referred to above as required under Section 38 of the Securities Act (Ontario) and there is no further material information applicable other than in the financial statements or reports where required.

PROMOTERS

MACS GRUBSTAKE SYNDICATE
per L. BRUN
Leger Mines Limited (Private Company)
A. S. Bayne, President
L. Brun, Secretary-Treasurer

DIRECTORS

A. S. BAYNE
LLOYD LÉGER
L. BRUN
ROYAL A. VAILLANCOURT
J. P. RAYMOND

Dated at Toronto, Ontario,
the 12th day of June, 1964.

LEGER MINES (1964) LIMITED

(Incorporated under the Laws of Ontario)

BALANCE SHEET

As at May 25, 1964

ASSETS

| | | |
|--|--------------|---------------------|
| Cash | | \$ 15,448.88 |
| Accounts Receivable | | 159.40 |
| Mining Claims — at cost | | |
| 27 Contiguous unpatented mining claims in the Districts of Sudbury and Temiskaming, Ontario acquired from Leger Mines Limited in consideration of the issue of 573,333 shares | \$ 57,333.30 | |
| 23 Contiguous unpatented mining claims in the Districts of Sudbury and Temiskaming, Ontario acquired from Macs Grubstake Syndicate in consideration of the issue of 326,667 shares | 32,666.70 | 90,000.00 |
| Deferred Development and Administrative Expenses — per statement | | 35,406.19 |
| Incorporation Expenses | | 2,250.00 |
| | | <u>\$143,264.47</u> |

LIABILITIES

| | | |
|---|-----------------|--------------|
| CAPITAL | | |
| Authorized: | | |
| 5,000,000 shares of a par value of \$1.00 each | \$ 5,000,000.00 | |
| Issued: | | |
| For Mining Claims | | |
| 900,000 shares of \$1.00 each | \$ 900,000.00 | |
| Less: Discount on shares | 810,000.00 | \$ 90,000.00 |
| For Deferred Development Expenses incurred by the vendors | | |
| 242,495 shares of \$1.00 each | \$ 242,495.00 | |
| Less: Discount on shares | 210,806.49 | 31,688.51 |
| For Cash | | |
| 212,573 shares of \$1.00 each | \$ 212,573.00 | |
| Less: Discount on shares | 190,997.04 | 21,575.96 |

The Company was incorporated on March 17, 1964 and commenced operations immediately. The consideration received for the issue of all shares is shown above.

Approved on behalf of the Board:

A. S. BAYNE, Director.

L. BRUN, Director.

\$143,264.47

AUDITORS' REPORT TO THE SHAREHOLDERS

We have examined the balance sheet of LEGER MINES (1964) LIMITED as at May 25, 1964 and the statement of deferred expenditures for the period from the date of incorporation on March 17, 1964 to May 25, 1964. Our examination included a general review of the accounting procedures and such tests of the accounting records and other supporting evidence as we considered necessary in the circumstances.

In our opinion, the accompanying balance sheet and statement of deferred expenditures present fairly the financial position of the Company as at May 25, 1964 and the results of its operations from the date of incorporation to May 25, 1964, in accordance with generally accepted accounting principles.

Toronto, Ontario,
June 12, 1964.

LOFTUS A. ALLEN & COMPANY,
Chartered Accountants.

LEGER MINES (1964) LIMITED

STATEMENT OF DEFERRED EXPENDITURES From date of Incorporation on March 17, 1964 to May 25, 1964

| | For Shares | For Cash | Total |
|---|--------------------|-------------------|--------------------|
| DEVELOPMENT EXPENSE | | | |
| Staking and recording | \$ 1,365.30 | \$ — | \$ 1,365.30 |
| Geological and geophysical surveys | 3,264.56 | — | 3,264.56 |
| Line cutting | 2,693.35 | — | 2,693.35 |
| Rock trenching | 3,824.38 | — | 3,824.38 |
| Stripping | 1,731.25 | — | 1,731.25 |
| Trucking and transportation | 3,497.79 | 275.00 | 3,772.79 |
| Cookery expense | 2,083.90 | — | 2,083.90 |
| Field travel expense | 1,159.56 | 738.34 | 1,897.90 |
| Diamond drilling | 136.10 | — | 136.10 |
| Sampling and assaying | 680.15 | — | 680.15 |
| Consulting engineer | 369.35 | 500.00 | 869.35 |
| Temporary mine buildings and equipment | 1,998.28 | — | 1,998.28 |
| Insurance on buildings and equipment | 231.50 | — | 231.50 |
| Unemployment insurance and workmen's compensation | 190.17 | — | 190.17 |
| Field expense | 209.85 | 287.97 | 497.82 |
| | <u>\$23,435.49</u> | <u>\$1,801.31</u> | <u>\$25,236.80</u> |
| ADMINISTRATIVE EXPENSE | | | |
| Engineering and management fees | \$ 4,687.50 | \$ 562.50 | \$ 5,250.00 |
| Draughting and blue prints | 1,314.18 | 1,118.00 | 2,432.18 |
| Telephone and telegraph | 289.50 | — | 289.50 |
| General office expense | 340.88 | 235.87 | 576.75 |
| Travel expense | 200.00 | — | 200.00 |
| Accounting services | 200.00 | — | 200.00 |
| Interest and bank charges | 119.52 | — | 119.52 |
| Legal and audit | 1,101.44 | — | 1,101.44 |
| | <u>\$ 8,253.02</u> | <u>\$1,916.37</u> | <u>\$10,169.39</u> |
| | <u>\$31,688.51</u> | <u>\$3,717.68</u> | <u>\$35,406.19</u> |

ASSESSMENT
of part of
LEGER MINES LTD. PROPERTY

Afton, Scholes, MacBeth, and Clement Townships
Districts of Sudbury and Timiskaming, Ontario

by

J. R. MOWAT, Geologist
Ottawa, Ontario, January 10, 1964

CERTIFICATE

I, James Rodman Mowat, do hereby certify that:

1. I am a Consulting Geologist, practising under the name and style of J. R. Mowat & Associates, with office at 217 - 56 Sparks Street, Ottawa 4, Ontario.
2. I am a Bachelor of Science in Arts (Geology Major), University of New Brunswick, Fredericton, New Brunswick, 1948.
3. I have practised my profession continually for more than 15 years during which time I have been in responsible management positions for 12 years.
4. I have no direct, indirect, nor expected interest in the properties or securities of Leger Mines Ltd.
5. This Certificate is part of the attached "Assessment of part of Leger Mines Ltd. Property, Afton, Scholes, MacBeth and Clement Townships, Districts of Sudbury and Timiskaming, Ontario".
6. This report is based on:
 - (i) My personally conducting the Geological Survey
 - (ii) Completion of Magnetic and Geochemical Surveys by myself and a qualified assistant under my supervision.
 - (iii) Full cognizance of the facts.

Signed at Ottawa in the County of Carleton,
this 10th day of January, 1964.

J. R. MOWAT.

SUMMARY

1. Geology

(a) The property is underlain by Keewatin volcanics and Timiskaming sediments, differentially intruded by laccolithic masses of basic rocks, from early post-Temiskaming to Nipissing times. The intrusives form steeply-dipping dykes to flat-lying sill-like masses, varying in thickness from a few feet to an estimated 300 feet.

(b) Steeply dipping members of the Keewatin basic volcanic-iron formation and Timiskaming quartzite-chert-limestone Series overlay and underlay the intrusive unconformably in the Iron Mountain Area and to a limited extent, in the central part of the grid.

(c) Remnant cap limestone of possibly younger age than the Timiskaming covers a large area of Iron Mountain, apparently flatly dipping unconformable with the Keewatin-Temiskaming members.

(d) Dykes of Algonian feldspar porphyry occur within the grid area to the south and west of Iron Mountain.

(e) No folding was noted, although localized drag-folding of the Keewatin iron formation associated with a northeast fault traversing Iron Mountain, has been hypothesized from magnetic evidence. This structure is of economic significance. Considerable multi-directional faulting and contact shearing accompanied the Keweenaw intrusion and superseded it.

Economic Minerals

Late stage occurrences of economical minerals were noted in three main environments:

Patches of massive and coarsely crystalline chalcopyrite with minor associated gold values in flat-dipping discontinuous fissure type quartz veins and lenses along the basic intrusive Timiskaming contact in north-central areas of the grid.

Replacement of finely disseminated copper, zinc sulphides within massive pyrite-magnetite (iron formation) bodies in Iron Mountain Area.

As patchy, coarsely crystalline lead, zinc sulphides within altered limy quartzites in Iron Mountain Area.

The concentrations of these minerals, in the limited outcrops exposed, while not comprising economic deposits, are important indicators of possible economic concentrations in the areas indicated by correlated geological, geophysical and geochemical surveys.

3. Magnetism

1. The general magnetic relief of outcrop areas of basic intrusive is 200 gammas higher than over areas of outcropping Timiskaming sediments. Locally within the intrusive complex where magnetite has been developed, erratic spot highs between 500 and 1,000 gammas residual have been encountered.

2. Intense off scale positive and negative values have been established over iron-rich phases of the Keewatin volcanics on Iron Mountain. These values have been noted locally to continue into areas where cap limestone has been found to overlie the Keewatin.

3. Distortion of the foregoing anomalous trend on the eastern sector of Iron Mountain is apparently the result of post Keewatin-Timiskaming faulting. Geochemistry, correlated with magnetic results indicates economic capability in this area.

4. In a few instances magnetic off-scale values within the outcropping Keewatin have been partly explained by examination of old pits. Generally heavy to massive magnetite and/or magnetic sulphides have been noted. These workings are quite restricted and in no instance was an adequate cross-section of the entire width or flank of the anomaly area achieved. Mineral zoning is indicated in several of these instances.

5. A ring of negative polarity surrounds Iron Mountain corresponding to the topographic base of the hill. This condition is believed to be dipolar effect resulting from the unconformable intrusion of the younger basic "sill" structure into the Keewatin-Timiskaming complex.

4. Geochemistry

1. Several anomalous soil values resulted from the north grid survey. These lack zoning and may be accounted for by proximity to known mineral occurrences.

2. Evaluation of geochemical results on the southern part of the grid is based on a statistical determination of background and basic anomalous values involving some 466 individual sample locations.

3. All of Iron Mountain lies within a zinc anomalous halo.

4. Extensive well zoned copper-zinc anomalies, locally of off-scale intensity flank the iron formation complex on Iron Mountain.

5. The incidence of lead in the soil is generally restricted although locally high values have been obtained in association with above noted zoning.

6. Examination of old iron formation outcrops do not indicate a sufficiently high copper-zinc sulphide content to account for the intensity and zoning of copper-zinc values yielded by the survey elsewhere on Iron Mountain.

CONCLUSIONS

On a basis of a correlated study of the geological-magnetic-geochemical information supplemented by examination of the known mineral occurrences, and a perusal of early work records on the property of Leger Mines Limited, I conclude:

1. That sufficient geological-geophysical-geochemical correlation has been achieved on Iron Mountain, to conclude that heretofore untested concentrations of copper-lead-zinc sulphides are associated with the magnetite and/or magnetic sulphides, possibly as zoned deposits flanking the more magnetic zones.

2. That deposits of economic importance to be located on the property, are more likely to be associated with the Keewatin-Timiskaming complex in the Iron Mountain area, either as replacement enrichment of copper-lead-zinc sulphides within the iron formation, or as physically zoned replacement bodies adjacent to it.

3. That further exploration of the copper-gold mineralization occurring in contact quartz fissure veins on the north grid, would be difficult without diamond drilling. Many of these occurrences are overlain by from 50 to 100 feet of basic "sill", precluding response to any known geophysical aid.

4. I have reached these conclusions after due regard to early drilling by Noranda Mines Limited, in which a 45-degree hole to the south, designed to intersect the trenched sulphides on the northeast flank of Iron Mountain, bottomed in diabase between core-footage of 141 and 475 feet.

While it is clear that at this point, the sill structure has cut the downward continuity of the sulphides, the apparent surficial plunge of this structure, (20 degrees southward), would present a shallow angle to the inclination of the drill hole. This core intersection, therefore, may bear little relation to the actual true thickness of the diabase.

Phase 1 drilling, as outlined in the "Recommendations", following, is designed primarily to test the indicated sulphide bodies at a shallow depth to the hangingwall contact of the diabase. If this work bears out the conclusions above-noted, the logical next step will be to determine the true thickness of the sill structure, as a prelude to footwall drilling which would be carried out in subsequent phases.

RECOMMENDATIONS

Subject surveys have provided a sound basis for controlled follow-up work. Further geophysical work should be suspended until the Company has a quantitative knowledge of the existing mineral indications by diamond drilling.

I specifically recommend, as a preparatory step to diamond drilling, the following:

1. Engineering Preparation, Elevation and Grid Detail Iron Mountain Area

To guide and effect adequate interpretation of drilling in areas of irregular relief, drilling should be preceded by the establishment of elevation profiles over pertinent section lines and geology correlated therewith. For this purpose the following preliminary work is required.

- (a) Completion of 3,600 lineal feet of *surveyed* baseline, line brushing, etc. (Zero and 1500N).
- (b) Completion of 1,600 lineal feet of *surveyed* drill baseline (at 1000N).
- (c) Completion of 7,200 lineal feet of elevation profiling to cover the immediate area to be drilled (Sections 2W, 4W, 6W, 8W).
- (d) Completion of 5,000 lineal feet of intermediate interval picket line for closer survey or drill control as required (Between Sections 0 and 10W).

2. Drill Preparation

- (a) *The Company should be financially prepared* for an initial minimum drill program of 5,000 feet, to be allocated in successive phases as detailed in this report following.
- (b) *Tenders* should be let out to at least three established drill organizations for upset open-end contract prices on a firm 2,500 feet of AXT drilling with scaled reductions for each 2,000 feet beyond this total.
- (c) *An access tractor road* to service following drill sites should be established. This may be difficult due to rough topography but will in the long run effect savings in lower drill and engineering costs.
- (d) *A winter core shack* at least 24' x 16' should be built and equipped at existing camp location.

3. Diamond Drilling

Initial holes should be relatively short (about 350 feet) and of a cross-sectional nature for correlation purposes, and not too widely spaced in above area due to the currently unknown topographic location of the intrusive sill, and the probability of sharp zoning around iron formation lenses as a result of local folding. These fold areas offer the best control environment for late base metal replacement, but dictate a moderately spaced drill section interval initially rather than the exploration interval normally employed.

In event any hole bottoms in the intrusive "sill" before completion to proposed depth, the location of advancing hole on section would be accordingly revised.

It is anticipated, (in addition to above locations), that considerable structural and "sill" footwall filling to depth will be required should results from the foregoing program justify.

Similarly, the drill grid would then be extended to anomaly areas A, B, C, and H.

4. Acquisition of Additional Claims

It is understood that the company is considering the acquisition of additional claims, contiguous to the east and west of the present holdings. These claims, in order to give the company maximum and most economic protection, should, insofar as practicable, safely cover the projected extension of the strike of the Iron Mountain sulphide zones. The surveys now completed and covered in this report, indicate that these zones are well within a band, approximately ¼ mile wide, striking approximately North 60 degrees West - South 60 degrees East, through the middle of Claims Nos. T-53551 and T-53552.

COST — TIME SCHEDULE

Phase 1

Following is the estimated cost and time schedule of the initial drill program:

| | | | |
|----|---|--------------------|---------------------|
| 1. | Engineering Preparation (Elevation and survey control of drill locations) | \$ 950.00 | 12 days |
| 2. | Drill Preparation Access road, etc. | \$1,100.00 | 7 days |
| | Core shack | 1,500.00 | 100 days |
| | | <u>2,600.00</u> | |
| 3. | Diamond Drilling, 2,500 ft. @ \$5/ft. (incl. cost) | 12,500.00 | |
| | | <u>\$16,050.00</u> | |
| 4. | Indirect Cost, Engineering and Supervision | 4,000.00 | |
| | TOTAL ESTIMATED COST — Phase 1 | | \$ 20,050.00 |

Phase 2

In order to budget expenditure in accordance with the results obtained in Phase 1, the following is the estimated cost and time schedule following completion of Phase 1 work.

| | | | |
|----|---|-------------|---------------------|
| 1. | Diamond Drilling, 2,500 feet @ \$5/ft. (incl. cost) | \$12,500.00 | 2 months |
| 2. | Indirect Cost, Engineering and Supervision | 4,000.00 | |
| | TOTAL ESTIMATED COST — Phase 2 | | \$ 16,500.00 |

Phase 3

Providing the results obtained from the work recommended under Phase 1, and Phase 2 of the initial drilling, warrant, the following minimum confirmatory drill program will be required.

| | | | |
|----|--|------------|---------------------|
| 1. | Additional core storage | \$2,500.00 | |
| | Office and Staff Accommodation | 5,000.00 | \$ 7,500.00 |
| | | | 15 days |
| 2. | Diamond Drilling, 10,000 feet @ \$5/ft. (incl. cost) | 50,000.00 | 6 months |
| 3. | Indirect Costs: | | |
| | Engineering and Supervision | 12,000.00 | |
| | Contingency @ 15% | 10,425.00 | |
| | TOTAL ESTIMATED COST — Phase 3 | | \$ 79,925.00 |
| | GRAND TOTAL ESTIMATED COST — (Phase 1, 2 and 3) | | \$116,475.00 |

It is the writer's opinion that the above estimated expenditure for Phase 1 drilling, is the minimum expenditure warranted by the known facts, and that this work should be commenced as soon as possible.

TERMS OF REFERENCE

At a Toronto meeting in early September, 1963, I was requested by Mr. A. S. Bayne, President of the Company, to undertake a combined geological, magnetic and geochemical survey of Leger Mines Ltd. Property in the Timagami Area of Ontario.

The preliminary examination involving geological mapping and soil survey was completed September 20th and a report was submitted to the President outlining certain recommendations for curtailment of work in certain areas and extension of the survey work in others.

These recommendations were implemented between October 19th and 30th when additional geological and geochemical work was undertaken, supplemented by recommended magnetic survey coverage of a restricted area of the grid.

This report is a compilation of the results of these surveys including specific suggestions as to the economic potential of the property and the scope of future exploration.

PROPERTY

The holdings of Leger Mines Ltd. comprise a group of 27 contiguous claims having an approximate area of 1,080 acres located in two Mining Divisions as follows:

S-118484 to S-118486 inclusive } MacBeth Township, Sudbury Mining Division.
S-118304 to S-118307 inclusive }
S-118474 to S-118483 inclusive and S-118303 — Afton Township, Sudbury Mining Division.

T-51861 — Scholes Township, Timiskaming Mining Division.

T-51862 to T-51864 and T-51909 to T-51913 — Clement Township, Timiskaming Mining Division.

It is understood the company also holds the right to purchase the following 11 contiguous claims, adjoining the above holdings to the south and east:

T-53551 and T-53552 }
T-52375 to T-52378 inclusive } Clement Township, Timiskaming Mining Division.
T-53334 to T-53336 inclusive }

S-118487 and S-118488 — MacBeth Township, Sudbury Mining Division.

It is also understood that the company is considering the acquisition of an additional 12 claims, contiguous to the east and west of the foregoing holdings, to protect the company's interest along the indicated strike projections of the Iron Mountain Sulphide zones described in this report. The claim numbers are:

T-53337 — Clement Township, Timiskaming Mining Division.

S-119545 }
S-119011 to S-119013 } MacBeth Township, Sudbury Mining Division.
S-119018 }
S-119025 and S-119026 }

S-119010, S-119015, S-119027 — Afton Township, Sudbury Mining Division.

LOCATION — ACCESS, ETC.

Highway 805 from River Valley, on the C.N.R. North Bay — Capreol Line, to the Golden Rose Mine near the north end of Emerald Lake traverses the claims in a north-south direction. The 28 miles from River Valley to the Property is chiefly gravel road, but suitable for ordinary motor traffic.

The topography of the area is quite rugged, typical of the Timagami area.

The property is unserved by hydro or communication. Leger Mines have established a comfortable camp at the north end of Manitou Lake, suitable for six man accommodation.

HISTORY AND DEVELOPMENT

1. Area

Leger Mines Limited lies in the "River Valley Tourist Region", at the southwest section of the Timagami Forest Reserve.

Although the area occupies only a 50-mile stretch between the copper-nickel producing Sudbury district to the southwest and the copper producing Timagami district to the northeast, prospecting and geological work has, to date, been spasmodic and superficial in scope.

E. S. Moore completed mapping of Afton and Scholes Townships in 1936, the main point of interest being the Golden Rose Mine at the north end of Emerald Lake. His comprehensive report and maps are published in Vol. XLV, Part VI, 1936 of the Ontario Department of Mines. Moore's field reconnaissance apparently did not extend, in much detail, farther south than the south end of Emerald Lake.

Gold was first discovered on the shores of Emerald Lake before 1900 and was reported by Dr. W. G. Miller in Ontario Bureau of Mines Report Volume X, 1901, pp. 175.

In 1909, the Golden Rose Mining Company was incorporated, but little work was done until 1915, when a 30-foot shaft was sunk on a point at the north end of Emerald Lake, and an amalgamation mill installed. Apparently World War I interrupted operations, as nothing further is reported until 1927, when Afton Mines Limited deepened the shaft and carried out some crosscutting and diamond drilling.

In the summer of 1934, New Golden Rose Mines Limited, a subsidiary of Consolidated Mining & Smelting Company of Canada Limited, completed more diamond drilling and underground work. By the end of 1936 a mill was under construction and between 1937 and 1941, the mine produced \$1,664,464 in gold from 144,237 tons of ore milled. Operations were discontinued following the increased restrictions and cost increases imposed by World War II.

In the late 1940's and early 1950's, as result of extensive geophysical and geological work, particularly in Scholes and Phyllis Townships, Dr. N. B. Keevil discovered rich copper deposits on the east arm of Lake Timagami. Timagami Mining Company Limited, of which Dr. Keevil is now President, after 4 to 5 years of intensive exploration and development work, commenced production of copper concentrates from a 150 ton-per-day mill in March, 1959. At the end of the fiscal year ending June 30, 1963, this mine had produced, from 212,990 tons milled, 28,407,543 pounds of copper with a total smelter return of \$7,448,190. Net profit for the last fiscal year was reported at \$378,554.

2. Property

According to local residents, interests associated with MacKenzie & Mann, contractors in the building of the Canadian National Railways, tested, in the early 1900's, the magnetic iron formation on Claim No. T.53552, with two diamond drill holes. It is reported that the core was taken out by winter road in early Spring and that the cores were lost when the sleighs broke through the ice and were never recovered.

In 1955 and 1956, some unrecorded work was done on two quartz outcrops on Claims Nos. T.51862 and S.118303, at the north end of the Leger Mines property. Several pits were blasted, up to 30 feet into the side of the outcropping quartz at the base of a 60 to 100-foot diabase bluff. The prospector is reported to have died in 1937 or 1938 and no record can be found of this work.

In 1955-56, Noranda Mines Limited did some work on Claims T.53551 and T.53552 and to the south of Iron Mountain. Reconnaissance geological mapping was done and a magnetometer and electromagnetic survey were conducted. Two short holes, one 185 feet and the other 475 feet, were drilled from the northwest and northeast base of Iron Mountain, respectively. These holes were about $\frac{1}{4}$ mile apart. Although several well defined electromagnetic conductors were mapped by Noranda, on top of Iron Mountain, the E.M. survey was not the actual basis of the drill program. The writer's comment on the implications of this work is noted in the foregoing "Conclusions" in this report.

In 1959-60, Mr. Stan Welsh of Elk Lake, Ontario, explored Iron Mountain with the object of exploiting the magnetite which forms the core of parts of the iron formation. The magnetite was found to be too banded and contaminated to make development as an iron ore feasible.

In June 1962, Mr. Lloyd Leger of River Valley, Ontario discovered an outcrop of white quartz in the southeast corner of S.118303. He obtained a quarrying licence and shipped samples to a ceramic manufacturer in Kingston, Ontario. Prospecting toward the southeast corner of T.51862, he discovered a larger outcrop, which when stripped, promised more economic quarrying of the silica. Upon the initial blasting, however, to a depth of three to four feet, considerable disseminated chalcopyrite was found in the quartz, which eliminated its suitability for use in ceramics.

Mr. Leger notified Mr. A. S. Bayne, Mining Engineer, of Toronto, Ontario, who examined the discoveries in August, 1962. Grab samples taken by Bayne from quartz containing gossan and fresh chalcopyrite, were reported to assay from a trace to 3.90 oz./ton in gold and 1.60 oz./ton in silver. Bayne and Leger entered a grubstake partnership which subsequently was organized as the MACS Syndicate, and

more claims were staked totalling 27 claims, which were acquired by Leger Mines Limited in the Spring of 1963.

Leger Mines Limited opened up extensive rock trenches in the central and south end of T.51862 during June, July and August of 1963, to cross-section the quartz veins, and in August, 1963, J. M. Montgomery, Geologist, of Toronto, was engaged to carry out a systematic sampling of the quartz veins and an examination of the property. The average gold content of the quartz across mineable widths was found to be low, the best sample being obtained in a trench near the southeast corner of T.51862, yielding an assay of 0.54 oz. (\$18.90) per ton across 27 inches.

The work performed revealed significant geological information, in the light of the occurrence of heavy disseminations and small massive segregations of chalcopyrite in the quartz, particularly on the footwall side. The footwall contact was found to be Timiskaming sediments which pitched flatly to the south under Iron Mountain on Claims T.53551 and T.53552. The chalcopyrite commonly carried gold and silver, as demonstrated by the following assays of grab samples taken from mineralized area of the quartz vein by Mr. Leger.

| Sample No. | Gold (oz./ton) | Silver (oz./ton) | Copper (percent) |
|------------|-------------------|---------------------|---------------------|
| 12-1 | 0.07 | 0.62 | 3.98 |
| 12-2 | 0.04 | trace | 2.21 |
| 12-3 | 0.03 | 2.01 | 8.90 |
| 12-4 | 0.04 | 6.25 | 22.88 |

MACS SYNDICATE acquired Claims T.53551 and T.53552 in August, 1963, when they were allowed to lapse by the previous holders, and carried out work on them on behalf of Leger Mines Limited, who hold them under option.

It was considered by Leger Mines Limited that these developments indicated the possibility of important base-metal replacement on the flanks of the iron formation previously only partially explored by other parties on the south part of the property, including Claims T.53551 and T.53552.

The writer was therefore engaged in September, 1963, to complete detailed geological mapping, together with geophysical and geochemical soil sampling. This work confirmed the possibilities indicated by the previous exploratory work and the geochemistry further indicated the possible existence of lead and zinc mineralization in the overburden-covered rocks on top of Iron Mountain.

Follow-up prospecting by Leger personnel on the few outcrops accessible to the northeast of the favourably anomalous areas, has discovered zinc and lead mineralization in the Timiskaming quartzite comprising a good part of Iron Mountain, with grab samples reportedly assaying up to 3.67 percent zinc. A bulk sample across 25 feet of quartzite carried 0.21 percent lead and 0.39 percent zinc. Although these are not commercial values, they are considered important as they are from locations indicated to be in the waste wall rock of the favourably indicated, overburden-covered zones.

Further detail on the writer's findings follow in this report.

PROGRAM

The exploratory work conducted by the writer to date has been concentrated on two grid-line areas called the North Grid and South Grid. The North Grid covers an area 1,000 feet wide by 3,000 feet long extending northwesterly through Claims Nos. S.118303; T.51861; S.118304; T.51862; T.51864; T.51909. The South Grid covers an area 2,400 feet wide from east to west and 4,800 feet long southward from the south end of the North Grid. It covers the whole of Claims Nos. T.53551; T.53552; T.52377 and parts of Claims Nos. S.118305; S.118306; S.118307; S.118487; T.51910; T.51911 and T.52375.

The surveys were controlled by a picket line grid having a line interval of 200 feet. Some magnetic detail locally required closure of interval to 100 feet.

The Geochemical soil sample interval was 100 feet along grid line. Samples were analysed for copper, lead and zinc by the HCL leach, hot extraction method.

Magnetic observations were taken at intervals of 50 feet along line with a Sharpe A-2 Magnetometer having a scale constant of 20 gammas per scale division.

Mapping included an examination of existing showings.

GEOLOGICAL SURVEY

The general aerial table of formations supplied by the Ontario Department of Mines as applicable to subject grid may be summarized as follows:

| | | Grid Extent |
|---------------------|---|--|
| Quaternary | | |
| Pleistocene | Glacial Drift. | West Shore Manitou Lake. |
| Pre Cambrian | | |
| Keweenawan (?) | Nipissing (?) Diabase sill and gabbroic intrusives of various indeterminate age groups. | Differentiated into five intrusive types as noted. |
| Cobalt | Conglomerate-Arkose. | Not noted on Grid. |
| Algoman | Red and Grey Feldspar porphyry. | Minor dyke extent on South and South-western. |
| Timiskaming | Conglomerate, quartzite Arkose, greywacke, limestone. | Iron Mountain and No. 1 Showing Areas. |
| Keewatin | Basement volcanic complex, fragmental and iron formation. | Restricted to Iron Mountain Area. |
| Keweenawan | (Nipissing Sill Complex). | |

Many textural and compositional variations were noted during the examination of this complex. Similarly, the degree of alteration encountered within the sequence varied widely. The writer has differentiated outcrop observations into five sub-groups on a textural-compositional-alteration basis. The only common denominator applicable to the complex as a whole is that all are basic plutonics occurring as part of the sill-like or lacolithic mass (or masses) underlying this part of the Leger Property.

Establishment of distinctive age relationships within the complex itself, and the ability to differentiate on a basis of textural-alteration variations in a restricted area, is difficult. The degree of post-intrusive fracturing has undoubtedly contributed to thermal alteration of the feldspar fabric of the more gabbroic phases and a widespread development of chlorite-epidote.

Magmatic differentiation and differing injection periods would appear to be responsible for the diversity of textural conditions encountered, not a normal characteristic of a single massive sill injection.

More typical diabasic structure was locally noted on the western and southwestern portion of the new grid. This rock is a finely crystalline, ophitic diabase varying to quartz diabase (latter noted in two widely dispersed outcrops only).

Locally, visual and magnetic evidence shows a spotty content of magnetite developed within both diabasic and gabbroic diabase phases.

Structural observations during the course of current program again support the view that the differing phases of the complex, while of possibly differing intrusive stages, are part of a sequence of sill-like lacolithic injections intruded into a series of essentially flat-dipping fractures from a common differentiated magma. These "sills" are postulated to vary widely in thickness and aerial extent. They are most probably repetitive both structurally and age-wise.

Geological field mapping leaves little doubt that such a structure of lacolithic dimensions underlies a major portion of the Sheet including the Iron Mountain area. Here the Keewatin-Timiskaming complex is unconformably interrupted toward the base of the mountain by a sill thickness of upwards of two hundred feet. The limited iron-rich occurrence noted near the western crest of Iron Mountain is an altered (possibly quite early) phase of the injection period*.

While the writer cannot relate the various ages of the intrusive components to the Algoman, a degree of pink feldspathic enrichment of the diabase in the environs of Algoman dykes, and the degree of alteration and older ferrous enrichment of above noted occurrence*, would indicate (at least in part), a pre-Algoman intrusive derivation.

Algoman

Two occurrences of grey feldspar porphyry were noted in extensional mapping. One fresh, north-south trending dyke is in contact with Keewatin iron formation on the west side of Iron Mountain on Line 18N of the old grid.

An undelineated mass of similar material was noted toward the southern limits of the grid. Its structure is obscure, but apparently intrudes the diabase. Adjacent outcrops varied from a typical diabase sporadically magnetite-rich to a finely porphyritic basic intrusive showing rather angular pink-brown spars in a fine dense matrix. This latter rock is now believed to be a contact metamorphic phase of the Algoman. While considerably more basic than the grey porphyry, its restricted occurrence appears related to it rather than being a phase of the Nipissing. A more prominent example of this type occurs on the basal south flank of Iron Mountain.

Timiskaming

Elements of the Timiskaming noted in order of abundance are Quartzite, Limey Quartzite and Arkosic-Greywacke. No Conglomerate was noted by writer although a possible occurrence is reported by Leger personnel associated with the Keewatin sulphide Iron Formation showing east of Iron Mountain.

The crest of Iron Mountain is sporadically capped by a Limestone remnant which appears to unconformably overlie the Quartzite. Most noted dips were considerably lower (10° - 30°) than observed in the Quartzites which are steeply inclined conformable with the Keewatin complex.

It is suggested that this Limestone cap remnant may be of possibly younger age than the Timiskaming and genetically unrelated to the Limey quartzites noted on the northeast flank of Iron Mountain wherein occurrences of coarsely crystalline galena and sphalerite have been noted by Leger personnel.

The quartzite is a buff to pink siliceous rock, locally noted to have interbeds of Chert and Arkose. It underlies a major portion of the Iron Mountain to No. 1 Showing area. In basic intrusive contact areas, where exposed to thermal metamorphism and quartz injection, the more feldspathized variety has been locally altered to a chlorite-sericite quartz schist Viz: (footwall sill contact of Showing 1).

Quartzite unconformably underlies and overlies marginal sills of diabasic gabbro. Its general strike trend is NNW to WNW and it exhibits dips from 60° North to 80° South.

Locally highly feldspathized outcrops were noted. Although phenocryst outlines were vague, these occurrences had the composition of altered feldspar porphyrys and conceivably could be Algoman intrusives. However in no case were definite contacts observed and as the occurrences in one or two instances graded into banded quartzite, they have been so classified.

In the immediate area of basic contacts, local exposures of arkosic-greywacke were noted. These are believed to be an alteration feature.

Keewatin

Magnetic evidence at numerous points atop Iron Mountain indicates that the cap Limestone is unconformably underlain by Keewatin Iron Formation.

Correlating 5000 gamma to off-scale magnetic values with current mapping detail, it is possible to postulate two main structural trends of magnetite-sulphide Iron Formation. Where exposed in trenches and outcrops, the Iron Formation is associated with epidotized andesite and basic chloritic tuff. Contact areas often show development of crystalline iron silicates.

There appears to be a relationship, in the extent of sulphide replacement to the basic tuff and fragmental elements of the Series on the east flank of Iron Mountain. In this area at least three bands of massive sulphides separated by interbedded tuff and quartzite have replaced narrow sections of basic volcanics over a width of 300 feet. A zone of massive magnetite some 100 feet southeast of this Showing may represent a fourth belt. Others have been inferred from magnetic evidence.

MAGNETIC SURVEY

Iron formation replacement within the Keewatin appears to be variably zoned. The magnetic survey resulted in six major positive anomalies and two of lesser extent. Four intense negative anomalies are equally strong indications of heavy iron formation or dipole effect.

All anomalous structures (positive and negative) in the environs of Iron Mountain are embraced within a broad ring-zone of negative magnetism, the contact of which correlates roughly with the topographic base of Iron Mountain. It is now postulated that this phenomenon is the result of reversed polarity due to an interruption of the downward continuity of the Keewatin by the intrusive "sill structure" underlying Iron Mountain.

Anomaly H may represent the continuation of the Keewatin Iron formation to depth beneath the intrusive sill footwall.

Anomalies A, B, C, H and I are lineal zones trending a few degrees north of west, while anomalies E, F, G, J, K and L appear to result from a drag folded structure associated with a Northeasterly fault structure traversing Iron Mountain. Latter anomaly trends vary from N 50 E to east-west.

Most of this evidence is magnetic. Apart from fracturing and alteration noted in trenches, geological mapping offered little evidence pro or con faulting at this point. It is somewhat difficult to reconcile some of the Keewatin structural projections, noted geologically, with the magnetic interpretation. The latter interpretation, in view of the obscuring effect of the unconformable limestone capping to a satisfactory geologic projection, must be accepted as the more reliable assessment of structural trend.

In the assessment of the individual anomalies, values of 5000 gammas upward, both positive and negative, may be accepted as a prime indication of massive sulphide-magnetite, especially where sharp reversed polarity is indicated in adjacent values.

While certain zones of outcropping magnetite and sulphide iron formation between Lines zero and 14W, as expected, supported 5000 gamma to off-scale magnetic values, in several instances some zoning of economic sulphide mineralization is postulated along the observed magnetite flank. In these instances moderate-high (2000-5000 gamma) values are associated with heavy well zoned, but currently unexplained geochemical soil values in copper, lead and zinc in a severely drag-folded environment.

GEOCHEMICAL SURVEY

The extension of the heavy soil zinc content in the Showing Area has been confirmed on Line 2W where good zoning and off-scale soil values have been obtained in lead and zinc. The off-scale lead is especially significant from an "in-situ" viewpoint. Some of these features have been discussed in the earlier report.

All geochemical results pertinent to subject coverage have been correlated with geologic-magnetic results.

Evaluation of geochemical results is based on a statistical determination of background and basic anomalous value involving some 466 samples from the one grid as follows:

| | Background ppm | Basic Anom Value ppm | Contour Int. ppm | Basic Contour ppm |
|--------------|-------------------|-------------------------|---------------------|----------------------|
| Copper | 25 | 95 | 100 | 100 |
| Lead | 7.5 | 25 | 50 | 50 |
| Zinc | 35 | 95 | 100 | 100 |

ECONOMIC ASSESSMENT

In assessment of the foregoing surveys, the following factors were taken into account.

1. Mode of deposition of economic minerals within the general area and the possible application of this depositional criteria to subject grid, taking into account environment of observed copper-gold values noted in various showings within grid area.
2. Relation of old workings and old drill holes to anomalous indications yielded by current surveys.
3. Economic features provided by current surveys which to date have not been adequately accounted for by observed mineralization.
4. Current surveys: General character and disposition of magnetic and geochemical anomalies relative to structural geology and to each other.

Mineral Host Environment

- (a) Low values in copper and zinc have been noted in association with Keewatin Iron Formation.
- (b) Patchy galena — sphalerite mineralization has been noted in the Timiskaming Limey Quartzite horizon.
- (c) Patches of coarsely crystalline chalcopyrite with associated gold values have been exposed in several localities in contact quartz fracture fillings along basic intrusive sill contacts.

While to date none of these exposures has yielded an economic concentration, they have provided a firm criteria for late stage economic mineral enrichment to guide an objective follow-up to subject surveys.

Geology

1. The surveys have indicated the Keewatin Series hosting the magnetite-sulphide mineralization to be considerably more extensive than previously believed.

2. Large areas of the Keewatin underlies Iron Mountain, capped from direct observation by unconformable limestone remnants of relatively shallow thickness.

3. Geological mapping has postulated extent of the basic intrusive sill or lacolith relative to the steeply dipping Keewatin-Timiskaming Series around Iron Mountain. It is believed that this "sill" underlies Iron Mountain, at a depth slightly above the topographic base of the hill. Writer was unable to determine thickness of the "sill" in current work, although at least one old drill hole south of the small lake is believed (on basis of old core examination) to have penetrated the intrusive, encountering the Keewatin sulphide footwall extension at a reasonably shallow depth beneath it.

Applying the association of copper enrichment to the sill in other locations, the area of greatest potential would appear to be in an Iron formation environment proximate to the hanging and footwall "sill" contacts.

4. The Timiskaming Sedimentary Series of chert, limy quartzite, etc., is generally conformable with the Keewatin. It has been subjected to the considerable thermal alteration effect of later igneous activity in a manner similar to the Keewatin, and locally has been replaced by coarsely crystalline lead-zinc sulphides. Under favorable structural conditions, larger scale late sulphide replacement could be anticipated proximate to iron-rich phases of the Keewatin.

Magnetic Survey

The several off-scale positive and negative areas are accentuated on Plan by cross hatching. The disposition of these is strongly suggestive of Iron Formational zoning, either magnetite, massive sulphides or both. The cause of several of these conditions has been established by trenching to be the result of uneconomic ferrous mineralization. A closer study of the magnetic results however, reveals several magnetic abnormalities of lower intensity associated with the off-scale values, but apparently physically zoned from them. These, in several instances, support strong copper, lead and zinc geochemical values, and are most probably the result of a significant content of these minerals associated with a variable content of magnetic mineralization.

Significantly, where trenching has been noted, these workings are not necessarily associated with best geochemical response, nor have they exposed but a small section of the total magnetically anomalous width at that particular point. It should be further noted that examination of these workings did not reveal any great enrichment of the Iron Formation by economic mineralization. It is the writer's view that the low content of copper and zinc so associated could not support the geochemical results obtained. It may be concluded that heretofore untested concentrations of copper-lead-zinc sulphides associated with magnetite and magnetic sulphides (probably as physically zoned flank situations) are responsible for these anomalous phenomena.

In this regard it should be pointed out that the lower intensity magnetic values of anomalous range could more probably be the result of sulphide bodies with a higher content of copper-lead-zinc mineralization than the off-scale magnetic values which, as noted in established trenches, are more apt to result from massive bodies of barren sulphides or magnetite. Any magnetic distortion associated with the Keewatin-Timiskaming Series especially as related structurally to the northeasterly drag fold condition earlier noted and supporting well zoned geochemical values, can be favorably regarded from the viewpoint of a base metal sulphide concentration.

Geochemistry

Strongly positive copper-lead-zinc indications have been obtained in the soils associated with several magnetic conditions above mentioned.

These for the most part are quite intense and well zoned, indicative of a significant content of this type of mineralization in the underlying rock. The locally high soil lead values are especially significant as indicators of mineralization "in situ".

In the assessment of anomaly zoning atop Iron Mountain, the presence of the capping limestone must be taken into account. In certain of these areas we have encountered a break in the geochemical anomaly continuity. As might be anticipated, the discontinuity occurred despite continuity of magnetic response which would be unhindered by such capping.

Respectfully submitted,

J. R. MOWAT, B.Sc.,
Geologist.

Ottawa, Ontario,
January 10, 1964.

A. C. A. HOWE, P.ENG.

Mining Engineer

RESIDENCE
923-8492

SUITE 402-100 ADELAIDE ST. WEST, TORONTO 1, CANADA

366-8846
362-4827

February 7, 1964.

The President and Directors,
Leger Mines Limited,
Field, Ontario.

Gentlemen:

Re: Acquisition of Mining Claims adjoining your Manitou Lake Property

In accordance with instructions from your President, Mr. A. S. Bayne, received on February 1, 1964, I have studied the available reports and maps of your Manitou Lake property, and the various claim maps of the area, prepared by the Ontario Department of Mines.

Your mining claims are situated across the corner of four townships and these claims, as well as the adjoining ones to be acquired, are shown on the following maps prepared by the Ontario Department of Mines:

| | |
|------------------------|---------------|
| Afton Township | Plan No. 622 |
| Scholes Township | Plan No. 586 |
| MacBeth Township | Plan No. 1024 |
| Clement Township | Plan No. 449 |

A detailed description of your property consisting of 27 contiguous, unpatented claims, is given in a report by Mr. J. R. Mowat, Geologist, dated January 10, 1964, and headed "Assessment of part of Leger Mines Ltd. property, Afton, Scholes, MacBeth and Clement Townships, Districts of Sudbury and Temiskaming, Ontario."

Claims to be acquired

(1) It is understood that your Company holds the right to purchase the following group of 11 contiguous, unpatented claims which adjoin to the southeast of your property:

T.53551, 53552, Clement Township, Temiskaming, M.D.
T.52375 to 52378 incl., Clement Township, Temiskaming, M.D.
T.53334 to 53336 incl., Clement Township, Temiskaming, M.D.
S.118487, 118488, MacBeth Township, Sudbury, M.D.

(2) It is understood that your Company is considering the purchase of an additional group of 11 claims consisting of the following 10 contiguous, unpatented claims adjoining to the west of your property:

S.119545, MacBeth Township, Sudbury, M.D.
S.119011 to 119013 incl., MacBeth Township, Sudbury, M.D.
S.119018, MacBeth Township, Sudbury, M.D.
S.119025, 119026, MacBeth Township, Sudbury, M.D.
S.119010, 119015, 119027, Afton Township, Sudbury, M.D.

and claim

T.53337, Clement Township, Temiskaming, M.D., which adjoins your property to the east.

(3) It is also understood that your Company is considering the purchase of claim:

T.53392, Clement Township, Temiskaming, M.D., which adjoins to the east of your property and to the north of claim T.53337 in group (2) above.

Conclusions and Recommendations

The report by J. R. Mowat gives a detailed description of the work done on your property including the results of geological, magnetic and geochemical surveys.

This work outlined occurrences of copper, lead and zinc sulphides within limey quartzite of Temiskaming age and Keewatin iron formation, as well as minor gold and silver values associated with copper occurrences in fissure type quartz veins.

Mowat reports that although mineral concentrations found to date are not economic, the results of the surveys indicate possible zones of enrichment under a capping of limestone or on the flanks of an intrusive sill.

Mowat states that "The surveys now completed and covered in this report indicate that these (sulphide) zones are well within a band, approximately $\frac{1}{4}$ mile wide, striking approximately N 60 W - S 60 E, and through the middle of claims Nos. T.53551 and T.53552."

It is apparent, therefore, that the three claim groups adjoining your property cover the strike of the sulphide zones described by Mowat. I therefore recommend that these claims be acquired by your Company if they can be purchased for a consideration reasonable and acceptable to your officers and directors.

Respectfully submitted,

A. C. A. HOWE, P.Eng.
[SEAL]

Toronto, Ontario,
February 7, 1964.

CERTIFICATION

I, A. C. A. Howe, of the City of Toronto, hereby certify that:

1. I am a mining engineer with offices at 402 - 100 Adelaide Street West, Toronto, Ontario.
2. I am a graduate of London University, England, with a degree of B.Sc. in 1949, and have been practising my profession continuously since graduation.
3. I have no interest, direct or indirect, in either the property or securities of Leger Mines Ltd., nor do I expect to receive any such interest.
4. My report is based on:
 - (a) My knowledge of the Scholes - Afton - MacBeth - Clement Townships area, acquired during my supervision of geological exploration, in 1956 to 1960, in Scholes Township, during which time I inspected the Iron Mountain area during several of my trips to and from the area.
 - (b) Detailed studies of maps and data relative to the geological, geochemical and geophysical surveys conducted by J. R. Mowat and summarized in his Report dated January 10, 1964.
 - (c) My personal reference to the Claims maps published by the Ontario Department of Mines, referred to in the attached report.

Signed at Toronto, this 7th day of February, 1964.

A. C. A. HOWE, P.Eng.
[SEAL]

SUPPLEMENTARY REPORT
LEGER MINES (1964) LIMITED

Manitou Lake Property, Timiskaming, Ont.

The President and Directors,
Leger Mines (1964) Ltd.,
Suite 1502,
80 Richmond St. W.,
Toronto 1, Ontario.

Supplementary Report on the Manitou Lake Property

Gentlemen:

Since my report of February 7th, 1964 to Leger Mines Limited, the following has been completed on your property:—

- (1) The 50 contiguous unpatented mining claims, referred to in my report, were acquired by your Company. This Company, I understand, has purchased the properties (including 27 of the above claims) and assets of Leger Mines Limited (Private Company), and has also purchased the additional 23 claims from Macs Grubstake Syndicate.
- (2) Field work has been carried out by A. S. Bayne, P.Eng., and the locations of claim posts and boundaries have been plotted on the grid which forms the base map of the Geological Magnetic and Geochemical surveys prepared by J. R. Mowat for his report of January 10th, 1964.
- (3) Work, recommended by J. R. Mowat as a preparatory step to diamond drilling, has been carried out as follows:—
 1. **Engineering Preparation, Elevation and Grid Detail Iron Mountain**
A profile survey was performed by Endleman & McLennan, O.L.S., P.Eng., Sudbury, Ontario. This covered lines 200 W, 400 W, 600 W, 800 W, and the base line.
 2. **Drill Preparation**
 - (a) Tenders have been let out, and a bid received from S. Bradley, Drilling Contractor, for a minimum footage of 2,500 feet.
 - (b) An access tractor road has been completed to the proposed area of drilling.
 - (c) A frame building, 24' x 16' x 8' has been completed on the camp site to serve as core storage and field office.

CONCLUSIONS AND RECOMMENDATIONS

The program of work recommended by J. R. Mowat is being carried out in stages by the Company. The next phase should be the diamond drill program consisting initially of 2,500 feet.

This program is estimated to cost:—

| | |
|---|---------------------------|
| (1) Diamond drilling at \$4.00 per ft. (including contract price per S. Bradley, sampling and assaying) | \$10,000.00 |
| (2) Engineering and Supervision | 4,000.00 |
| (3) Contingency at 10% of direct cost | 1,000.00 |
| TOTAL | <u><u>\$15,000.00</u></u> |

Respectfully submitted,

A. C. A. HOWE, P.Eng.
[SEAL]

Toronto, Ontario,
May 27th, 1964.

CERTIFICATE

I, A. C. A. Howe, of the City of Toronto, hereby certify that:

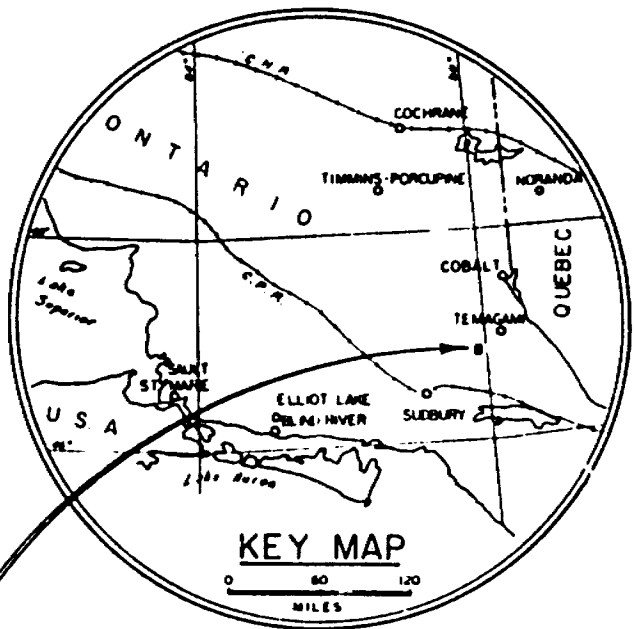
1. I am a mining engineer with offices at 402 - 100 Adelaide Street West, Toronto, Ontario.
2. I am a graduate of London University, England, with a degree of B.Sc. in 1949, and have been practising my profession continuously since graduation.
3. I have no interest, direct or indirect, in either the property or securities of Leger Mines (1964) Limited, nor do I expect to receive any such interest.
4. I am a member of the Association of Professional Engineers of the Province of Ontario.
5. My report is based on:
 - (a) My knowledge of the Scholes - Afton - MacBeth - Clement Townships area, acquired during my supervision of geological exploration, in 1956 to 1960, in Scholes Township, during which time I inspected the Iron Mountain area during several of my trips to and from the area.
 - (b) Studies of maps and data relative to the geological, geochemical and geophysical surveys conducted by J. R. Mowat and summarized in his report dated January 10th, 1964. Also of the Company records of work done since that date and consisting of:—
Abstracts from the Mining Recorder of the 50 claims— Geological Maps L-3 and L-5— Plan and Profile map by Edleman & McLennan, dated May 25, 1964. Copy of contract between Leger Mines (1964) Limited and S. Bradley.

No work has been carried out on the property since May 21st, 1964.

Signed at Toronto, this 27th day of May, 1964.

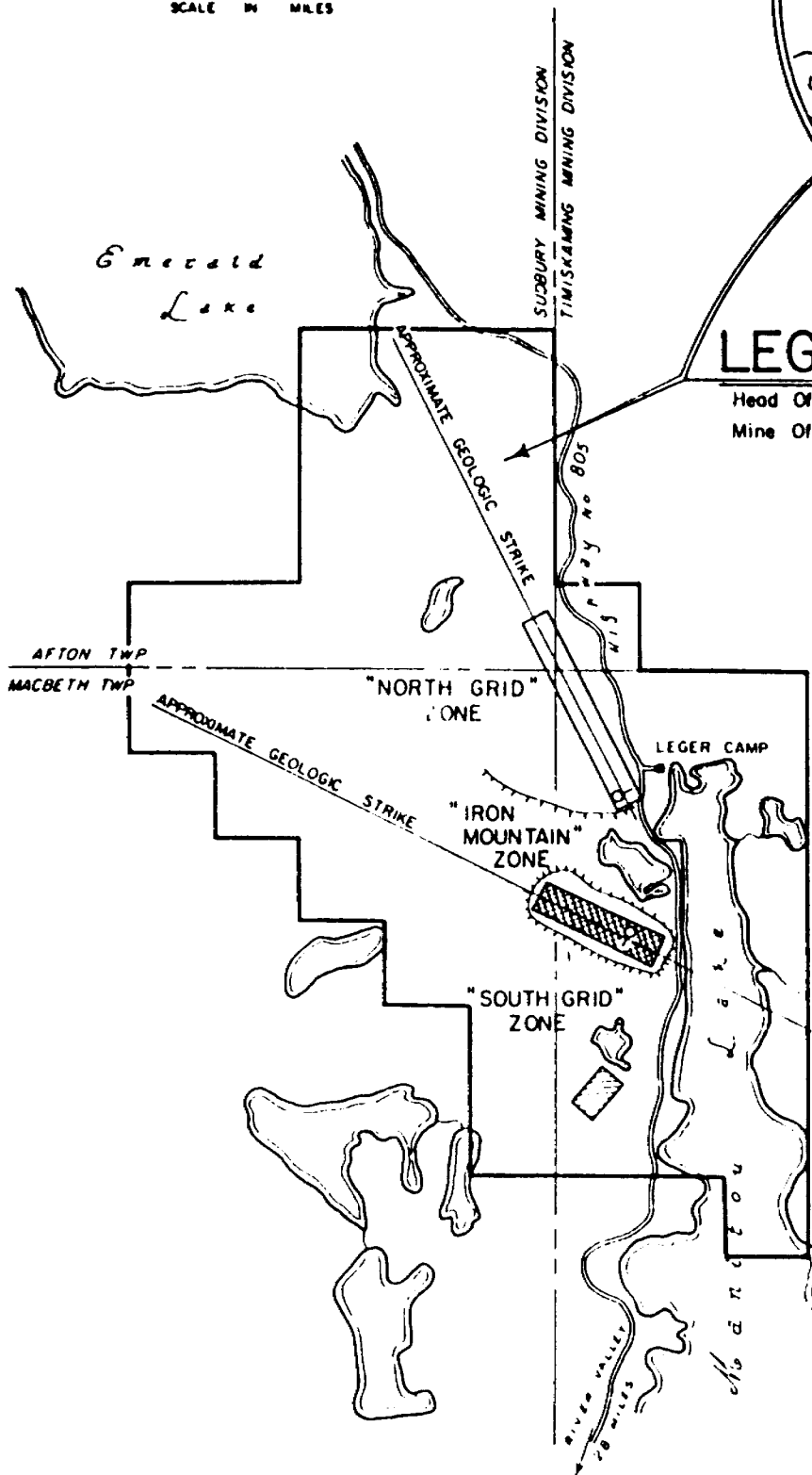
A. C. A. HOWE, P.Eng.
[SEAL]

LOCATION MAP of
COPPER-LEAD-ZINC DISCOVERIES
 MACBETH, AFTON, CLEMENT & SCHOLLES TOWNSHIPS
 SUDBURY & TIMISKAMING MINING DIVISIONS, ONTARIO, CANADA.







LEGER MINES (1964) LIMITED

Head Office: Suite 1502, 80 Richmond St. W., Toronto Ontario.
 Mine Office: Field, Ontario.



SCHOLLES TWP
 CLEMENT TWP

LEGEND

-  FERROUS SULPHIDE ZONE;
COPPER-LEAD-ZINC OCCURRENCES;
RELATED GEOPHYSICAL ANOMALIES IN
SEDIMENTS & VOLCANICS.
-  AREA WITH
GOLD-SILVER BEARING QUARTZ VEINS
WITH COPPER SULPHIDES ON SEDIMENTARY-
INTRUSIVE CONTACT.
-  AREA WITH
MAGNETIC ANOMALIES NEAR PORPHYRY
CONTACT ZONE
-  PROPOSED DIAMOND-DRILL LOCATION

REFERENCES

- 1 CLAIM MAPS - ONT. DEPT. MINES
- 2 REPORT BY J.R. HOWAT, JAN 10/1964
- 3 REPORT BY A.C.A. HOWE, FEB 7/1964
- 4 REPORT BY A.C.A. HOWE, MAY 27/1964

Produced from information believed to be reliable, but exact location and ownership is not hereby certified. This map may not be reproduced without written permission.

TORONTO - CANADA
 JUNE 12, 1964

ASBAYNE & COMPANY
 CONSULTING ENGINEERS

RECEIVED

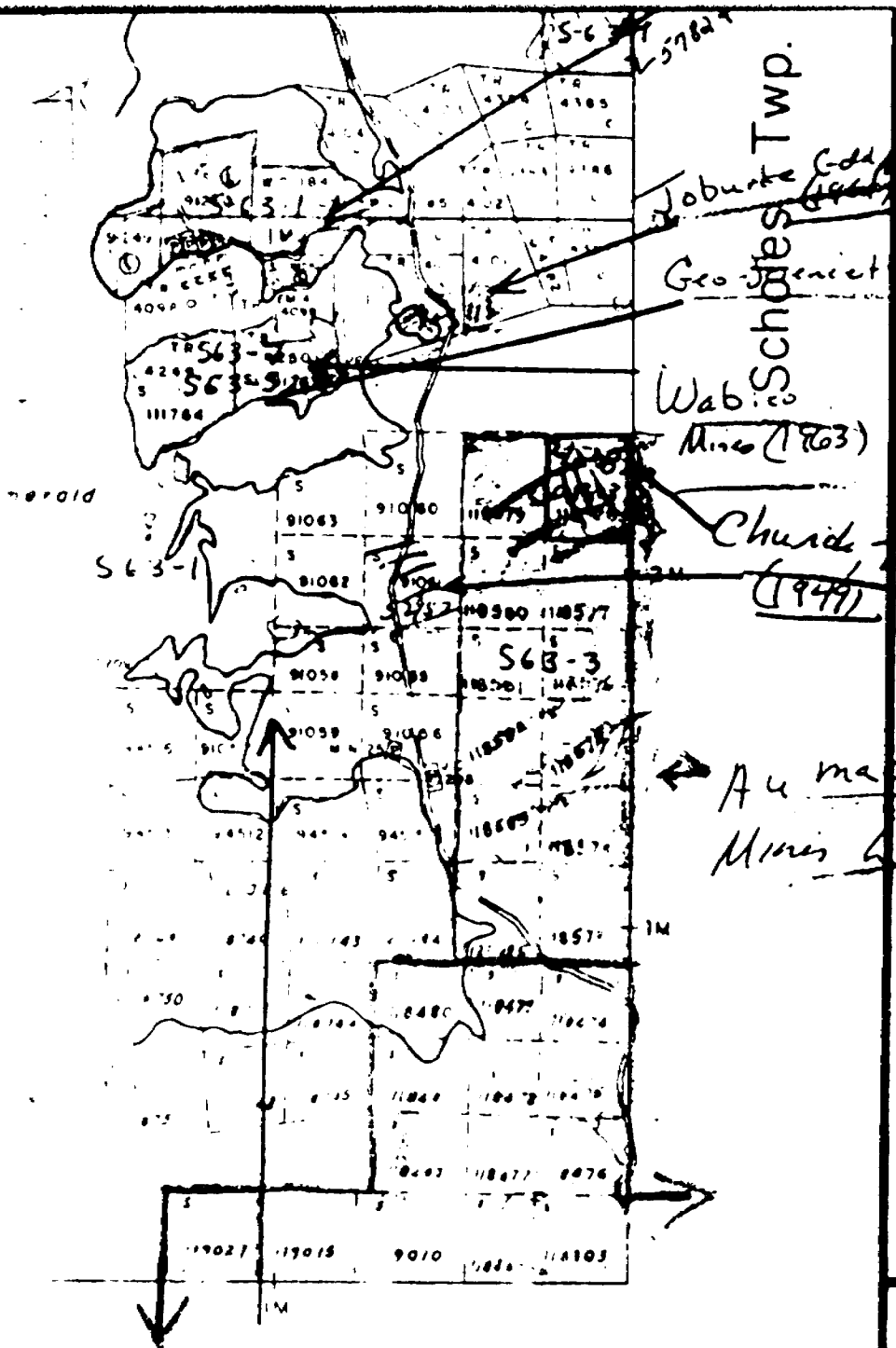
JUL 30 1974

ATTENTION:

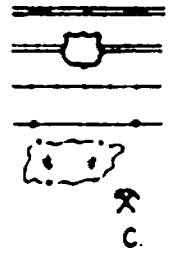
D. J. INNES.

NOTICE FOR FILE: 63.3075

This Prospectus and Summary report by Leger Mines Ltd. was filed with the Ontario Securities Commission, July 1964, not for Assessment Credits.



- IMPROVED ROADS
- KING'S HIGHWAYS
- RAILWAYS
- POWER LINES
- MARSH OR MUSKOG
- MINES
- CANCELLED



Geo. Schates in Prospector (1960)

Wabico Mine (1963)

Churide Twp (1949)

*Au macho River
Mines Ltd. (1957)*

NOTES

1964

This Twp. Lies Within The
TIMAGAMI PROVINCIAL FOREST

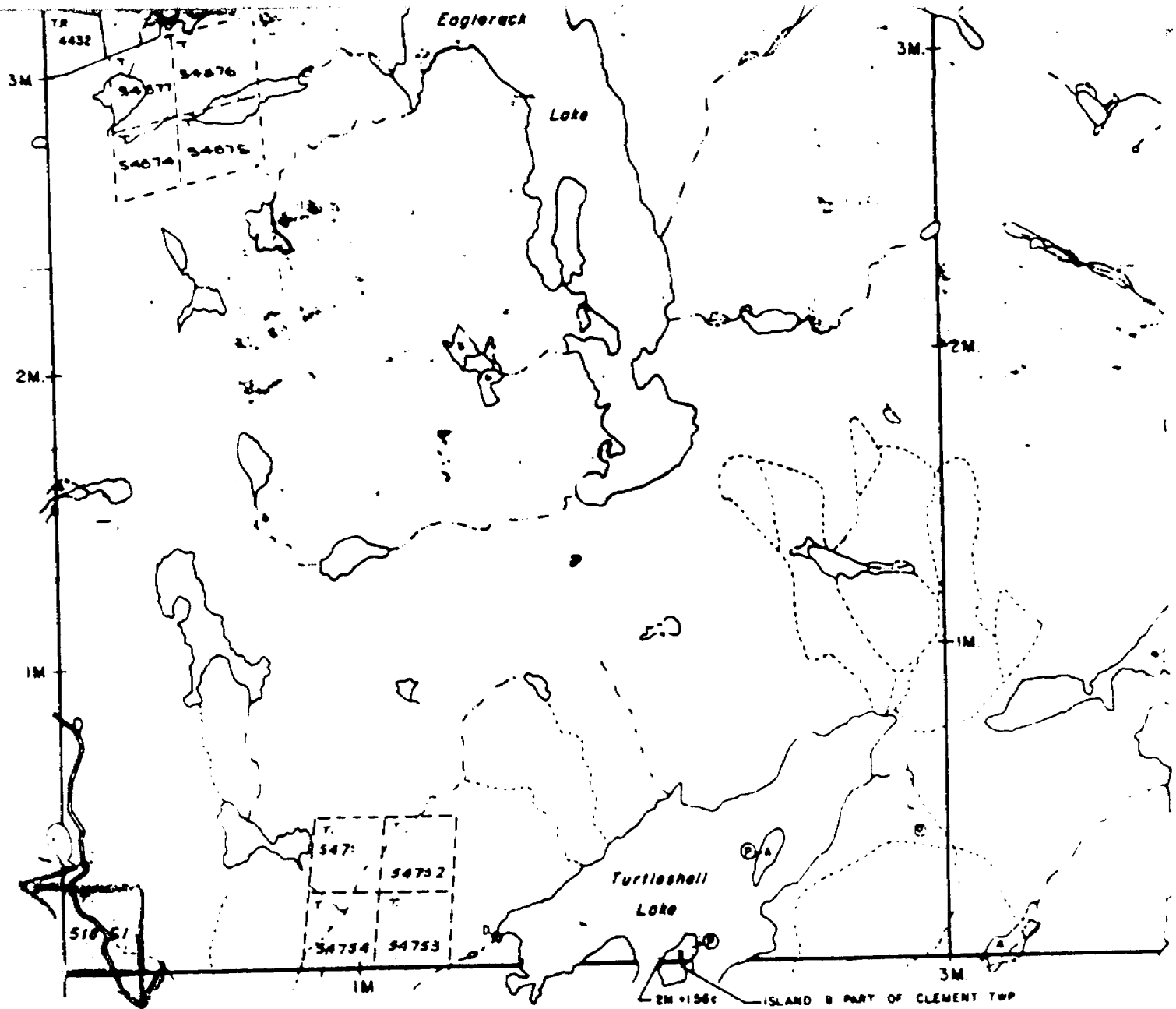
*Applied To
Royal Warrant
1964*

Box Mines Ltd

PLAN NO. **M-622**

DEPARTMENT OF MINES

AFTON TWP.



CLEMENT TWP. M.449

Macbeth Twp.

