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BEDROCK GEOLOGICAL SURVEY McGARRY TOWNSHIP, ONTARIO NTS 32D/4

On behalf of
Lee Geo-Indicators Limited

By:
Lee Geo-Indicators Limited
Hulbert A. Lee, Ph.D., P.Eng.
July, 1979

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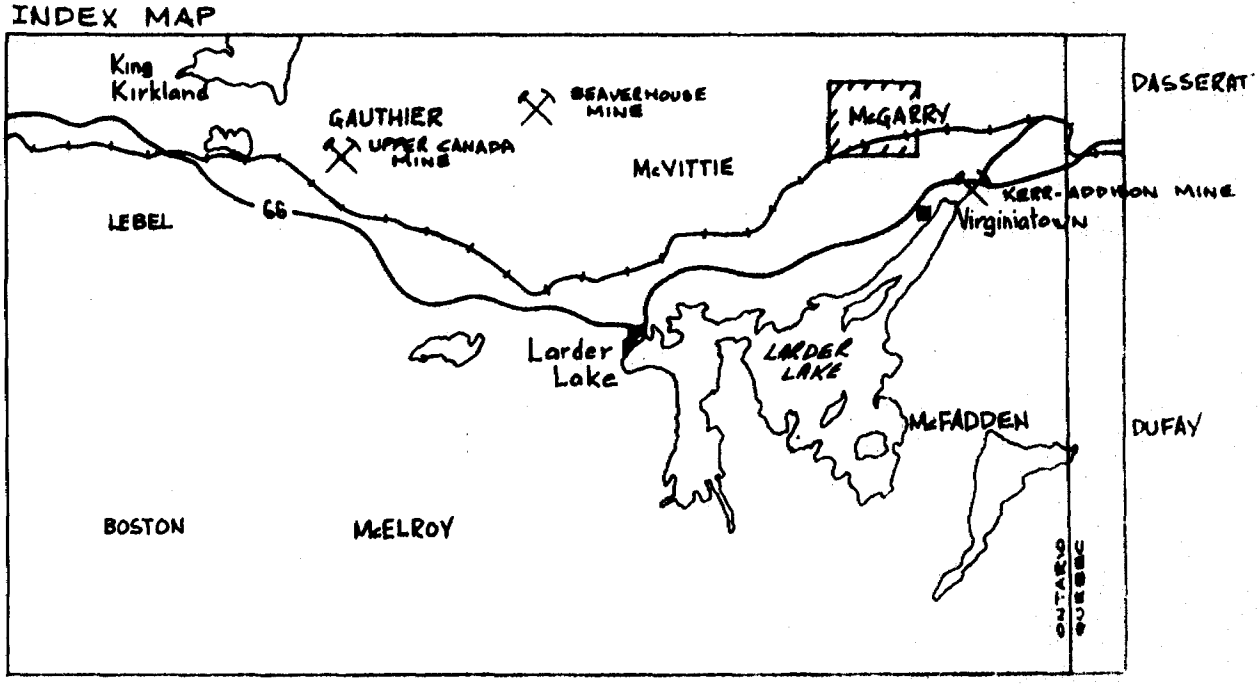
INDEX MAP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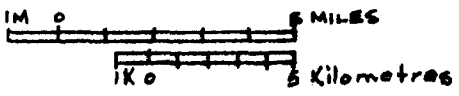
Kirkland
GAUTHIER
UPPER CANADA MINE
BEAVERHOUSE MINE
McVITTIE
McGARRY
DASSERAT
KERR-ADDISON MINE
Virginiatown
LEBEL
66
Larder Lake
LARDER LAKE
McFADDEN
DUFAY
BOSTON
McELROY
ONTARIO
QUEBEC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BEDROCK

GEOLOGICAL SURVEY, McGARRY TOWNSHIP

ONTARIO, NTS 32D/4

INTRODUCTION

Between 16th of June and 28th of June, 1979, line-cutting and chaining were carried out by Claude Jacques, under the supervision of the author on the McGarry claims, McGarry Township, Ontario, on behalf of Lee Geo-Indicators Limited. The claims over which the line-cutting and chaining were done, are registered with the Ontario Ministry of Natural Resources under the following claim numbers:

L531696, L531697, and L531698.

A total of 2.6 line-miles were cut and chained.

Between 16th of June and 28th of June, 1979, an on-site geological bedrock survey was carried out across the above listed claims. The geological survey was done by Hulbert A. Lee and

involved continuous observations along the 2.6 miles of lines and adjacent areas with stripping done to observe the bedrock surface.

Between 4th of June and 28th of June, 1979, geologist Hulbert A. Lee carried out on-site a geological survey on an additional 19 continguous claims on the McGarry property on which line-cutting and chaining had previously been done. The claims over which this survey was carried out, are registered with the Ontario Ministry of Natural Resources under the following claim numbers:

L441495	L441499	L441498
L428754	L428753	L428752
L428751	L428750	L428749
L428743	L428742	L441501
L522858	L422255	L422254
L422251	L428744	L428741
L422250		

A total of 14.5 line-miles at 400' centres was walked and the survey involved continuous observations along the picket lines and adjacent areas with stripping done to observe the bedrock surface.

Instruments used include a prospector's pick, Brunton compass, 10-power hand lens, and a Hunter A-7 Magna-Tool suspended magnet.

Forty samples were saved for petrographic studies, various analyses, and reference suite.

The purpose of the present survey was to delineate the geological expression (lithology, genesis, structure, alteration, and inscribed glacial striations) at the surface of the underlying rocks. The approximate geological boundaries shown on the map, DWG. 79-3, are dependent on the geological expression at sites stripped of moss and roots to gain exposure, and the extensive use of the ground magnetic contours for this property (Lee, 1979b). In many instances, however, no interpretation can be made of the continuity of geological formations, alteration zones, and geological structures without further stripping of the shallow moss and roots, or trenching of the Quaternary materials, or drilling.

PREVIOUS WORK

Basal till surveys (Lee, 1975a, 1975b) demonstrated extensive gold clasts in the till between Lines 28W and 48E straddling the railway track. A restricted biogeochemical survey (Scott, 1975) showed weak gold zones in the vegetation "up-ice" of the gold anomaly. Five short inclined diamond drill holes gave a N-S

section 176' west of Line 16E (Perry, 1975 and Lee, 1975b). The rocks encountered were a chlorite schist with abundant quartz-carbonate veining and mariposite (chemically calculate norm as a tholeiite) near the railroad track and highly altered tuff and sediments (chemically calculated norm as dacite) farther north. Gold values intersected were low. An electromagnetic survey shows 5 lines of conductors of various strengths. One of these lines designated Anomaly G has strong conductivity and is located on L40E at 2100' north and extends across L48E and L52E. A magnetic survey was made over the claim block at the same time as the electromagnetic survey (Lee, 1979b). The geological outcrop map which covers McGarry Township is at a scale of 1 inch to 1000 feet (Thompson, 1941).

DISCUSSION OF RESULTS

The accompanying map, DWG. 79-3, at a scale of 1" to 400' shows the geological expression gained from stripped exposures. Structural symbols express cleavage, bedding, plunge of folds, and pillow tops. Geological boundaries are interpreted. Mineralogical characteristics of alteration zones are shown.

All the rocks are presumed to be of Precambrian Archean age, as yet no radiometric analyses are available to confirm this. The relative age relations by number listing in the map legend are only partly determined, hence units 1 to 11 are not arranged in strict

chronological order. Description of the rock units shown on DWG 79-3 is given below.

Unit II - Schist: Chloritic with Minor Talc

This rock unit is situated just north of the railway on lines 60E, 64E and 68E. It is composed of a dark green rock with a width of 20 to 150 feet and has a prominent strong cleavage at 060°. It is moderately heavy, contains extensive very fine magnetite which makes it attract a suspended Magna-Tool but does not show prominently on the ground magnetic survey. When the rock is crushed and examined under a binocular microscope, a pale green somewhat flaky mineral is seen to be the main component. This mineral is interpreted as chiefly chlorite. There is also a small amount of talc, and very fine grained magnetite.

Unit 10 - Tuff; Lapilli or Volcanic Bombs

This rock unit straddles the railway at line 60E and its main characteristic is the presence of granule to cobble size volcanic fragments and bombs.

At the site of line 60E and 100' north the rock is pinkish in colour, and chiefly is a tuff of dacite to trachyte in composition but there are enclosed scattered larger fragments (about 5 mm across). A strong regional cleavage is developed.

At the site of line 60E and 360' south the rock is observed to have a matrix which is pinkish to greenish in colour, and contains considerable chlorite and minor ankerite. Enclosed by the matrix are the larger pinkish coloured bombs and volcanic fragments. The strong cleavage developed at this site is at 060° with a dip of 80° to the south.

Unit 9 - Yellow Fragment Sediment

The rock of unit 9 is commonly a grit which has yellow chip-like fragments and wisps of yellow material. It occurs at several sites: (a) Line 60E between rock units of 10 and 7; (b) Line 32E at 940' south; (c) Near line 16E in diamond drill core; and (d) Near line 44E at about 1600' north.

The yellow chips and wisps have an alignment sub-parallel to other contained rock fragments. The yellow substance is generally moderately soft and contains some sericite, further identification will require chemical and x-ray diffraction analysis.

Chemical analysis of unit 9 which contains extensive yellow wispy material as taken from drill core, at site line 14 + 24E and 4100' North, is given at Table 1.

Table 1 - Chemical Analysis of a Rock From Unit 9

Analysis (Wt.%)	
SiO_2	67.3
Al_2O_3	12.7
Fe_2O_3	3.93
FeO	0.0
MgO	2.21
CaO	2.32
Na_2O	2.54
K_2O	2.57
TiO_2	0.45
P_2O5	0.12
S	0.0
MnO	0.05
CO_2	0.0
H_2O+	5.83
H_2O-	0.0
TOTAL	100.0

Traces (ppm)
Cr 131, Cu 32, Ni 51, Zn 46

The calculated norm for salic is 89.31 and for femic is 10.69, and the calculated plagioclase composition is 31.99. The analysis is by Ontario Ministry of Natural Resources, sample 76J1244, Job 924, Project 74-10. Field sample number is 1686.

A probable hypothesis for origin of these yellow fragments and wisps is submarine mudflows triggered by volcanic explosions. The relatively high potash at 2.57% K_2O is a reflection of the mineral sericite.

Specimens of this rock unit are held at Stittsville as 79-19a, and 1686.

Unit 8 - Tuff, Pinkish

Two separated strata of rock unit 8 are situated north of the railway and within 300 feet of it. The strata are characterized by a pinkish colour, by crystal and lithic fragments, and by resistance to weathering to produce a flat-topped narrow ridge 40 to 100 feet across and with escarpment edges of 5' to 20' high.

The larger crystals in this rock are chiefly feldspar phenocrysts which amount to 15 to 30 per cent of the whole rock and which impart that porphyritic look which has caused some observers to incorrectly call the rock a "syenite porphyry". These feldspars are pale in colour, subhedral, and commonly of irregular shape. Their boundaries with the matrix are diffuse.

In addition to the feldspars as larger components, there are flattened triangular-shaped green chloritic clasts likely representing collapsed shards and vesicles. A dark greenish mica is occasionally seen in hand specimen. The matrix of this rock is dark green to slightly pinkish in colour. As observed in this section, it is composed chiefly of very fine grained angular quartz and feldspar with specks of chlorite and many lines of sericite. Anhedral pyrite grains are a common accesory mineral. Chemical analyses of this rock unit is given in Table 2.

Table 2 - Chemical Analyses of Rock from Unit 8

Analysis (Wt. %)	Site 1	Site 2
SiO_2	61.6	61.4
Al_2O_3	15.3	14.7
Fe_2O_3	4.21	3.83
FeO	0.0	0.0
MgO	2.48	2.46
CaO	3.39	3.76
Na_2O	4.99	3.72
K_2O	2.25	3.20
TiO_2	0.42	0.4
P_2O_5	0.21	0.23
S	0.0	0.0
MnO	0.08	0.08
CO_2	0.0	0.0
H_2O	5.11	6.75
H_2O	0.0	0.0
TOTAL	100.0	100.5
Traces (ppm)		
Cr	102	90
Cu	18	8
Ni	25	19
Zn	65	45
Calculated norms		
Salic	87.06	
Femic	12.94	
Plagioclase composition	22.09	

Site 1 is from diamond drill core adjacent to outcrop at line 14 + 50E and 900' north, and site 2 is at line 41E and 20' north.

The analyses are by Ontario Ministry of Natural Resources, Job 924, Project 74-10, sample 76J1241 for site 1 and 76J1240 for site 2. Field numbers are 1683 and 1682 respectively.

The bedding in this tuff rock unit can be seen only when an adequate exposure can be obtained, such as along the railway at line 44E. Here the bedding is generally flat but with wavy rolls. The strike of the bedding is 225°. The folds strike at 210° and plunge westerly at 80°. A dominant strong cleavage is developed at 210° and dips 85° south.

A volcanic tuff origin for this rock unit is demonstrated by the feldspar phenocrysts with diffuse edges and irregular shape, the collapsed shards, and by the bedding. The rock has a high content of both H_2O and Na_2O reflecting the explosive volcanic nature of its genesis. The chemical composition of the rock unit is chiefly a calc-alkaline trachyte.

The rock in places has gash veins of quartz and quartz-carbonate demonstrating the brittle nature of the rock unit, hence it is a favourable place for gold deposition. Some gold has already been assayed from along its edge. Accordingly this rock unit needs to be stripped and/or drilled with extensive prospecting done along its edges.

Specimens of this rock unit held at Stittsville are 79-9, 79-10a, 79-16a, 79-17, 79-29, 79-30, 79-31, 1682 and 1683.

Unit 7 - Pebbly Grit

Pebbly grit is most abundant south of the railway where it

forms an escarpment edge facing north of 15 to 75 feet high. The pebbles are rounded and are free-floating in a sandstone matrix. They tend to be in layers which permits the measurements of strike and dip shown on DWG. 79-3. The general trend is westerly with steep dips to the south.

The mineralogical composition of the pebbles is diverse but includes white and red cherts, yellow fragments, and an occasional lithic fragment of trachyte and mariposite.

The matrix which forms most of this rock unit is made up of approximate equal proportions of angular to subangular glassy quartz and whitish feldspars. Occasionally there is accessory pyrite, chlorite and sericite alteration, and traces of ankerite. The yellow chips could have been derived from rock unit 9 after the cessation of that volcanic activity. This would make rock unit 7 relatively younger than rock unit 9.

Unit 6a - Grit with Moderate Amounts of Iron Carbonate

This rock unit is widespread south of the railway and extends north of the railway as a narrow strip near the western edge of the claim block and with a thicker succession at the eastern portion of the claim block from lines 16E to 68 E.

The rock has a grey to greenish colour. It invariably has developed a strong westerly regional cleavage. Most of the mineral

grains within it are about the 0.5 mm size range and fine sizes are rarely seen but the occasional pebble can be found.

The mineralogical composition includes: (a) about 50 per cent glassy quartz that is angular and shows slight layering of the elongated fragments, (b) about 40 per cent of whitish plagioclase feldspar that is sericitized, and (c) from 5 to 30 per cent iron carbonate as ankerite. Pyrite as marcasite is a common constituent and is distributed uniformly throughout with rounded grains. On rare occassions a clast of jasper or graphite is noted.

A chemical analysis of this rock unit from site line 14E and 950' north is given in Table 3.

Table 3 - Chemical Analysis of Rock Unit 6a

Analysis (Wt %)	
SiO_2	70.1
Al_2O_3	12.4
Fe_2O_3	5.79
FeO	0.0
MgO	2.81
CaO	1.03
Ma_2O	2.95
K_2O	1.39
TiO_2	0.60
P_2O_5	0.13
S	0.0
MnO	0.03
CO_2	0.0
H_2O+	2.71
H_2O-	0.0
TOTAL	99.9
Traces	(ppm)

Cr 184, Cu 140, Ni 72, Zn 86

The calculated salic norm is 85.30; femic norm is 14.70 and calculated plagioclase composition is 13.86.

The analysis is by Ontario Ministry of Natural Resources, Job 924, Project 74-10, sample 76J1237. The field sample number is 1633.

The rock has a low water of formation content consistent with its sedimentary environment and a relatively low Na_2O content. The TiO_2 content is relatively high likely reflecting marine water conditions. This rock unit is considered to represent a sediment deposited on a submarine floor which received most of its detritus from a high silica volcanic source.

Specimens of this rock unit are held at Stittsville as 79-11, 78-15a, 79-20, 79-21, 1633, 1634, and 1635.

Unit 66 - Grit with Low Iron Carbonate

A grit devoid of iron carbonate outcrops south of the railway where the rock unit crosses lines 4E, 16E, and 24E, and north of the railway at line 20E. The rock is firm and difficult to break.

Just off the edge of this rock unit at line 12E and 1050' south the quartz veins carry a light-blue powdery mineral that proves by x-ray to be tourmaline. The tourmaline is extensively distributed along fractures and pseudo-cleavages giving the quartz an appearance like "pool-chalk".

This firm rock could provide a resistance to the movement of gold; accordingly that edge of it on the side of the tourmaline bearing quartz veins should be stripped and prospected.

Specimens of this rock unit are held in Stittsville as 79-10 and 79-23.

Unit 5a - Iron Carbonate - Vein Quartz - Mariposite

This carbonate unit is exposed only north of the railway at: (a) Line 8E about 400' north, (b) Line 40E about 1250' north, and (c) as a large float block at Line 16W about 600' south.

The rock leaches and weathers to a buff somewhat oozey surface but when unweathered it is firm composed of quartz-carbonate veins with varying amounts of mariposite (fuchsite). It is identical in hand specimen and exposure to that rock called "exhalite" at the well-known tour guide stop on Highway 66 at Fork Lake.

An edge of a stratum of this type of rock was intersected in a diamond drill hole at line 14 + 24E and 150' north. Another Winkie drill hole laid out to intersect it failed at 80 feet depth in gravelly overburden. The chemical analysis of the rock drilled is given in Table 4.

Table 4 - Chemical Analysis of Rock Unit 5a

	Analysis (Wt. %)
SiO_2	42.6
Al_2O_3	7.54
Fe_2O_3	10.4
FeO	0.0
MgO	19.5
CaO	6.44
Na_2O	0.50
K_2O	0.41
TiO_2	0.49
P_2O_5	0.22
S	0.0
MnO	0.20
CO_2	0.0
H_2O+	13.8
H_2O-	0.0
Total	102.4

Traces (ppm)
Cr 1260, Ca 22, Ni 560, Zn 91

Calculated norm salic is 26.62 and femic is 73.38.
Calculated plagioclase composition is 79.23
The analysis is by Ontario Ministry of Natural Resources, Job 924, Project 74-10, sample 76J1242.
Field sample is 1684.

The high magnesia, high water, and high chromium along with the evidence of quartz carbonate veining shows that this rock is a suitable conduit for gold bearing solutions and gases.

Channel sampling and total gold assays were made across the bedrock exposures and float. Some low gold values were obtained on the bedrock. This rock unit is in part co-incident with a ground magnetic high (Lee, 1979b) as well as some conductive zones and noise characteristics of pyrite shown by an electromagnetic survey

(Lee, 1979a). Some of the rock unit can be stripped and prospected and this should be done, other parts under the organic terrain can only be investigated by drilling. The chemical relationship of this rock (high F_2O_3, MgO, H_2O, Cr, and Ni) to the ultramafic of rock unit 1a should be kept in mind in prospecting. Specimens of this rock unit held at Stittsville are 79-7, 79-36, 79-37, 79-38, 79-39, 79-40, 1684.

Unit 5b - Grit with Abundant Iron Carbonate

This rock unit is similar to that of rock unit 6a, but differs from it by a much higher concentration of iron carbonate (ankerite). This rock unit is associated usually, with the volcanic tuff of unit 8 and with the iron carbonate-quartz-mariposite of unit 5a.

The minieralogical compostion is ankerite, angular glassy quartz, sericitized plagioclase feldspar, and rounded pyrite.

Its genesis is postulated as a submarine environment for deposition close to and receiving considerable source detritus from the volcanic activity that was available during deposition of the trachyte tuff.

A specimen of this rock unit is held at Stittsville as 79-8.

Unit 4 - Syenite

Syenite is a relatively late intrusive rock into the claim block. It cuts and partly digests the basalt and tholeiites of rock unit 3a in the northern part of the claims. The syenite pipes and dykes are very small, about 10 to 25 feet in diameter and invariably contain xenoliths of the country rock of basalt. Around the edges of the syenite it is common to see the introduction of epidote, specularite, and arsenopyprite. Low to moderate gold values are obtained from a shear containing arsenopyrite, calcite and hematite within basalt but near its contact with syenite.

A specimen of this rock unit held at Stittsville is 79-3.

Unit 3a - Basalt, Tholeiite

This rock unit of basalts is situated north of the railway. The rocks are generally dark green (except where expidote alteration lightens their colour). They commonly have pillow structures and/or flow breccia. Most of them are magnetic to the suspended Magna-Tool hence are likely tholeiites. The basalts are distributed in a broad fold in the northern four claims of the block demonstrated on DWG. 79-3 from top determinations on pillows. They show tops south for the rock strata closest to the railway. The basalts have an accessory mineral of pyrite and where near faults and younger intrusions have alterations of epidote, hematite, specularite and arsenopyrite.

Specimens of this rock unit are held at Stittsville as 79-4, 79-12 and 79-13.

Unit 3b - Porphyritic and Recrystallized Basalt

This rock unit includes porphyritic basalt, and basalt with second generation recrystallization. A good example of the porphyritic basalt is along the northern line of the northernmost claim. Abundant small brownish feldspar laths give an appearance to the basalt not unlike that seen in diabase dykes.

Elsewhere, as along line 48E at 2100' north, the basalt, is over a width of a few feet, coarser grained and resembles false gabbro. The early mapping by Thompson (1941) showed this narrow zone as a gabbro dyke but it has now been exposed by stripping and gradation into basalt can be demonstrated.

Where the basalt approaches the gabbro to peridotite rock-unit of 1a alteration becomes more intense and the original nature of the basalt less discernible. Considerable pyrite and pyrrhotite are present and what appears to be a second generation of feldspars (brownish laths) is developed.

Strong electromagnetic conductors (Lee, 1979a) lie within this rock unit in places where the terrain surface is dry and till-covered. Fill in electromagnetics should be done in the area of

the conductors and backhoe trenching should be done to expose and explore the cause of the conductors.

Specimens of this rock unit held at Stittsville are 79-15(?), 79-16, 79-26, and 79-36.

Units 2a - Diorite

This rock unit is situated north of the railway in the western half of the claim group and the rocks are pale-coloured, equigranular and hypidiomorphic. The rock was originally mapped in part as gabbro on the township geological map (Thompson, 1941) but this is not a good description for much of it.

The surface of outcrops are undulating to rolling rather than knobby hills of gabbro. The pale whitish green colour shows right to the surface with nothing but a thin broken skin of weathering illustrating a lack of iron bearing and magnesium bearing minerals.

Within the rock, the minerals are fresh-looking. Feldspars make up about 60 per cent of the rock and these are in a size range of about 5 mm by 3 mm. They have a waxed-appearance, are white to a tinge of pale green, lack striations on their crystal faces hence are plagroiclases likely towards the albite end of the series. Pyroxenes make up about the other 40 per cent of the rock. They

are in the size range of about 7 mm by 1 mm and these two are moderately fresh. The rock is non-magnetic to the Magna-Tool and no sulphides were observed. The only break in uniformity of the large expanses of outcrop surface is the occassional short lens of white quartz.

Age relationships of diorite to other rocks in the claim block have not been established. A specimen of this rock unit is held at Stittsville as 79-28a.

Unit 2b - Granodiorite

There is only one outcrop of this rock unit which is located at the outer edge of the claim block near the north end of line 20E. The rock has a general dark colour but contains some pinkish feldspars. It lies near an outcrop of gabbro and may be a contact metamorphic effect on the country rock.

Unit 1a - Magnetic: Gabbro to Peridotite

This rock unit is north of the railway chiefly along lines 0, 4E, 8E and 12E. It appears to be a differentiated magmatic sill-like body of gabbro to peridotite composition. An examination of the peridotite portion under a binocular microscope shows a tendency for the feldspars to be layered and for the olivine to be in needle like fan-growth texture (spinifex). Crushed portions of the rock show the magnetic portion to be distributed as (a) fine

grained magnetite in the olivine, (b) some larger sphene, and (c) pyrrhotite. Other sulphides include specks of chalcopyrite and probably pentlandite but as yet no x-ray diffraction work has been done.

This rock unit appears younger in age than the basalt in which it has caused recrystallization, and addition of epidote, specularite, pyrite, and pyrrhotite. It may also be responsible for ingredients of high MgO, high F_2O_3, high H_2O, and high Cr in the rock unit of 5a and as such be a thermal gaseous carrier for gold.

Further exploration should be done around the eastern edge of this rock unit including additional electromagnetics, stripping, prospecting, positive determination of the sulphides, and trenching and/or drilling of the strong electromagnetic conductors.

Unit 1b - Non-Magnetic Gabbro

Two zones of non-magnetic gabbro are recognized. One of them is a north-south narrow ridge like body straddling line 28W. This likely is a dyke. It is in general non-magnetic and has two moderately strong conductors in areas where it is covered by dry till in one place and by clay and till in the other.

The second zone of this rock unit joins the gabbro-peridotite body to the east. It is situated chiefly along lines

2W, 4W and 8W. The terrain has a narrow ridged form with steep sides. The gabbro has accessory minerals which include both pyrite and pyrrhotite.

Respectfully submitted,

Hulbert A. Lee

Hulbert A. Lee, Ph.D., P.Eng.
July, 1979

REFERENCES CITED

Lee, H.A. (1975a):

Geo-Indicators for gold and gold clasts within McGarry Township, Ontario (32 D/4); Ontario Ministry of Natural Resources, Assessment Files, Kirkland Lake, July, 1975.

Lee, H.A. (1975b):

The second basel till search for gold within McGarry Township, Ontario (32 D/4); Ontario Ministry of Natural Resources, Assessment Files, Kirkland Lake, December, 1975.

Lee, H.A. (1979a):

Electro-Magnetic survey, McGarry Township, Ontario, 32 D/4; Ontario Ministry of Natural Resources, Assessment Files, Kirkland Lake, May, 19/9.

Lee, H.A. (1979b):

Magnetic survey, McGarry Township, Ontario, 32 D/4; Ontario Ministry of Natural Resources, Assessment Files, Kirkland Lake, May, 1979.

Perry, J. (1975):

Lee-Canico-Texas-Gulf Joint Venture, McGarry Township, diamond drill program, August, September; Ontario Ministry of Natural Resources, Assessment Files, Kirkland Lake.

Scott, S.A. (1975):

Biogeochemical survey over shear zones, McGarry Township, Ontario (32 D/4), on behalf of Lee-Canico-Texas Gulf Joint Venture, Ontario Ministry of Natural Resources, Assessment Files, Kirkland Lake.

Thompson, Jas. E. (1941):

Township of McGarry, Ontario; Ontario Dept. Mines Annual Report, Vol. L, pt.VII, 1941.

Ontario

Ministry of N

GEOPHYSICAL – GEOL
TECHNICAL D.

32D04NE0463 2.3006 MCGARRY

900

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) Geological Survey
Township or Area McGarry Township
Claim Holder(s) Lee Geo-Indicators Limited

Survey Company Lee Geo-Indicators Limited
Author of Report Hulbert A. Lee, PhD, P. Eng.
Address of Author 94 Alexander St., Box 68, Stittsville Ont. K0A 3G0
Covering Dates of Survey June 16 to 29, 1979 for L531696-8 and June 4 to 29 for rest (linecutting to office)
Total Miles of Line Cut 2.6

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid. L531696-8; 20 days for rest

DAYS per claim

Geophysical
--Electromagnetic
--Magnetometer
--Radiometric
--Other
Geological 40 days for
Geochemical

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer Electromagnetic Radiometric
(enter days per claim)

DATE: July 26/79 SIGNATURE: Hulbert A Lee
Author of Report or Agent

Res. Geol. Qualifications 2.1625 for this File

Previous Surveys

File No.	Type	Date	Claim Holder
		L D	

OFFICE USE ONLY

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)		
L	531696	----	40 days
L	531697	----	40 days
L	531698	----	40 days
L	441495	----	20 days
L	441499	----	20 days
L	441498	----	20 days
L	428754	----	20 days
L	428753	----	20 days
L	428752	----	20 days
L	428751	----	20 days
L	428750	----	20 days
L	428749	----	20 days
L	428743	----	20 days
L	428742	----	20 days
L	441501	----	20 days
L	522858	----	20 days
L	422255	----	20 days
L	422254	----	20 days
L	422251	----	20 days
L	428744	----	20 days
L	428741	----	20 days
L	422250	----	20 days

TOTAL CLAIMS 22

If space insufficient, attach list

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS – If more than one survey, specify data for each type of survey

Number of Stations _____ Number of Readings _____

Station interval _____ Line spacing _____

Profile scale _____

Contour interval _____

MAGNETIC

Instrument _____

Accuracy – Scale constant _____

Diurnal correction method _____

Base Station check-in interval (hours) _____

Base Station location and value _____

_____

ELECTROMAGNETIC

Instrument _____

Coil configuration _____

Coil separation _____

Accuracy _____

Method: ☐ Fixed transmitter ☐ Shoot back ☐ In line ☐ Parallel line

Frequency _____
(specify V.L.F. station)

Parameters measured _____

GRAVITY

Instrument _____

Scale constant _____

Corrections made _____

_____

Base station value and location _____

_____

Elevation accuracy _____

INDUCED POLARIZATION RESISTIVITY

Instrument _____

Method ☐ Time Domain ☐ Frequency Domain

Parameters – On time _____ Frequency _____

– Off time _____ Range _____

– Delay time _____

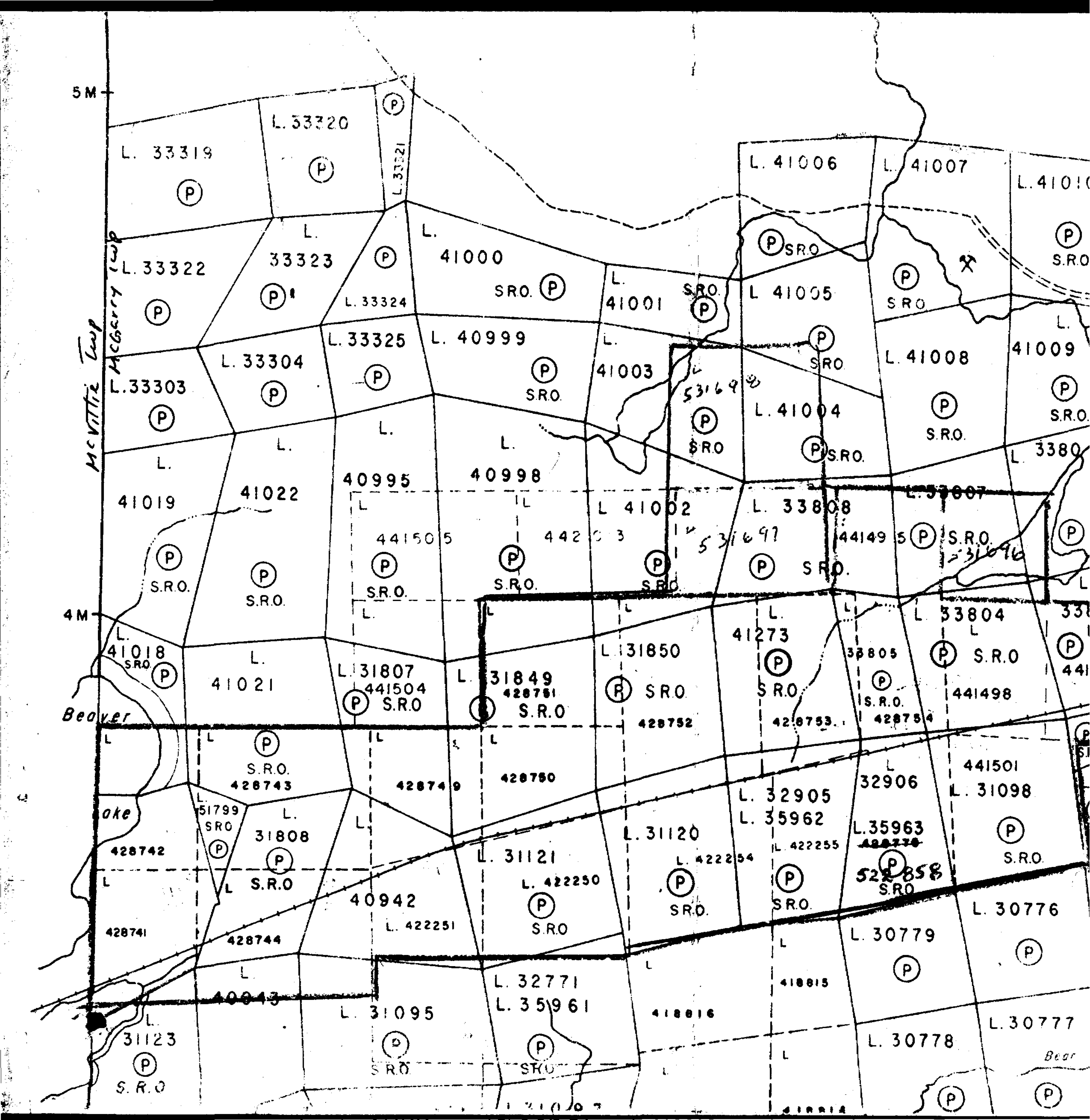
– Integration time _____

Power _____

Electrode array _____

Electrode spacing _____

Type of electrode _____


5M
4M
McVittie Twp
McGarry Twp
L. 33319
L. 33320
L. 33321
L. 33322
L. 33323
L. 33324
L. 33325
L. 33304
L. 33303
L. 41000
L. 41001
L. 41003
L. 40999
L. 41006
L. 41007
L. 41005
L. 41004
L. 41008
L. 41009
L. 41019
L. 41022
L. 40995
L. 40998
L. 41002
L. 33808
L. 33807
L. 33804
33805
441505
44149 5
441498
441501
41018
L. 41021
L. 31807
441504
L. 31849
428751
L. 31850
428752
41273
428753
428754
Beaver
Lake
428743
428742
428741
428744
428749
428750
51799
31808
40942
L. 422251
L. 31121
L. 422250
L. 31120
L. 422254
L. 32905
L. 35962
L. 422255
32906
L. 35963
L. 31098
L. 30776
L. 30779
L. 30777
L. 30778
L. 32771
L. 35961
L. 31095
40943
31123
418815
418816
Bear
S.R.O.

OSSIAN TWP. M-378

McVITTIE TWP. M-370

PROVINCE OF QUEBEC

McFADDEN TWP. M-368

THE TOWNSHIP OF

2.3006

Mc GARRY

DISTRICT OF TIMISKAMING

LARDER LAKE MINING DIVISION

SCALE: 1 INCH = 20 CHAINS

LEGEND

PATENTED LAND	(P)
CROWN LAND SALE	C.S
LEASES	(L)
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O
SURFACE RIGHTS ONLY	S.R.O
ROADS	
IMPROVED ROADS	
KING'S HIGHWAYS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
MINES	
CANCELLED	C

NOTES

400' surface rights reservation along the shores of all lakes and rivers.

DATE OF ISSUE
AUG - 2 1979
SURVEYS AND MAPPING
BR...

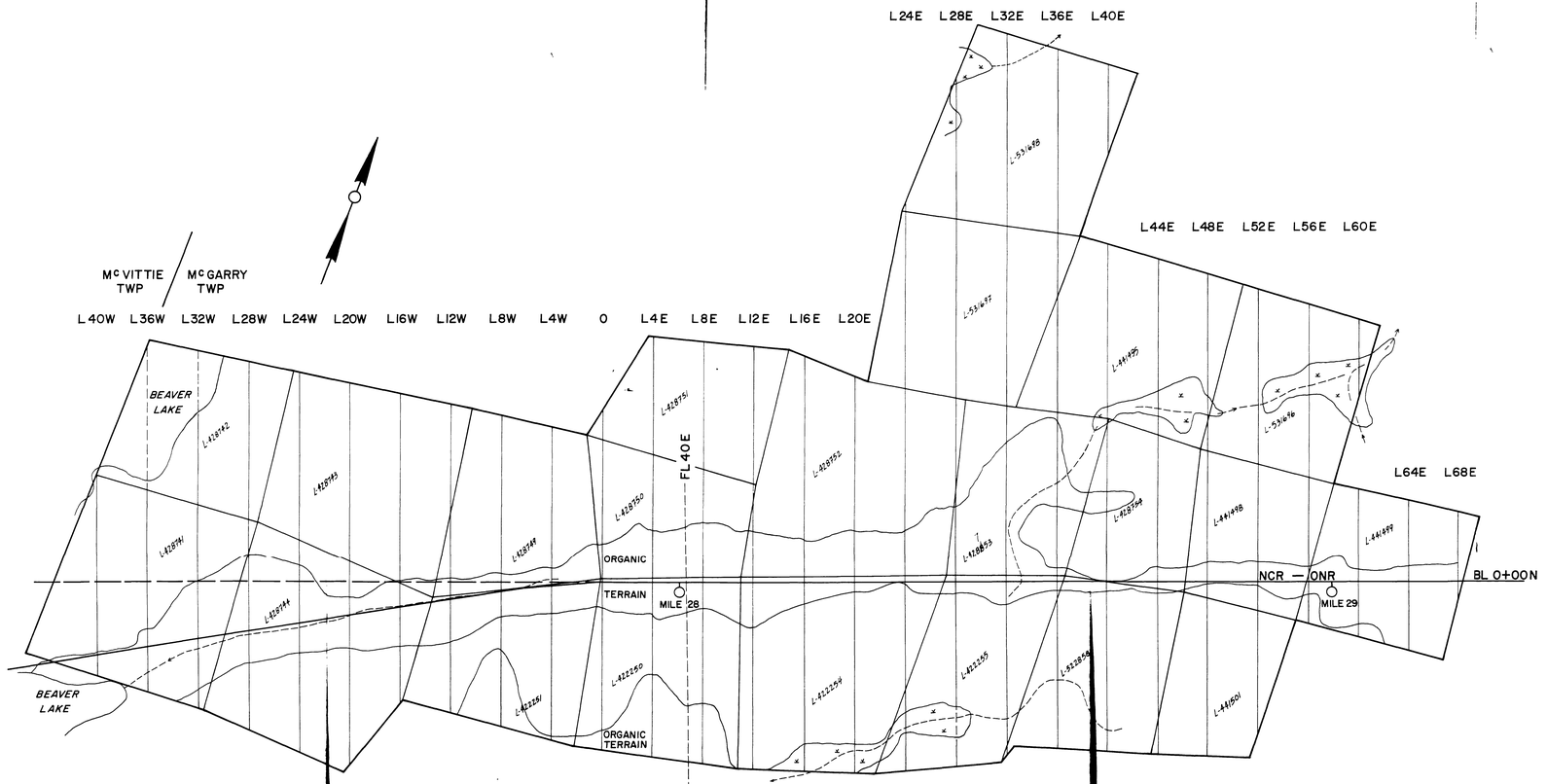
SAND AND GRAVEL

(G) QUARRY PERMIT

PLAN No. M-369

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

200



LEE GEO-INDICATORS LIMITED

CLAIM BOUNDARIES

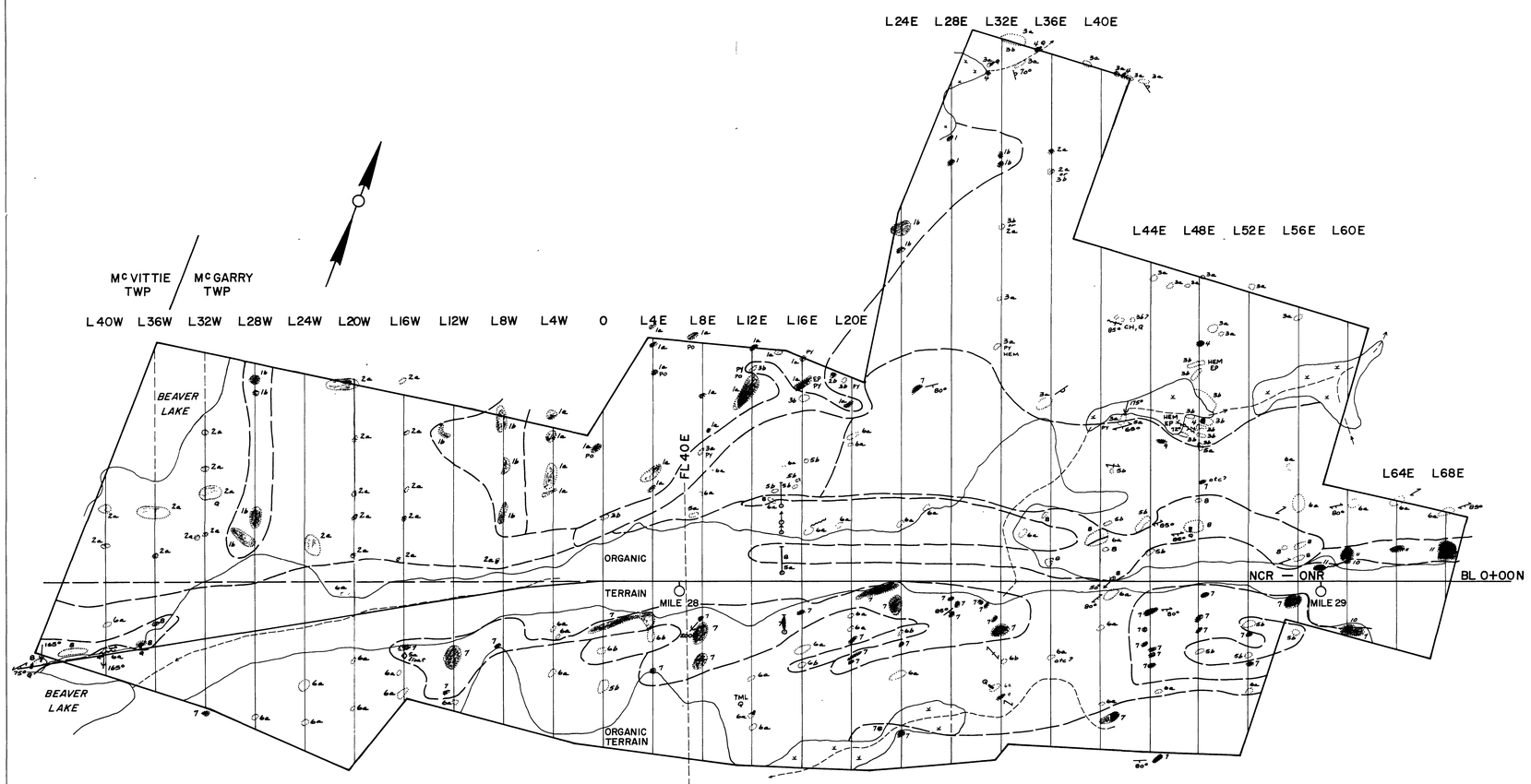
McGARRY TOWNSHIP CLAIMS
NTS 32D/4
LARDER LAKE MINING DIVISION, ONTARIO

0 100 200 300 400 500 METRES
0 400 800 1200 1600 FEET

Declination 12°W
LEE GEO-INDICATORS LIMITED
STITTSVILLE, ONT. REVISED: 1979

DWG. From

210



LEGEND

ARCHEAN

11	11	SCHIST ; CHLORITIC MINOR TALC
10	10	TUFF ; LAPILLI / OR VOLCANIC BOMBS. COMPOSITION DACITE TO TRACHYTE
9	9	YELLOW FRAGMENT SEDIMENT
8	8	TUFF ; PINKISH , COMPOSITION DACITE TO TRACHYTE
7	7	PEBBLY GRIT
6	6	a– IRON CARBONATE GRIT (ANKERITE , GLASSY QUARTZ FELDSPAR, PYRITE). b– GRIT WITH LOW IRON CARBONATE
5	5	a– IRON CARBONATE – VEIN QUARTZ – MARIPOSITE b– IRON CARBONATE – GLASSY QUARTZ – FELDSPAR
4	4	SYENITE
3	3	a– BASALT , THOLEIITE b– PORPHYRITIC BASALT
2	2	a– DIORITE b– GRANODIORITE
1	1	a– MAGNETIC ; GABBRO TO PERIDOTITE , CARRIES PYRRHOTITE b– NON–MAGNETIC ; GABBRO , OPHITIC TEXTURE

GEOLOGICAL BOUNDARY , APPROXIMATE

SLICKENSIDES , MOVEMENT UNKNOWN

DETERMINED

CLEAVAGE , DIP UNKNOWN

DETERMINED

VERTICAL

PILLOW STRUCTURES , TOPS DETERMINED

BEDDING ON LAYER OF FLOATING PEBBLES , DIP UNKNOWN

DETERMINED 70°

PLUNGE OF AXIAL–PLANE FOLD 30°

GLACIAL STRIATIONS 180°

OBSERVATIONS : HEMATITE HEM , EPIDOTE EP , TOURMALINE TML , PYRITE PY , CHLORITE CH , VEIN QUARTZ Q, PYRRHOTITE PO.

DIAMOND DRILL HOLE

GEOLOGY BY HULBERT A. LEE

2.3006

LEE GEO–INDICATORS LIMITED

BEDROCK GEOLOGY

McGARRY TOWNSHIP CLAIMS
NTS 32D/4
LARDER LAKE MINING DIVISION , ONTARIO

0 100 200 300 400 500 METRES
0 400 800 1200 1600 FEET

Declination 12°W
LEE GEO–INDICATORS LIMITED
STITTSVILLE , ONT. REVISED: 1979

DWG. 79–3 From JULY , 1979

REGISTERED PROFESSIONAL ENGINEER PROVINCE OF ONTARIO H.A. LEE