
42A06SE0912 63A.62 ELDORADO

63A.62

Report on the Geology of a part of the claims of the Mercury Investors,Ltd., Eldorado Township, Porcupine District,Ontario.

By D.C. Maddox, Geologist for the Company.

Introduction

The enclosed plan shows the position of the map area within Eldorado township. The insert in this plan shows the position of Eldorado township relative to the adjacent townships. The chief mines of the Porcupine District are located in Tisdale township.

Means of access: By water. A motor road runs in a generally southeasterly direction from the town of South Porcupine to the Redstone river. From the bridge, where the road and river intersect, it is about five miles in a direct line to the first rapid,(see geological map).Owing to the winding of the stream, it is at least 15 miles between the two points mentioned. For the first few miles upstream from the bridge the water is quiet and deep, but higher upstream the water becomes rapid and shallow. The river bed is thickly strewn with sunken logs, and it is not advisable to attempt the trip by canoe if the water level in the river is very low. There are three rapids in the map area, but portages have been cut between all of them.

By land. A jeep, or a car with a high body, can get to within about two and a half miles of the map area over roads which are, in places, very rough and strewn with boulders. From the limit of car transportation equipment and supplies must be portaged in over winter roads and trails, many of which are swampy.

By air. There are no lakes in the vicinity of the claims, and the pools on the Redstone river are probably not long enough to permit

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of the use of hydroplanes. Bush covers the entire map area and no landing fields are available.

In 1947 the claims comprised Nos. 33413 to 33418, 33649, 33650, 33657, 33854, 33855, 33859, 33860 and 33866, fourteen in all. During 1948 the Company acquired the following additional claims, 33958 and 34968 to 34972. Claims 34968 and 33855, as well as nos. 34970 and 33859, were merged, so that at present the Company owns 18 claims.

The office of the Mercury Investors Ltd. is at 217 Bay Street, Toronto. The President of the Company lives at Buffalo, New York State, U.S.A., and most of the shareholders reside in Buffalo or vicinity.

During 1948 the geological work on the claims was done by D.C. Maddox, 167 Faraday Street, Ottawa. He was ably assisted by Alexander Skrecky, of Kearns, Ontario, an honour graduate of the Haileybury School of Mines, who has had some experience in mining and geological work.

Owing to a dispute as to claim boundaries, the geological field work did not start until September the twenty-first. Work was completed on November the thirteenth, at which time a fall of about four inches of snow covered the ground. The report of the amicable settlement of the dispute as to claim boundaries, and the news of the acquisition of the additional claims, did not reach the writer until the end of October. Working conditions during November were not favourable, and in consequence, no geological work was done on claims 34958, 34969, 34971 and 34972.

The position of the outcrops was determined by the use of a prismatic compass and pacing. The boundaries of claims 33860, 33859 before inclusion of 34970, and 33855 before inclusion of 34468, were determined by a qualified surveyor. The northern boundaries of claims 33416, 33417 and 33418 .....

determined by a pace and compass survey along McChesney's road. The remaining boundaries are only approximations.

A little development work has been done on or near outcrop 13, including trenching and blasting. Some stripping and trenching ha been carried on at scattered outcrops over the map area, but no drilling has been done to date.

Thanks are due to Mr. John Jones for valuable assistance on the trip out from the field, and to Doctor T.L. Tanton for his assistance in the examination of thin sections of rock.

The identification of some of the rock types is only tentative as no thin sections of these rocks are yet available.

GENERAL GEOLOGY

No attempt was made to map the surface deposits, these being generally covered by vegetation and only exposed in the few scattered trenches that have been dug. Boulders are very sparsely distributed over the map area. Well defined varved clay was exposed in the trench near outcrop 13, and it seems probable that all, or a large part, of the area is underlain by glacial lake deposits. A clay bank, almost bare of vegetation, near claim post 1-33860 seems to require explanation, as no signs of slumping were seen in the vicinity.

The chief rock types found are listed below, the oldest type being at the bottom of the list.

Quaternary.

Recent and Pleistocene. Unconsolidated clays and silts, including glacial lake deposits, probably underlain by boulder clay.

Precambrian.

Matachewan. Olivine diabase dikes.

Algoman. Quartz veins
Feldspar porphyry dikes
Lamprophyre dikes (?)
Basic dikes (?)

Haileyburian(?) Serpentine and rocks derived therefrom.

Keewatin Lavas chiefly of the andesitic type with interbedded sediments.
Iron formation (?)

Age uncertain. Altered diorite and accompanying acidic phases.

The olivine diabase dikes are exposed in large outcrops, which generally form high ridges, in the southern part of the map area. Much of the rock is coarsely crystalline and the diabase structure is very evident. Exfoliation is characteristic and erosion produces a "rock gravel". The diabase usually weathers into rounded surfaces.

A number of blocks of olivine diabase, possibly representing an outcrop, were found in the serpentine belt at a point a little south and east of claim post 1-33860.

The feldspar porphyry dikes were very numerous, especially in the shore section and vicinity. The rock is generally grey or greenish-grey and it varies in degree of crystallization. A thin section from this dike in outcrop 13 showed that the feldspar was of the albite type. Grains of magnetite were present as well as green pleochroic biotite and rods of apatite. Quartz veins were present within or at the margins of many of the dikes; the veins, however, generally showed only slight mineralization. Samples of feldspar porphyry from outcrops 13, 51 and 86 were assayed for gold but only showed traces of the metal.

The lamprophyre dikes so far located were much less numerous than the feldspar porphyry dikes. At outcrop 13 a lamprophyre dike is crossed

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y a feldspar porphyry dike, this condition indicating that the lamprophyre dike was the older of the two. The rock is brownish grey and very fine grained with a few widely scattered phenocrysts of biotite. A thin section showed the presence of a relatively coarse aggregate of associated chlorite, biotite and calcite and a felt of a greenish non-pleochroic mineral, probably serpentine. The ground mass consisted of quartz, untwinned feldspar, biotite in tiny flakes, and carbonate. Rods of apatite were also present. No quartz veins were associated with this dike.

The basic dikes were of several types. Some were very fine-grained and dark in colour and are probably of the basalt type. Some were slightly more crystalline and were more of the diabase variety. One rock sample from the shore section, taken a little north of outcrop 38, was composed of a dark greenish rock with a felt of needles of what is apparently pyroxene. One fairly coarse sample from the same general locality, seemed to be a hornblendite. The individual dikes are described elsewhere in this report. The age of the basic dikes was not definitely determined, but it seems probable that they are of about the same age as the feldspar porphyry dikes.

Another type of dike, found in the southern outcrops, was pink in colour and contained small aggregate of a green mineral, apparently chlorite. These are apparently aplite dikes.

The quartz veins were generally associated with the feldspar porphyry dikes, being either marginal or interaal. Many of them were slightly mineralized, chiefly with pyrite, but none of them showed free gold. The veins were generally not more than two inches wide,

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but one barren quartz vein, partly eroded away in outcrop 54, was about eight inches wide. Samples from quartz veins in outcrops 2,13 and 71 were also assayed for gold with negative results.

Serpentine and rocks probably derived therefrom.

The map legend shows the following rock types which fell within the classification.

S 1. Hard, non-laminated greenish rock, fine grained, generally with some small flakes of a mineral with a greasy feel, probably talc.

A modification of S .1 is S.1.F. This rock is generally similar to S.1 but it shows well-defined flow structure. This type was found only in outcrop 22.

S.2. This type is rather softer than S.1. It has a slightly greasy feel and contains many small scales of a mineral that is probably talc and / or chlorite. The mode of occurrance suggests that it is an intrusive variety. Many well developed octahedra of magnetite are scattered through the rock.

S.3. This variety was found only under the moss in a part of the serpentine belt. It is distinguished from the other types partly by the great depth of weathering, up to two inches of brown ferruginuous material enclosing a kernel of unaltered rock that is yellower in colour than S.1 or S.2. The green films on cleavage planes suggest the presence of very small proportions of a nickel mineral in the rock. Another distinguishing feature is the presence of many inclusions of stichtite, a complex carbonate containing chromium.

S.4. A soft grey or brownish grey rock with a marked talcose feel

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that is thought to be a carbonated product of serpentine. This type occupies a considerable area near the Redstone river in the vicinity of the second and third rapids. A characteristic weathering effect is the presence of small brown oxidation spots scattered through the rock.

S.5. This type, while differing widely from typical serpentine, is included in the "S" classification because it appears to be formed as a result of deforming influences on S.4. Lithologically, it is a chlorite and talc schist showing well developed lamination. It was found only in outcrops 32 and 33 and in the river bed opposite these outcrops.

A granular variety of serpentine was also found in the serpentine belt.

Veins of talc were common in all the varieties of serpentine, but they were narrow, none of them exceeding about an inch in width. Carbonate veins, some of them with subordinate quartz, up to nearly three inches in width were found on the west bank of Redstone river above the second rapid. Some carbonate-with-quartz veins were also seen in outcrops 32 and 33.

The Keewatin rocks are chiefly grey lavas of the andesitic type, but some darker rocks are included in this classification. Some of the lavas were silicified. The country rock in outcrop 13, and in some adjacent outcrops, contained many rounded inclusions of quartz and is, therefore, thought to be an interbedded sediment.

Iron Formation. Some iron ore, largely magnetite, found in a bed under some rocks in outcrop 48 is thought to represent the iron formation, the bed was not very accessible. Some boulders of iron formation were found on the east bank of Redstone river a short distance upstream from

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the third rapid, but no similar rock was found in place. A magnetic anomaly near the cabin may be caused by iron formation, although outcrop No.99 shows no trace of this rock.

The intrusion found in the northern part of outcrop 41 consists of altered diorite or metadiorite. A thin section showed the presence of a felt of linear hornblende crystals, twinned, with tattered boundaries, in a ground mass in which feldspar of the albite variety is associated with chlorite, grains of ilmenite and rods of apatite. This rock is more fully described in that part of the report dealing with the shore section.

Regional Geology

The map area is divisible into the following four belts, the boundaries of which, however, owing to the paucity of outcrops, are very indefinite and have not been shown on the map.

The Northern Belt. This is represented only by two outcrops, nos.88 and 89, that were discovered below the moss during 1948. The chief value of this discovery is that it limits the northern boundary of the serpentine belt within the map area. The rock in outcrop 88 is dark gray lava. A fracture plane, lined with crystalline quartz, strikes southeast and dips northeast; it may represent a fault plane. Outcrop 89 shows a little banding and it may consist of sediments. A fracture which may also mark a fault plane, strikes at about 70 degrees south of east and dips towards the west. From this outcrop a sample of a slightly mineralized belt was assayed for gold with negative results.

The Central or Serpentine Belt, largely covered with moss and

other vegetation, but showing several outcrops in claims 33413 and 33415. An extension of the belt west of the Redstone river occurs in claim 33859. Outcrop 99 limits the northern extension of this part of the belt, and outcrop 39 probably limits it on the South. Outcrops 60 and 60A were found at the top of a high clay bank and apparently show the presence of a rock core.

No minerals of economic importance were found in this belt. The poorly defined belt of type S.3 in claim 33415 is possibly the most interesting from an economic viewpoint; It is discussed later under the heading Biochemistry. Ores of nickel, chromium and cobalt are occasionally found associated with serpentine, but no such ores have yet been found in the map area. The veins of talc are too small to be of commercial value.

The Southern Belt is underlain by lavas and interbedded sediments with associated dike rocks. A large dike of olivine diabase passes through the southern part of the belt. The shore section and adjacent areas are discussed later.

In the most eastern group of outcrops, Nos. 73 to 78, the traverses were carried a little beyond the northern boundary of claim 33650 in order that the northern contact of diabase with the lavas could be determined. In outcrop 75 two aplite dikes striking northwest were found close to the contact. Outcrop 77 represents a feldspar porphyry dike striking east-west. Some sediments were found in the southeastern part of outcrop 76, but the strike and dip varied widely. A highly mineralized basic dike was found near the contact in outcrop 78. No marked mineralization was found at the contact.

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In the group of out crops 80 to 82 an aplite dike striking 30 degrees east of north, and a feldspar porphyry dike from one to four feet in width, were found. Some very heavy black basic rock was also found at the southwest boundary of out crop 81.

In outcrops 83 to 85 two parallel basic dikes, 12 to 18 inches wide strike at 20 degrees west of nor th. A feldspar porphyry dike about 25 feet wide cuts through outcrop 83 and the northern part of outcrop 85. The strike of the contact of this dike with the lavas to the south was 24 degrees south of east.

In outcrop 87, over an area of about 80 feet by 20 feet, there were a large number of flat "inclusions" weathering white and projecting slightly above the general level of the basic country rock. The largest "inclusion" was 12 by 7 inches but most of them were two to four inches across. The "inclusions" were roughly equidimensional, but the edges were not rounded. In the centre of the area the "inclusions" formed about 50 per cent of the rock surface but they thinned off towards the margins. A basic dike, striking at 70 degrees east of north, traversed the edge of the "inclusion" area and contained a few "inclusions" on the side nearest the area. The contact of the olivine diabase with the lavas lay about 30 feet south of the "inclusion" area. The "inclusions" contained much well crystallized basic feldspar and lithologically corresponded to an anorthosite. They may represent a differentiate of the basic rock.

Some aplite dikes were found under the moss in outcrop 92.

Outcrop 71 showed the presence of a feldspar porphyry dike the strike of which, and of the country rock, was about east-west, with a northerly dip. A sample of a slightly mineralized quartz vein at the

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contact of the lavas with the porphyry was assayed for gold with negative results.

The Shore Section and Adjacent Areas.

From an economic standpoint this is the most important part of the map area, as it contains the outcrop on which the high grade gold-quartz vein was found in 1947. Geologically, it is of special interest as it contains a large number of fairly closely spaced outcrops, and it provides a continuous section along both banks of Redstone river. Structural conditions are also specially interesting. Almost all rock types previously mentioned are represented.

The chief structural problem is concerned with the possible presence of a major fault in this area. There is considerable difference between the east and west banks of the river in the vicinity of the second rapid. Much of the eastern bank in this section is covered with large blocks of rock that have slumped down from the high rock banks. The western bank is generally free from these obstructions and rock conditions there are more easily seen than on the eastern side. Many structural features found on the east bank have not been carried through to the west bank. Evidence from slickensides is not conclusive. If a fault passes down the river bed in a general northerly direction from the bend in the river opposite outcrop 30, any slickensides or other evidences of faulting are of necessity conceded.

The conditions on both sides of the river at the tree bridge are as follows.

On the east bank several blocks show marked slickensides, with accompanying quartz veins. One block showed a direction of movement

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35 degrees south of east. Another block, a few feet down stream, showed much evidence of movement but no dominant direction could be determined.

On the west bank, some veins of a soft, dark coloured material, with a greasy feel, apparently impure talc, were found in the rock face, some were horizontal or nearly so, and some were branching. Below this there is a ledge of serpentine (S.2), about 20 feet long, striking at 15 degrees west of south, and dipping steeply to the west.

Downstream from the tree bridge, on the east bank, two basic dikes striking at 90 degrees and 94 east of north, respectively, were found.

Upstream from the bridge, a porphyry dike, outcrop 38, shows no definite strike, but its eastern contact with the country rock is about 54 degrees east of north.

From the bend in the river opposite outcrop 30 to the bend opposite outcrop 33, structural conditions are of special interest. On the east bank two faults in planes, with shatter zones, strike at about 65 degrees and 78 degrees south of east, respectively. On the west bank a dike of serpentine (S.2) about two feet wide, strikes at about 29 degrees west of north. The strike of the anticline on outcrop 31 is about 20 degrees east of south. A small anticlinal arch striking at about 70 degrees east of north, and overturned towards the north, is exposed in the river bed about 20 feet downstream from outcrop 31. The preservation of this structure in the river bed is a remarkable feature. The S 2 variety of serpentine in the anticline, however, is much more resistant than the much softer S4 variety, and outcrop 31 may also shield the structure from the full force of the river.

Outcrops 32 and 33 of chlorite and talc schists show well-defined

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lamination the strike of which is about 50 degrees east of south. The beds dip steeply upstream and flatten out slightly in that direction. Two carbonate veins in the rock face strike at about 80 degrees east of south. Three fault planes also occur. One strikes at 68 degrees east of north, one at 30 degrees east of north, with the fault plane bifurcating and swinging to the east and to the west near water level. A third strikes at four degrees east of north, with a marked swing eastward near river level, the east side apparently moving south relatively to the west side.

The evidence of a major fault passing under the river in a generally north-south direction is inconclusive. On an east-west line the three fault planes just mentioned show a progressive swing towards the north. The fault planes on the south shore and the dike opposite them on the north shore, however, show a swing to the west. No evidences of the presence of a major fault were found in the outcrop east of the river and it is possible that all the slickensides in the vicinity of the tree bridge may be due to the presence of a north-south fault. The only outcrops on the west side of the river in this area are serpentine, and they show no evidence of faulting. The deforming forces that caused the schisting in outcrops 32 and 33 were probably shearing forces. The possibility of a hinge fault should be considered.

Outcrop 35 contains inclusions, with rounded outlines of serpentine of type S1, in a matrix of type S 4. The inclusions apparently represent remnants of the original hard serpentine that have escaped carbonatization.

In outcrop 39 a shattered zone cemented by fine-grained siliceous

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material, probably represents a fault plane striking at about 55 degrees east of north.

The outcrops east of the river.

The chief points of interest in this area are the numerous dikes of feldspar, porphyry, the much fewer dikes of lamprophyre, and a small body of altered diorite.

The outcrops were largely covered with moss and in general were not sufficiently closely spaced to provide much information as to regional trend. The dikes on outcrops 12A and 13, however, trend about 25 to 30 degrees west of north. Some of the other dikes also appear to trend in this general direction. The lamprophyre dike in outcrop 13, and possibly the feldspar porphyry dike, outcrop 38, seem to trend in a direction about normal to the direction of the first-mentioned group. Two periods of deformation seem to be indicated, of which the northeasterly one is apparently the older.

A small body of altered diorite, or metadiorite, occurs in outcrop 41 and is possibly a small plug. Its composition has been described previously. On the west side of the plug there is an acidic phase consisting almost entirely of feldspar. It apparently represents a dike, but contact with the diorite is transitional. It is cut through on the south by a feldspar porphyry dike. An outcrop of rock of diorite type is found in a part of outcrop 12. The contact of the diorite with the Keewatin sediments to the east is transitional. Contacts of the diorite with the serpentine to the west and the Keewatin to the north are concealed by a heavy cover of drift. Some blebs of feldspar and quartz in the acidic phase may represent partly fused

inclusions of granite.

Some bodies of dark greenish rock with a fibrous structure, apparently altered pyroxenite, were uncovered in some of the outcrops, but the bodies were too small to map.

Outcrop 13.

This is the outcrop on which the high-grade gold-quartz vein was found in 1947. This vein was located in the country rock adjacent to dike A 1 (see plan) and was lying at an angle to the general direction of the dike. The vein was only about an inch wide, but it assayèd, after removal of all the visible gold, eighty five dollars to the ton.

Since the field work was completed in 1947 some blasting, not under the supervision of the company, was done on the rock face C D, which was blown down to a distance of about eight feet. The area blasted would include the place where the gold-quartz vein was found in 1947.

During 1947 a channel sample taken across dike A 1, at about the position A B, contained 70 cents worth of gold to the ton.

During 1948 the following samples were taken.

1. A channel sample, E F, across dike A 1.
2. A chip, sample D.G., across the same dike.
3. A grab sample, from the broken rock near C D, of mineralized quartz vein material.
4. A grab sample, from the same area of unmineralized quartz vein material.
5. A grab sample of calcite vein material, partly mineralized, filling joint planes in the country rock, also from the same area.

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6. A sample of rock and vein material from a shatter zone at point H.

7. A sample of similar material from outcrop 13A. All the assays from the above samples were negative, except number 3 which showed the presence of gold to the value of $13.30 per ton. This value, of course, represents only a selected sample from the vein material, which forms a very small proportion of the total rock. There is reason to believe, however, that the previous owner, under whose direction the blasting was done, had removed some material from the broken rock, and it is possible that he selected for removal the higher grades of vein quartz.

The gold quartz veins dip to the north, and the source of the gold probably lies in that direction. No visible gold was found in any vein material south of dike A 1, and it is possible that dike A 1 may have stopped the migration of the gold-bearing solutions southward. Towards the north the rock face on outcrop 13 slopes into a drift-covered area which was very carefully searched for outcrops, but none were found. A trench on the north side of this outcrop, up to four feet deep, failed to reach rock.

It is suggested, therefore, that blasting be continued on the rock face from point D towards dike A 2. Such work to be done under the constant supervision of a competent geologist, and assays of the vein material to be carried out. Should the results of this blasting justify it, drill holes could be put down in the bush north of the outcrop.

The contact between dikes A 1 and A 2 is marked only by a small

depression and no inter-fusion between the two is shown. There are many cross fractures in dike A 1 and marginal and internal quartz veins occur. Many offsets of dike rock, similar to that of A 1, traverse the country rock of outcrops 13 and 13A. Dike A 2 showed no fractures or veins. Outcrop 12B shows lamprophyre, but if this represents a continuation of dike A 2, it implies a marked swing to the south of A 2.

In the rock face GH what was apparently a fault plane, that strikes at 20 degrees west of north, and dips towards the east was found.

The country rock in outcrop 13 is apparently an interbedded sediment. It contains a few quartz veins that show no definite orientation.

Field observations failed to provide any explanation of the sudden change in direction of dike A 1 towards the east.

Suggestions as to Future Work

The possible outcrops on claims 34958, 34969, 34971 and 34972 should be examined and corelated with the geology of the other claims.

Trenches should be dug from outcrops 40 and 42 to outcrop 41, in order to ascertain the nature of the contact of the diorite with the serpentine and with the sediments.

A little additional work could be done on the group of outcrops east of the river and south of the line between outcrops 10 and 45. This area is largely moss covered.

The question of a regional geological survey of the whole of Eldorado township should be considered. This work to include the collection and co-ordination of all information acquired to date, and of a visit by a competent geologist to all outcrops in the township. Regional structure and its relation to local structure should be care-

fully considered. There is a sentence thatlingers in the writer's mind. "SOMETHING HAPPENED IN ELDORADO". Whether that something is of economic importance is an open question,however. The regional picture shows a convergence of structural features on the mid-western part of the township and such convergences are generally thought to be favorable to the accumulation of mineral deposits. To date, however, the numerous quartz veins found have not yielded any evidence of the presence of gold. The cost of such a survey should be divided among the owners of all the claims in the township.

A magnetic survey. By this means it would be possible to outline the contact between the serpentine and the Keewatin lavas, but unless this contact is of economic importance, the information so obtained would be only of academic interest. Areas of high magnetic intensity might indicate the presence of the iron formation or of replacement deposits of iron ores, neither of which would probably be of commercial value. The only sign of the presence of base metals so far found in the map area was a tiny cube of gotena in outcrop 13. Deep trenching or drilling would show the cause of the magnetic highs.

A gravity survey. Results would parallel those of the magnetic survey, as far as iron-bearing deposits are concerned. The location of non-magnetic or very slightly magnetic base metal deposits might be determined by this method.

A Geiger counter survey for uranium and thorium. No pegmatite dikes were found in the field, and no outcrops of granite were encountered. A number of outcrops of rocks under the classification of "granite, pegmatite, quartz-feldspar porphyry and gneiss" are shown in map 47d of the Ontario Dept. of Mines as occurring in the eastern part of Eldorado township. This map also shows outcrops of porphyritie

pink granite as present in the mid-west and southwest parts of the township.

Dredging of the pool in the river below the second rapid. Redstone river has cut a little gorge through the soft serpentine rock, type S 4, and all the heavy resistant minerals or metals originally contained in the serpentine will almost certainly be found in the quiet water below the rapid. The pool below the third rapid would prevent any products of river erosion from upstream from the second rapid entering the basin below the second rapid. An exact survey with areal control could be made in winter through the ice, but it would seem advisable to first do some preliminary dredging in summer from a boat or canoe. This dredging would show if there are any minerals or metals of value in the possible fault zone underlying the river.

Biogeochemical work. This is a comparatively new phase of geophysics. The main principle on which it rests lies in the fact that some species of plants absorb through their roots solutions derived from metalliferous deposits found in the soil in which the plants grow. These solutions are carried up in the sap and are concentrated in the leaves or other parts of the plant. If these parts are burnt and the ashes tested for the presence of metals, generally by spectroscopic methods, the presence of metalliferous deposits can sometimes be detected.

The science is of quite recent development and many difficulties and complications are present. Among them are the presence of a covering of glacial drift and the selectivity of certain plants for certain metals. Field work requires the services of a botanist and a geologist. Laboratory work requires the use of a chemical laboratory, usually with

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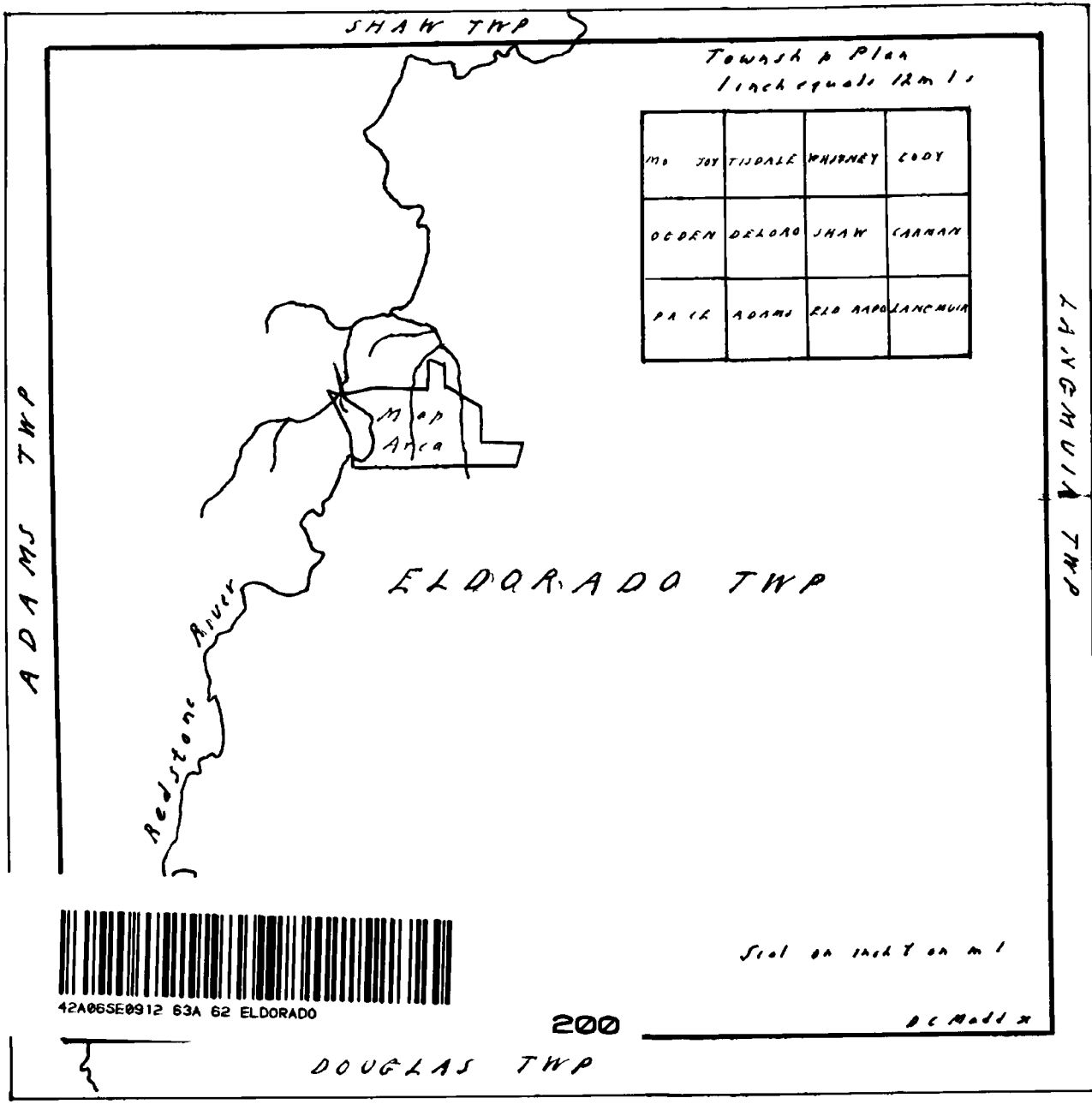
a spectroscope and a trained staff to handle it. Plants growing in swamps have been found to concentrate metals in their leaves to a great extent. In the Canadian Shield where large areas show only a few widely spaced outcrops, any method that would give an inkling as to conditions at depth is invaluable. Analysis of moss growing directly on rocks in an area as dustless as Eldorado township, would not be subject to many of the limitations of some other conditions. The use of a sounding rod to test the depth of the overburden would be an aid to this method. The United States Geological Survey has a group which is developing field methods for the most efficient conduct of this type of prospecting.

The chemical testing of the water of streams and pools is allied to the method above and is subject to some of the limitations of that method.

All directions in this report are magnetic. The magnetic declination in this area is about eight degrees west.

PLAN SHOWING POSITION OF THE MAP AREA

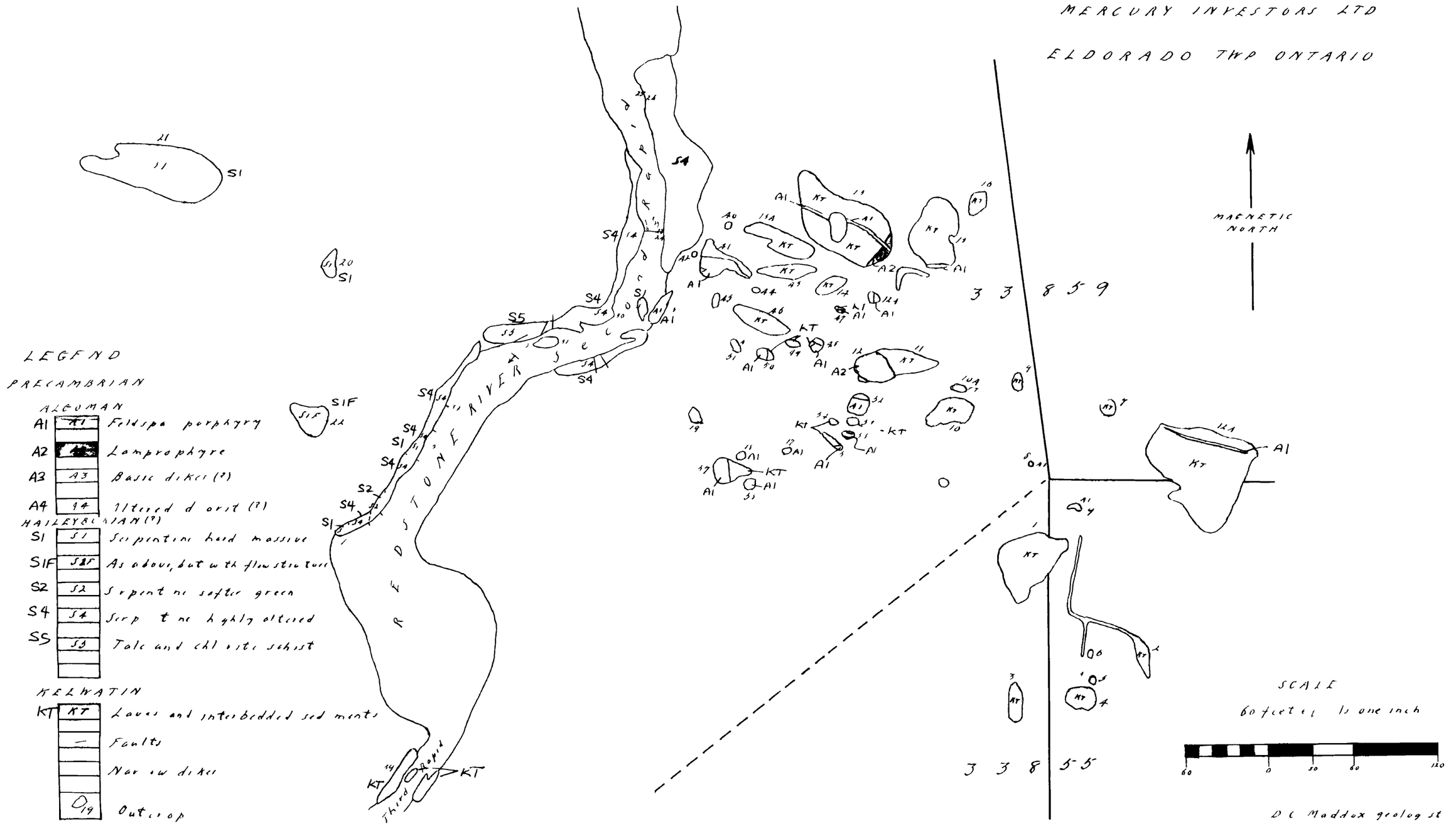
MERCURY INVESTORS LTD



SHORE SECTION AND ADJACENT AREAS

MERCURY INVESTORS LTD

ELDORADO TWP ONTARIO

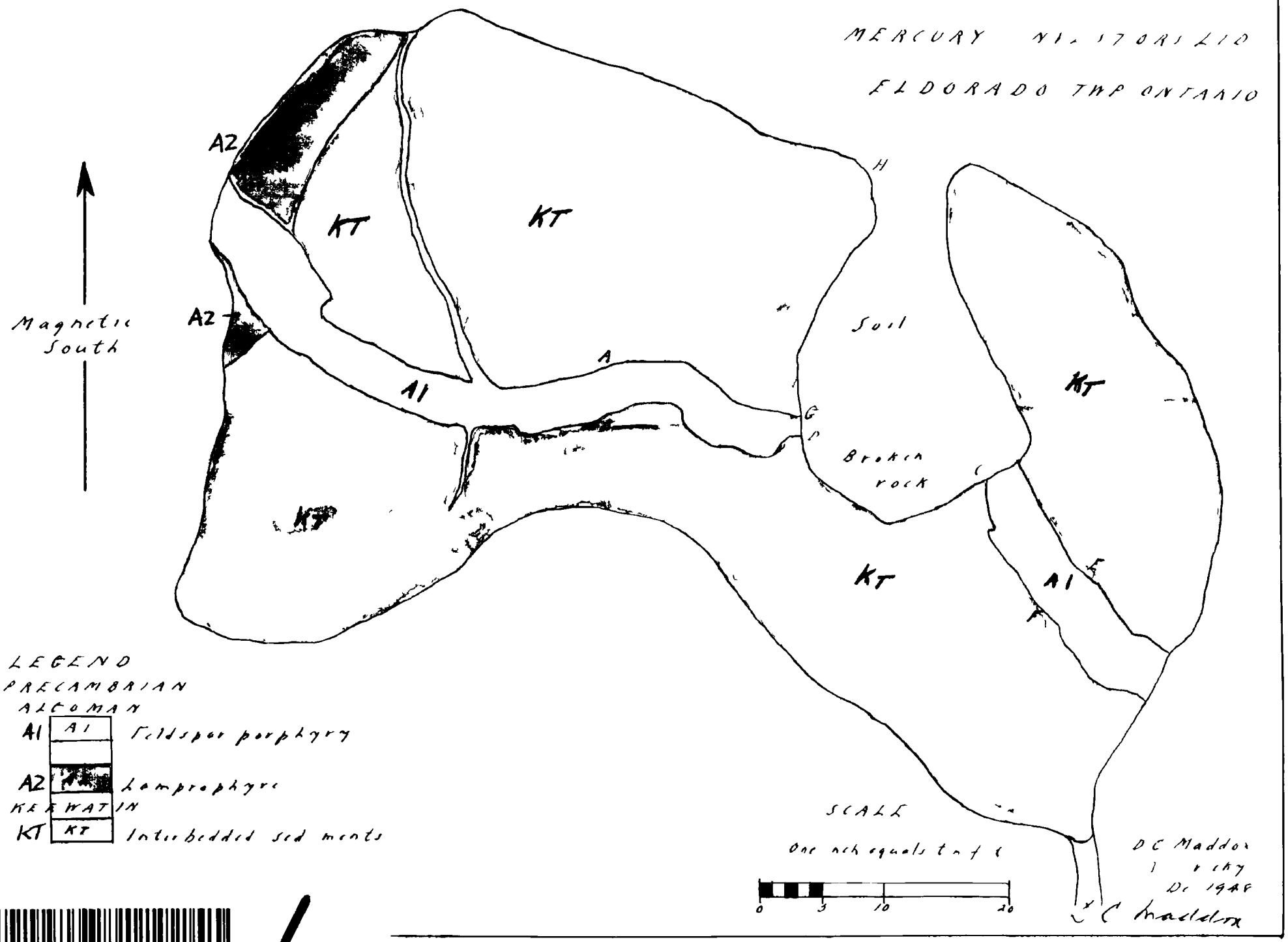


FILE COPY

PLAN OF QUICKOP 13

MERCURY NI. TORILIO

ELDORADO THP ONTARIO



LEGEND

PRECAMBRIAN

ALGOMAN

A1 — A1 — Feldspar porphyry

A2 — A2 — Lamprophyre

KEEWATIN

KT — KT — Interbedded sediments

SCALE

One inch equals two feet

0 3 10 20

D C Maddox
1 [illegible]
Dec 1948

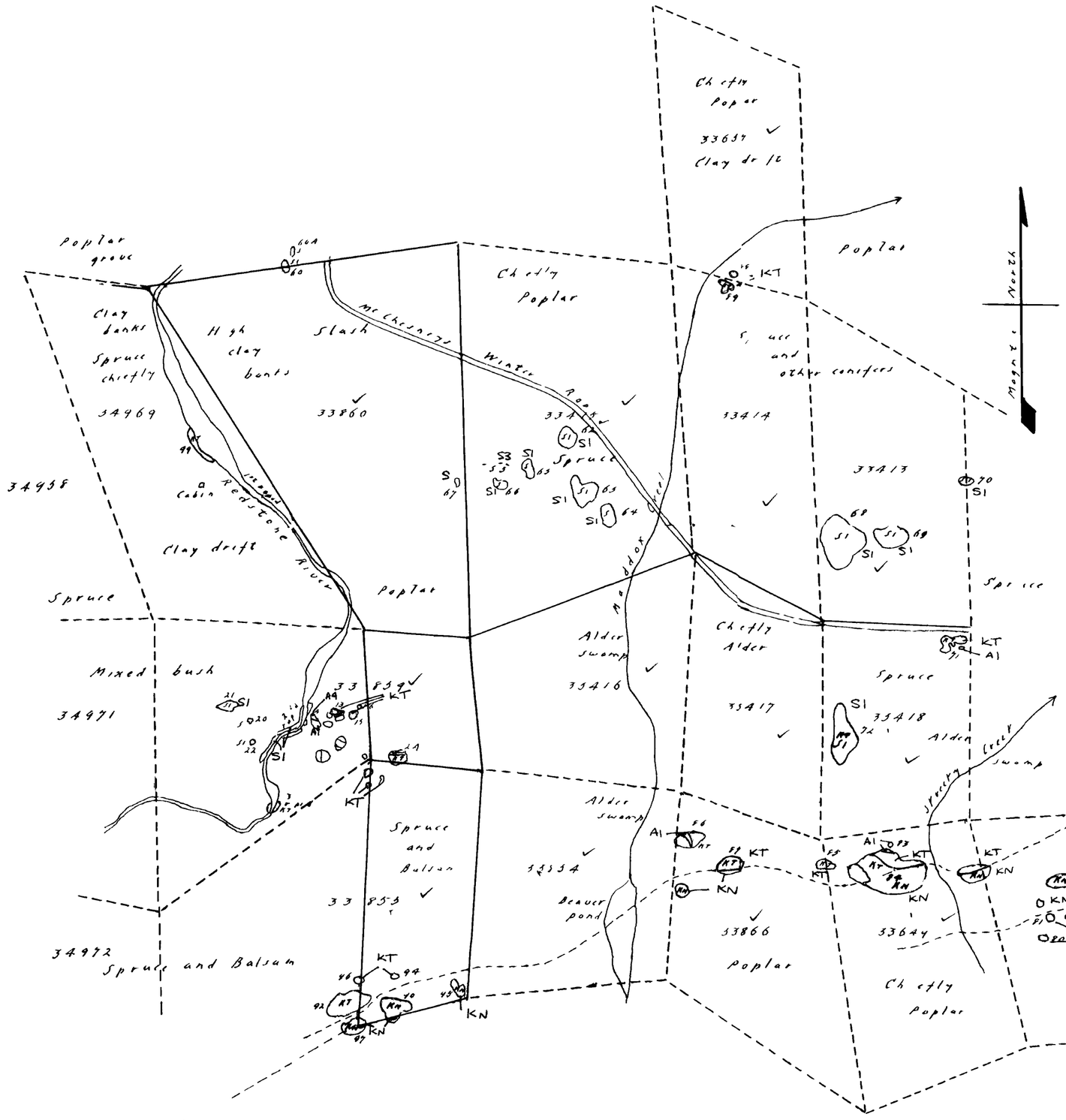
C Maddox

CLAIMS OF THE MERCURY INVESTORS LTD

ELDORADO TOWNSHIP

PORCUPINE MINING DIVISION

ONTARIO CANADA



LEGEND

PRECAMBRIAN

KEWEENAWAN

Kn — Olivine diabase

ALGOMAN

A1 — Feldspar porphyry

A2 — Lamprophyre dykes

A3 — Basic dykes (?)

A4 — Altered diorite (?)

HAILEYBURIAN (?)

S1 — Serpentine, hard massive

S2 — Serpentine, green soapy

S3 — Serpentine, massive structured

S4 — Serpentine, highly altered

S5 — Talc and chlorite schist

KEEWATIN

KT — Lavas and interbedded sediments

Faults

Basic dikes

Outcrops

Outcrop #2 colored grey inadvertently instead of green

Trenches shown in red

SCALE

One inch equals 400 feet

400 0 200 400 800

DC Maddox geologist

A Skiecky assistant geologist

Dec 1947

DC Maddox