SPANEX RESOURCES LTD.

GEOLOGICAL REPORT ON THE FORT HOPE GOLD PROSPECT
DISTRICT OF KENORA (PATRICIA PORTION)
NORTH-WEST ONTARIO

- by -

C. R. Bowdidge, M.A., Ph.D.

29th March 1979
GEOLOGICAL REPORT ON THE FORT HOPE GOLD PROSPECT, NORTH-WEST ONTARIO

SUMMARY

The Fort Hope Gold Prospect comprises sixteen Mining claims situated 11 miles north-west of the village of Fort Hope. It may be reached by boat, from Fort Hope, which is served by scheduled flights from Thunder Bay, Nakina, and Pickle Lake, or directly by float-plane via Rond Lake, from which a road leads to the property.

A quartz vein system carrying high-grade gold mineralization was discovered in 1927, and has been intermittently explored at various times since that date. A shaft was sunk to 125 feet, with 330 feet of lateral development on the 100 ft. level. Considerable surface trenching and about 5000 feet of diamond drilling has been carried out in the immediate shaft area.

The present programme of exploration has consisted of an examination of the known showings, and line cutting and magnetic, VLF-EM, and geological surveying of the remainder of the property.

The property is underlain by volcanic, intrusive, and sedimentary rocks of Archaean age. In the northern part a succession of basaltic lavas striking east-west and facing south is intruded by a series of gabbroic sills. A possible granitic stock about 2500 feet across is inferred from the magnetic data. The southern part of the property is underlain by tuffs and agglomerates, which are succeeded to the south by metasediments. These consist of metagreywacke, with the presence of magnetite iron formation and graphite schist inferred from magnetic and VLF-EM data.
The main showing or shaft vein consists of a series of narrow quartz stringers in sheared metabasalt, mineralized with pyrrhotite, pyrite, chalcopyrite, and free gold. An intrusive quartz-feldspar porphyry was located in the underground workings. Assays averaging 1.23 oz/ton of gold over a length of 176 feet and an average width of 3.25 feet have been reported from this vein, but these cannot be substantiated as only a short length is now exposed. A second showing known as the California vein lies about 400 feet to the east. It is a simple quartz vein averaging 1-2 feet in width, which carries pyrrhotite, chalcopyrite, and pyrite. The average of several reported assays is low.

The known showings are not of immediate interest because of their small size. It is, however, recommended that the remainder of the property, most of which is overburden-covered, be explored with a view to testing possible shear zones and faults, which might host more extensive vein systems, and also in the vicinity of the inferred granitic stock.

A first stage of exploration is recommended, at an estimated cost of $47,500, involving a modest amount of additional magnetic and VLF-EM surveying, and 1800 feet of diamond drilling in five holes, to test zones of favourable geology as inferred from the geophysical data. A second stage, to cost approximately $40,000, involving a further 1600 feet of diamond drilling in six holes, will be contingent on satisfactory results from stage I.
INTRODUCTION

The Fort Hope Gold Prospect was recently acquired by staking on behalf of Lorne Dempster. Under a joint venture agreement between Mr. Dempster and La-Chib Mines Ltd., the writer was requested to visit the property, examine the gold showing, and to carry out geophysical surveys to appraise the remainder of the property. A visit was made to Fort Hope from October 6th to October 8th, 1978, by the writer accompanied by A.E. Jerome, and E. Jerome, line cutters, and P.A.R. Brown, geologist. These latter remained on the ground until October 16th, completing the survey programme.

PROPERTY

The property consists of sixteen contiguous unpatented mining claims situated in the Rich Lake Area, District of Kenora (Patricia Portion), Thunder Bay Mining Division, North-west Ontario. An extract from the Ministry of Natural Resources Claim Map for the area is appended to this report. It shows the claims slightly to the east of their actual locations. Each claim is 40 acres, more or less, for a total area of about 640 acres. Details are as follows:

Claims TB 465884 to 465887 inclusive, staked June 1st, 1978
  "  TB 465888 to 465891  "  "  June 2nd, 1978
  "  TB 465892 to 465895  "  "  June 3rd, 1978
  "  TB 465896 to 465899  "  "  June 4th, 1978

All the claims were staked by Albert Hopkins, and recorded on June 19th, 1978. If the surveys described in this report are accepted by the Ministry of Natural Resources as assessment work on a full "performance and coverage" basis, they will give 80 days of assessment work per claim, or a total of 1280 days, sufficient to maintain the claims in good standing until June
19th, 1981, with a credit of 20 days per claim towards the next year's re-
requirement of 40 days per claim. It is, however, possible that the surveys 
will only be accepted at a reduced rate for some of the smaller claims.

LOCATION, ACCESS, AND LOCAL RESOURCES

The Fort Hope Prospect is located 11 miles north-west of the Indian village 
of Fort Hope, which lies on Eabamet Lake and is 92 miles east of Pickle 
Lake, 97 miles north-north-west of Nakina, and 202 miles north-north-east 
of Thunder Bay. Fort Hope has an airstrip and a float-plane dock, and is 
served by twice-weekly flights from each of the above-mentioned towns.

The old mine site is reached by two access roads, each slightly over one 
mile long, from Rond Lake and Eabamet Lake respectively. The former is a 
corduroy road, while the latter is a bulldozed trail. Both roads are suit-
able for use as tractor trails without further attention. It is approxim-
ately 10 miles by boat from the head of Eabamet Lake, where the road ends, 
to Fort Hope. Rond Lake is separated from Eabamet Lake by a rapids and a 
short portage.

Access to the property for an exploration programme will normally be by 
float-plane from Nakina direct to Rond Lake, where a camp could be estab-
lished at the end of the corduroy road. A canoe could be used to bring 
supplies from Fort Hope.

Fort Hope is a community of about 500 native people, most of whom are pres-
ently engaged in subsistence fishing and hunting, and a little trapping. 
This population is a potential reserve of labour. Water and timber are
abundant in the area. Hydro-electric power is not available locally, but there are several sets of rapids which could be used to power a modest generating station.

**TOPOGRAPHY AND VEGETATION**

Most of the property consists of flat ground on which labrador tea is abundant, with a rather open growth of spruce and some tamarack. The shaft is situated on a low ridge of bedrock covering several acres, which has mostly been cut over for cordwood in the past and is now covered in a thick growth of mixed balsam fir, jackpine, and birch. Three small creeks run across the property, and each is bordered by swampy ground with black spruce, cedar, and alders.

**HISTORY AND PREVIOUS WORK**

The Fort Hope Gold Prospect was discovered by Lorne Howey and W. Smith in 1927, during a regional prospecting programme. Surface sampling on the mineralized vein was reported to have given, over a length of 575 feet, and widths ranging from 8 to 78 inches and averaging 34.5 inches, assays of from 0.02 to over 15 ounces per ton gold, and averaging 1.01 ounces per ton ($20.81 with gold at $20.67 per ounce). These assay results, although they are probably misleading (see below), have been repeated in enough official sources to have gained some credibility.

A shaft was sunk in 1928 to a depth of 125 feet, and 330 feet of lateral work was carried out on the 100 ft. level. This work was done by Fort Hope Gold Mines Ltd. The property appears to have been inactive until 1934-5, when Fort Hope Consolidated Gold Mines Ltd. dewatered the shaft, undertook...
further trenching, and took numerous surface and underground samples. Two government reports state that 17 diamond drill holes totalling 5000 feet were drilled at this time, and that a further 5000 feet was drilled in 1946. However, reports from that period make no mention of diamond drilling, and it is assumed here that only one programme of drilling was carried out, in 1946. In 1938, Hopa-Tricia Gold Mines Ltd. held the property, but there is no record of any work being done by that company.

In 1946, Golden Hope Mines Ltd. was organised to acquire the property, and reportedly carried out diamond drilling as well as a magnetic survey. There is no record available of the results of any of this work. In 1958, Golden Hope Mines Ltd. carried out a small amount of additional trenching and sampling on the original showings. The same company had examinations made in 1963 and 1972, but a report is only available for the latter.

In 1978, the original patented claims which had formed the property for 50 years were allowed to lapse, and the ground was re-staked for Lorne Dempster.

The only work in the immediate area, other than on the Fort Hope property, consists of a single diamond drill hole by Canico Ltd., 1.1 miles south-east of the old Fort Hope shaft. It intersected graphite schist in a metasedimentary environment, and is assumed to have been drilled to test an anomaly found by an airborne electromagnetic survey.
REGIONAL GEOLOGY

The Fort Hope area is underlain by rocks of Archaean age, belonging to the Superior Province of the Canadian Shield. The property lies within an east-west trending greenstone belt about 8 miles wide. This forms part of the "Uchi Belt", a discontinuous series of volcano-sedimentary belts separated by granitic, gneissic, and migmatitic material, which runs slightly north of east from the south end of Lake Winnipeg to the Hudson Bay Lowlands.

The area has been mapped three times by the Ontario Department of Mines and the Ontario Geological Survey\(^1,3,4,14\). The most recent and most detailed mapping\(^3,4\) shows the greenstone belt to be composed of mafic and felsic volcanics and pyroclastics, and clastic metasediments.

The northern part of the property is shown on Ontario Geological Survey Map 2379 as being underlain by mafic metavolcanics with several sill-like bodies on metagabbro. Flow tops in the area are to the south. The southern part of the property is underlain by a belt of metasediments, which do not outcrop in the immediate area.

PRESENT EXPLORATION PROGRAMME

Line Cutting: An east-west base line was cut across the property, starting close to the shaft and running 1600 ft. west and 2800 ft. east. North-south cross-lines were cut at 400 ft. intervals. Those to the south were cut to the property boundary, which is close to 2600 ft. south of the base line. Lines to the north did not reach the north boundary. A total of 12.0 miles of line was cut, chained, and picketed.
Magnetic Survey: A Geometrics Model G-836 "Unimag" proton magnetometer was used to survey the property magnetically. This instrument gives a 4-digit readout of the total field intensity to within ± 10 gammas. Diurnal corrections were effected by surveying the base line twice to establish values for each station on the base line, which values were then used to make corrections for the cross-lines. The results are presented on the magnetic map, and are discussed in the section "Geology of the Property", below.

VLF-EM Survey: A Geonics EM-16 VLF receiver was used for this survey, and was tuned to transmitter NPG in Seattle (18.6 kHz). Readings were taken at 50 ft. intervals on all lines except 20E, 24E, and 28E, where most readings were at 100 ft. intervals. The results were first plotted in profile form, but were hard to interpret because of the large number of conductors, so the Fraser filter was used. This method allows the results to be contoured, and a semi-quantitative assessment of anomaly strength to be made. Results are presented in this form on the VLF map, and are discussed below.

GEOLOGY OF THE PROPERTY

Outcrop is very poor on the Fort Hope property, and the following descriptions are based on only a few outcrops.

Metabasalt: This is typically a fine-grained, dark grey-green, sub-massive rock. The coarser-grained samples are clearly metamorphosed, and minerallogically they are amphibolites. A few rather poorly developed pillow structures were noted in the shaft area.

Metagabbro: This rock is distinguished from the metabasalt by its coarser grain size. Relict ophitic texture is seen in the fresher samples. The writer uses a rule of thumb that makes distinction between gabbros which
are intercalated with basaltic flows on the basis of whether or not they give rise to magnetic anomalies. Those that do are assumed to be intrusive sills, and hence of more interest from the point of view of gold exploration than those that do not, which are assumed to be thick flows which have cooled slowly. It is not known whether there is any theoretical justification for this classification, but it does permit a distinction to be made between, for example, the gabbro exposed at 8E, 5S, and that at 8E, 11S. The former is non-magnetic, while the latter gives a magnetic anomaly, as does the band running across the northern end of the grid. The magnetic data allow two other possible gabbro sills to be inferred in areas of poor outcrop, as shown on the geology map.

At 8E, 10+50S is an outcrop of metagabbro carrying 1-2% of disseminated magnetite, and a trace of disseminated chalcopyrite. This forms a narrow band along the north margin (bottom?) of the sill, which can be traced on the magnetic map, and is plotted on the geology map as "oxide-bearing gabbro".

At 2E, 7+50S is a small outcrop of a rather indeterminate ultramafic rock. It is composed mainly of grey amphibole, and is referred to on the map as "pyroxenite".

**Tuff and Agglomerate:** Two outcrops of pyroclastic rock were observed. They consist of lenticular basaltic fragments in a matrix of similar composition. The pyroclastic texture is not easy to see on a fresh surface, but stands out well on the weathered surface.

**Metasediments:** Only one outcrop of metasedimentary material was observed.
It is a grey, medium-grained rock, moderately well-bedded, and composed of quartz, feldspar, biotite, and chlorite. It is assumed to be a metagreywacke. A magnetic anomaly at 16W, 17S is assumed to indicate a band of magnetite iron formation. Similarly, a VLF conductor just to the north of it is assumed to represent a band of graphitic schist, as it is more or less on strike with the occurrence drilled by Canico to the east.

**Quartz-Feldspar Porphyry:** One occurrence of this distinctive rock type has been found in the shaft area. It consists of phenocrysts, up to 3 mm. across, of white feldspar and blue quartz, in a fine-grained felsic matrix. It is conspicuously fresher than the volcanics it intrudes. It forms a small sill-like body of very irregular outline.

**Granite:** At 5400E on the base line, is an outcrop of metabasalt which is intruded by a 15 ft. wide band of granitic material. This appears to be a case of lit-par-lit injection, as there are several narrow seams of volcanic material included in the granite. A semi-circular area to the north of this occurrence, which is characterised by very little magnetic relief, has been provisionally interpreted as a granitic stock about 2500 feet across. This area has no outcrop. It corresponds with a distinct magnetic low seen on the aeromagnetic map.

**Structure:** All the rocks strike approximately east-west, but the observed dips vary from vertical to 25° south. There is geophysical evidence of two faults as follows: (i) a weak magnetic anomaly extends across the inferred granitic stock from 24E, 1450S to L0, 26N. The inference that it may represent a fault comes from the way in which it appears to offset the
most northerly gabbro sill, and from the fact that it is parallel to the major Rond Lake Fault shown on the geological map. The magnetic anomaly is hard to explain unless the assumed fault is either mineralized, or intruded by a basic dyke. (ii) a VLF conductor (C) extending from L.O, 5+50S, to 16W, 10+50S, is distinctly discordant to the strike of the rocks as indicated by the magnetic data, and it can be interpreted as slightly offsetting the gabbro sill which it transects.

VLF Conductors: The following VLF conductors have been indentified on the geology map by letters (A to G), and are discussed briefly here:

"A": is a strong conductor, with a weak positive quadrature response, indicating moderate conductivity. It lies at the inferred contact of the postulated granitic intrusive, and may be caused by a shear along the contact zone.

"B": is also a strong conductor, with a slightly stronger positive quadrature response than "A", suggesting poorer conductivity. It may also represent a shear zone.

"C": has been discussed above as a possible fault. The quadrature responses change from positive on line 4W to reverse on line 16W, indicating that the conductivity, either of the zone itself, or the overburden, is increasing to the west.

"D": is a rather weak conductor with a strong positive quadrature response indicating poor conductivity. This suggests a shear zone. Of interest is that a strong magnetic low is associated directly with this anomaly.

"E": is also a weak conductor with a weak positive quadrature response, indicating moderate conductivity and suggesting a shear. This anomaly is in the inferred granite stock.
"F": is a strong to moderate conductor, with a weak positive quadrature response, indicating moderate conductivity. It is definitely conformable to the strike of the rocks, and corresponds to a band of pyroclastics between two gabbro sills. It may represent a schistose band, possibly with a little graphite.

"G": is a moderate to strong conductor with a reverse quadrature response indicating good conductivity. It is also conformable with the strike and, as discussed above, probably represents a graphite schist zone.

MINERALIZATION

In examining the mineralization at the old showings, the writer experienced some difficulty in reconciling what was visible on the ground with the various descriptions and even plans, which have appeared in private reports over the years. A plan dated 1927, which is in the files of the Resident Geologist in Thunder Bay, shows a single vein striking NE-SW and opened up by trenching at intervals over a length of 1300 feet. Another plan, copies of which have appeared in at least three sources (where it never matches the descriptions given by the authors of the reports) is believed to show the original 1927 sampling results. It shows the shaft, with a curved vein running just south of it, where fifteen samples over a length of 176 feet give an unweighted average of 1.23 oz/ton gold over an average width of 3.25 feet. The vein is shown continuing to the ENE with no samples for a length of 250 feet, after which there are a further 8 samples over a length of 400 feet. By discounting one sample which gave only a trace, and averaging the remaining 22 samples, an unweighted average of 1.02 ounces over a length of 575 feet and an average width of 3.95 feet. This is close enough to the originally reported average to have been the
source for the misleading statement. The writer believes that the curved vein, 176 feet long, is the shaft vein, and the easterly "extension" is the California Vein. These two are in fact not connected, and are very probably of different ages. The published average is misleading on the matter of the 575 ft. length because (a) this discounts a 250 ft. length which is not sampled (neither is it mineralized), (b) because the sampling density is much greater at the west end, and (c) because the samples which were taken from the California Vein were probably taken at highly selected locations so as to give good assay results.

The shaft is oriented NE-SW and appears to have been sunk on a vein striking in this direction. A weak system of grey quartz stringers over a width of 1-2 feet, with some pyrrhotite, pyrite, and chalcopryte impregnated in the metabasalt wall rocks can be seen running north-east for about 30 feet from the shaft. This is identifiable as the "shaft vein" sampled in 1935, which gave an average of 1.11 oz/ton gold over an average width of 1.6 ft., for a length of 25 feet. Interestingly, after the moss was stripped from the north-east end of the trench, the painting showing the locations and numbers of the old samples was still visible. A duplicate was taken of sample 65, which had given 1.03 oz/ton gold over 12 inches. This sample (FH-3) gave 1.12 oz/ton of gold, showing that at least the old samples were not salted. Closer to the shaft, another sample over 2 feet (FH-1) gave 0.18 oz/ton of gold.

The shaft collar was opened up in 1958 by Earl Gagan for Golden Hope Mines Ltd., who obtained an assay of 50.02 oz/ton gold from quartz vein material at the extreme north-east edge of the shaft. The end of this vein
is still visible about 3 feet from the shaft. It pinches out totally. Gagan also stripped off the waste rock of the dump, from the vein to the south-west of the shaft, and reported that it curved round to a westerly direction and increased in width to about 4 feet, with free gold "very much in evidence". This part of the vein is no longer visible, as the shaft muck has sloughed back into it, but the course of the excavation can still be seen.

On the 100 ft. level, a drift was put in on a NE-SW trending vein about 35 feet north-west of the shaft. Assays of this vein gave an average of 0.61 oz/ton gold for a length of about 20 feet and a width of 1-2 feet. This vein is not the shaft vein, which dips steeply to the south-east, and may not have been cut at all on the 100 ft. level (this is the opinion of E.W. Gagan, but it implies an implausible degree of ignorance on the part of the operators of the mine in 1928). Also on the 100 ft. level, a lens of quartz was found measuring about 4 ft. by 14 ft. and assaying up to 1.06 oz/ton gold. A sill-like mass of porphyry was cut by the 100 ft. level, about 50 feet north of the shaft.

Samples containing visible gold and presumed to be from the shaft vein can be found on the dump. They consist of sheared metabasalt with a plexus of grey quartz stringers, generally less than one inch in width, the whole assemblage carrying 1-2% of pyrrhotite, with lesser amounts of pyrite and chalcopyrite, and fine specks of gold. A selected sample of this material (FH-4) assayed 8.56 oz/ton of gold.

About 400 feet east of the shaft is another vein known as the "California
Vein". This is different in character from the shaft vein, and much less interesting, being a simple vein of milky quartz with splashes of pyrrhotite and minor chalcopyrite. It has been trenched intermittently over a length of about 300 feet. In places an irregular mass of quartz-feldspar porphyry forms the north wall, the remainder of the host rocks being metabasalt. The vein attains a maximum width of about 6 feet, but in places pinches to less than one inch. Samples assaying up to 1.52 oz/ton of gold have been reported, but the average is low, and the writer is inclined to believe that these samples were taken at selected points to include the odd speck of gold. In any case, the average is low. A grab sample from the dump beside a deep pit on this vein (FH-2) assayed only 0.06 oz/ton gold.

Numerous other quartz veins were observed around the shaft, in old trenches or stripped areas. All were narrow, discontinuous, and composed of barren milky quartz.

Eleven diamond drill collars were seen by the writer, and are plotted on the accompanying sketch of the shaft area. An additional four drill hole locations were taken from a report by Dent, which was not seen until after the examination. It appears that the diamond drilling, whenever it was done, was carried out in a systematic and responsible way, and the fact that there are no records of the results suggests that no encouragement was obtained.

Three plans of the shaft area are appended. one is a sketch plan showing the writer's observations, and one was made up by Wallace, using two old plans by Laederer. It shows the surface plan of the California Vein super-
imposed on composite surface/underground plan. In reality, the California Vein is 400 feet further east. The third plan appended is a copy of the supposed 1927 sampling results, taken from Laederer\textsuperscript{7}, whose copy is the most legible.

CONCLUSIONS AND RECOMMENDATIONS

The Fort Hope Gold Prospect consists of one small occurrence of high-grade gold mineralization. A shaft has been sunk, underground development has been carried out, and diamond drilling has been done, with modest success at best. The mineralization appears to be localised by shearing in the metabasalt host rocks, and is quite possibly related to an intrusive quartz-feldspar porphyry which occurs in association with it. While the occurrence itself is of no immediate interest because of its small size, and the apparent limited extent of the associated shearing, it does indicate that conditions favourable to mineralization exist on the property. The remainder of the claim group should be explored for other possible gold-bearing veins. Attention should be paid particularly to structural features such as faults and shear zones, which may host larger vein systems than those found in the shaft area. Also, the postulated presence of a granitic stock should be checked, as this would have favourable implications for the development of veining around its margins.

It is recommended that a programme of diamond drilling be carried out, as indicated below. Stage I consists of five holes directed at the most interesting targets. Stage II includes three holes which will be partly dependent on results from Stage I, and three more holes on lower priority targets.
Stage I
(1) A hole should be drilled to test VLF conductor "A", which is inferred to represent a shear at the contact of the assumed granite.
(2) A hole should be drilled to test the inferred gabbro sill close to its contact with the postulated granitic stock. This should be a favourable area for fracturing and veining. The exact location of the hole should await a more detailed magnetic survey in the immediate area.
(3) A hole should be drilled to test the north-west trending structure in the assumed granite. It will also be possible to test one of the VLF conductors with the same hole.
(4) A hole should be drilled to test the VLF conductor "D", which is on strike with the known showings, and is associated with a magnetic low, which is suggestive of the presence of pyrrhotite.
(5) A hole should be drilled to test the eastern end of the magnetic low which is associated with the shaft area. It should be deep enough to cut the contact of the inferred granite stock.

Stage II
(6) If the granite is confirmed by Stage I, a hole should be drilled to test VLF conductor "E", which is the strongest conductor within the granite area.
(7) A hole is suggested to test VLF conductor "B", which is a strong conductor possibly indicating shearing, in an area of uncertain geology.
(8) A hole should be drilled to test the full width of the oxide-bearing phase at the base of the gabbro sill.
(9) A hole should be drilled to test VLF conductor "C", which may represent a fault, where it intersects the gabbro sill. About 400 feet to the east of the proposed hole, a number of quartz veins were observed in the gabbro.
(10) A second hole to test conductor "A", depending on the results of hole 1.
(11) A second hole to test conductor "D", depending on the results of hole 4.

Details of the proposed holes are as follows:

<table>
<thead>
<tr>
<th>DDH</th>
<th>Lat.</th>
<th>Dep.</th>
<th>Dirn</th>
<th>Incl.</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>3+00N</td>
<td>3+00E</td>
<td>030°</td>
<td>45°</td>
<td>300'</td>
</tr>
<tr>
<td>2</td>
<td>10+00N</td>
<td>6+00W</td>
<td>345°</td>
<td>45°</td>
<td>400'</td>
</tr>
<tr>
<td>3</td>
<td>14+00N</td>
<td>12+50E</td>
<td>200°</td>
<td>45°</td>
<td>400'</td>
</tr>
<tr>
<td>4</td>
<td>2+50S</td>
<td>12+00W</td>
<td>360°</td>
<td>45°</td>
<td>300'</td>
</tr>
<tr>
<td>5</td>
<td>0+50S</td>
<td>8+00E</td>
<td>360°</td>
<td>45°</td>
<td>400'</td>
</tr>
<tr>
<td>Stage I total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage II</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>4+50N</td>
<td>24+00E</td>
<td>360°</td>
<td>45°</td>
<td>300'</td>
</tr>
<tr>
<td>7</td>
<td>8+00S</td>
<td>4+00E</td>
<td>360°</td>
<td>45°</td>
<td>200'</td>
</tr>
<tr>
<td>8</td>
<td>11+50S</td>
<td>4+00E</td>
<td>360°</td>
<td>45°</td>
<td>300'</td>
</tr>
<tr>
<td>9</td>
<td>9+00S</td>
<td>5+00W</td>
<td>360°</td>
<td>45°</td>
<td>200'</td>
</tr>
<tr>
<td>10</td>
<td>4+50N</td>
<td>0+00E</td>
<td>030°</td>
<td>45°</td>
<td>300'</td>
</tr>
<tr>
<td>11</td>
<td>2+50S</td>
<td>8+00W</td>
<td>360°</td>
<td>45°</td>
<td>300'</td>
</tr>
<tr>
<td>Stage II total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In addition to the diamond drilling, it is recommended that a small additional amount of line cutting and magnetic and VLF-EM surveying be carried out over the north part of the property. This work should be on east-west lines at 400 ft. intervals, so as to pick up any north-south structures not found by the present surveys. This will entail about 5' line miles, and could probably be accomplished for $500 per mile if it was coordinated with the start of the drilling programme.

The cost of diamond drilling, using wireline equipment and recovering AQ core, is estimated at approximately $25 per foot. This would include ancillary costs such as supervision and assaying. Using this figure, the total budget for the proposed programme would be as follows:
## Stage I:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line cutting, mag. and VLF surveys, 5 miles @ $500</td>
<td>$2,500</td>
</tr>
<tr>
<td>Diamond drilling, 1800 ft. @ $25/ft.</td>
<td>45,000</td>
</tr>
<tr>
<td></td>
<td>47,500</td>
</tr>
</tbody>
</table>

## Stage II:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diamond drilling, 1600 ft. @ $25/ft.</td>
<td>40,000</td>
</tr>
<tr>
<td>Total Stages I and II</td>
<td>$87,500</td>
</tr>
</tbody>
</table>

Respectfully submitted,

C. R. Bowdidge, M.A., Ph.D.

29th March 1979
REFERENCES

(1) Geology of the Fort Hope Gold Area, District of Kenora (Patricia Por-


1974.

Includes Map 2379.

(5) Mineral Development Sector, Dept. of Energy, Mines & Resources, Ottawa,
File no. 50568? (52P/9 AU1).

Dated Feb. 1946, but stated to have been written in July 1935.

Laederer (unpublished), dated August 1938.


(9) Report on the Property of Golden Hope Mines Ltd., by E.W. Gagan (unpub-
lished), dated February 1958.

(10) Golden Hope Mines Ltd., Comments by Earl W. Gagan, P. Eng. at Directors' 


(13) Report on Golden Hope Mines Ltd., Rich Lake Area (unpublished), by
T.W. Dent, August 1972.

(14) Geology of the Fort Hope Gold Area, by V.K. Prest. Ont. Dept. Mines,

Files.


(18) Plan of Fort Hope Discovery, by L.B. Howey and W. Smith, dated Nov.
10, 1927 (unpublished).
Type of Survey(s): **Magnetic, Electromagnetic, Geological**

Township or Area: **RICH LAKE AREA**

Claim Holder(s): **LA-CHI MINE LTD.**

Survey Company: **PHILIP A. P. BROWN**

Author of Report: **C. R. BOWIDGE**

Address of Author: **115 AMELIA ST., TORONTO, ONT.**

Covering Dates of Survey: **OCT. 6TH 1973 – MARCH 29TH 1979**

Total Miles of Line Cut: **12.0 MILES**

**SPECIAL PROVISIONS CREDITS REQUESTED**

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>DAYS per claim</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geophysical</td>
<td></td>
</tr>
<tr>
<td>Electromagnetic</td>
<td>40</td>
</tr>
<tr>
<td>Magnetometer</td>
<td>20</td>
</tr>
<tr>
<td>Radiometric</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>20</td>
</tr>
<tr>
<td>Geological</td>
<td></td>
</tr>
<tr>
<td>Geochemical</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>(enter days per claim)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnetometer</td>
<td></td>
</tr>
<tr>
<td>Electromagnetic</td>
<td></td>
</tr>
<tr>
<td>Radiometric</td>
<td></td>
</tr>
</tbody>
</table>

**DATE:** 10TH MAY '74  **SIGNATURE:** C. R. BOWIDGE

Author of Report or Agent

Res. Geol. _______________ Qualifications _______________

<table>
<thead>
<tr>
<th>File No.</th>
<th>Type</th>
<th>Date</th>
<th>Claim Holder</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL CLAIMS:** 16
### GEOPHYSICAL TECHNICAL DATA

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

<table>
<thead>
<tr>
<th>Number of Stations</th>
<th>600</th>
<th>Number of Readings</th>
<th>1201 (mag)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Station interval</td>
<td>100 ft</td>
<td>Line spacing</td>
<td>400 ft</td>
</tr>
<tr>
<td>Profile scale</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contour interval</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MAGNETIC**

<table>
<thead>
<tr>
<th>Instrument</th>
<th>GEONICS G-286 &quot;UNIHAG&quot; PROTON PRECESSION MAGNETOMETER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy – Scale constant</td>
<td>+ 10 gamma</td>
</tr>
<tr>
<td>Diurnal correction method</td>
<td>Base line correction (see text)</td>
</tr>
<tr>
<td>Base Station check-in interval (hours)</td>
<td>N/A</td>
</tr>
<tr>
<td>Base Station location and value</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**ELECTROMAGNETIC**

<table>
<thead>
<tr>
<th>Instrument</th>
<th>GEONICS EM-16 VLF RECEIVER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coil configuration</td>
<td>N/A</td>
</tr>
<tr>
<td>Coil separation</td>
<td>N/A</td>
</tr>
<tr>
<td>Accuracy</td>
<td>+ 1%</td>
</tr>
<tr>
<td>Method:</td>
<td>☐ Fixed transmitter ☐ Shoot back ☐ In line ☐ Parallel line</td>
</tr>
<tr>
<td>Frequency</td>
<td>N/P Seattle 18.6 KHz (specify V.L.F. station)</td>
</tr>
<tr>
<td>Parameters measured</td>
<td>In phase (percent tilt) · Quadrature (percent)</td>
</tr>
</tbody>
</table>

**GRAVITY**

| Instrument | | |
|------------|-----------------------------|
| Scale constant | | |
| Corrections made | | |
| Base station value and location | | |
| Elevation accuracy | | |

**INDUCED POLARIZATION**

| 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 | | |
TO. PARK BOWDIDGE,
442 Wellesley St. E.
Toronto, Ont. M4X 1H7
  Attn: Colin R. Bowdidge

RECEIVED Oct. 12/78

SAMPLE(S) OF 4 rock
Sample Au oz/ton

<table>
<thead>
<tr>
<th>Sample</th>
<th>Au oz/ton</th>
</tr>
</thead>
<tbody>
<tr>
<td>FH-1</td>
<td>0.18</td>
</tr>
<tr>
<td>2</td>
<td>0.06</td>
</tr>
<tr>
<td>3</td>
<td>1.12</td>
</tr>
<tr>
<td>4</td>
<td>8.56</td>
</tr>
</tbody>
</table>

INVOICE NO. 3811

SUBMITTED TO US SHOW RESULTS AS FOLLOWS:

DATE Oct. 26/78.

CERTIFIED BY

ASSAYERS - ANALYTICAL CHEMISTS - SPECTROGRAPHERS
FORT HOPE GOLD PROSPECT - LOCATION MAP, Scale 1:250,000
NORTH-EASTERN PART OF ONTARIO MINISTRY OF
NATURAL RESOURCES CLAIM MAP M-2322 (RICH
LAKE AREA), SHOWING LOCATION OF CLAIMS

Scale 1 inch to ½ mile (1:31,680)
EXTRACT FROM O.G.S. MAP 2379, OPIKEIGEN LAKE AREA, SHOWING GEOLOGY IN THE VICINITY OF THE FORT HOPE GOLD PROSPECT.

Scale 1 inch to ½ mile (1:31,680)

1 = mafic metavolcanics, 2 = felsic metavolcanics, 3 = metasediments
4 = gabbro and diorite, 5 = granite, granodiorite, etc.
EXTRACT FROM O.D.M.-G.S.C. AEROMAGNETIC
MAP 974G, SHOWING FORT HOPE GOLD PROSPECT
Scale 1 inch to 1 mile (1:63,360)
SKETCH PLAN OF SHAFT AREA, FORT HOPE GOLD PROSPECT, SHOWING LOCATIONS OF VEINS, SAMPLES, AND OLD DIAMOND DRILL COLLARS. Scale one inch to 100 feet.
Copy made by Laederer (1938) of surface assay plan, original probably made in 1927.

The scale is stated to have been reduced by an unknown amount, probably to about half.
Porphyry intrusion.
Outcrop veins.
Surface workings.
Underground workings.
Attraction (Troy ounces of gold per ton/feet).

Fig. 6 from O.G.S. Rept. 185, showing composite plan of surface and underground development, Fort Hope Mine, after originals drawn in 1938. California Vein should be 400 ft. further east.
EXPLANATION OF FILTER

FILTERED VALUES

SCALE: 1 inch to 200 feet

LEGEND

FORT HOPE GOLD PROSPECT
DISTRICT OF KENORA (PATTERSON PORTION), ONTARIO

FILTERED VLF-EM RESULTS

INSTRUMENT: Geonics EM-16
OPERATOR: Phil Brown
SURVEY DATES: Oct. 9-16, 1978
TRANSMITTER: NPG Seattle