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REPORT

ON

A PROGRAM OF BACKHOE TRENCHING,

SAMPLING AND GEOLOGICAL MAPPING

ON

THE KENOGAMING TOWNSHIP, ONTARIO

GOLD PROSPECT

OF

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CARL CREEK RESOURCES LTD.

MINING LANDS SECTION

1985

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Toronto, Ontario September, 1985

SUMMARY

A program of backhoe trenching, sampling and geological mapping has been completed on the Kenogaming Township gold prospect of Carl Creek Resources Ltd.

The mapping program has successfully defined the overall geological setting of the Carl Creek property. This is seen to consist of a thick sequence of mainly intermediate, steeply dipping, east-southeast trending pyroclastic rocks encompassing ash tuff through lapilli tuff to tuffbreccia varieties.

The backhoe trenching work on previously defined IP anomalies did not locate any mineralization of significance. IP effects are due to disseminated pyrite in shear zones and magnetite in serpentinite rocks.

Prospecting work in the east side of Akweskwa Lake located some old pits and trenches previously reported to contain gold values. A sample, from a narrow conformable seam of massive pyrite returned 0.157 Au/ton. This zone is considered to represent the extension of the known Dunvegan goldzinc zone on claim 652692 some 600-700 m to the west-northwest.

The above stratigraphic trend is concluded to be the key exploration feature in the property. Further work is recommended to carefully explore the balance of this zone for its gold potential. This is to take the form initially of detailed IP surveying at a cost of \$23,000 followed by diamond drilling as warranted.

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1.0 INTRODUCTION

Exploration interest in the stratiform, pyritic, felsic volcaniclasticsedimentary hosted type of gold deposit has intensified in recent years following the development of relatively large deposits in northwestern Quebec (e.g. Mine Doyon-Lac Minerals) and more recent discoveries in the Hemlo area of Ontario.

This report discusses the results of a field program on a property in the Swayze gold area of northeastern Ontario with potential to host a deposit of this type. The work consisted of geological mapping, backhoe stripping and trenching, blasting and sampling accompanied by selective geochemical sampling and detailed geological investigations of mineralized areas.

The work was completed on behalf of Carl Creek Resources Ltd. of Vancouver, B.C. during July, 1985 by MPH Consulting Limited of Toronto, Ontario.

This report is based on the results of the exploration program completed in July of this year. The exploration approach is described, results are presented and recommendations are made to further explore the property, all in a framework of the geology and previous exploration on the property.

Technical data statements related to the field work are presented in Appendix I to this report.

2.0 LOCATION, ACCESS AND INFRASTRUCTURE

The property is centred 60 km southwest of Timmins in Kenogaming Township, northeastern Ontario (Figure 1).

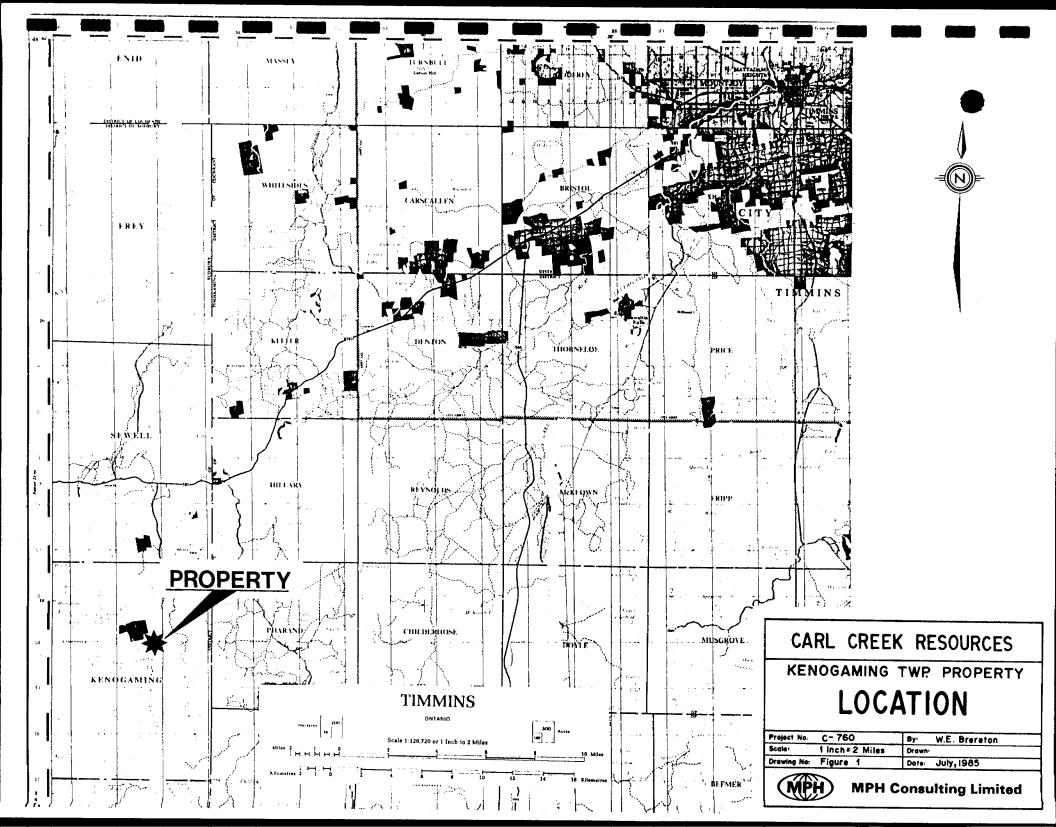
Access to the property is relatively good. New, good quality gravel roads lead from Highway 101 to the south through the general Kenogaming-Penhorwood area. Numerous subsidiary logging roads extend off these main access roads. One of these leads directly past the main Au-Zn showing on the Carl Creek claims approximately 13 km from the highway. Map 1 at rear shows the network of old roads on the property.

The general area is under active development by a local lumber company (Mallette Lumber) which should ensure continued year round access into the area.

The main line of the Canadian National Railway passes 12 km southwest of the property.

The main centre of service and supply in the area is Timmins, with a population of 45,000. All manner of mining equipment, contract services, exploration services, etc. are available here along with a skilled and stable mining work force. The smaller, nearby hamlet of Foleyet offers some food, accommodation and supply services.

Of interest, Orofino Resources Ltd. ultimately plan to construct a mill on their Silk township gold property which might be available to handle ore from other deposits in the immediate area. This is a very attractive consideration for further gold exploration in the north Swayze area. The presence of a nearby custom mill could greatly increase the economic viability of a smaller, otherwise non-economic deposit. The closest custom mills at present are those of Pamour Porcupine Mines Ltd. at Schumacher and Pamour, approximately 85 miles by truck to the east.



3.0 PROPERTY

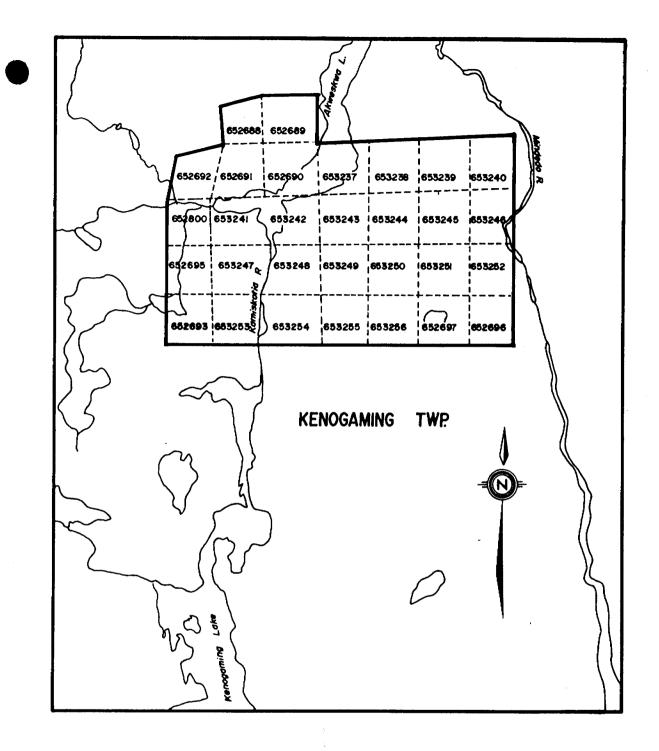
The Carl Creek property comprises 30 claims totalling 1,200 acres more or less in the Porcupine Mining Division of Ontario as follows:

Claim No.	Recording Date
P652688-692	July 16, 1982
P652693	August 13, 1982
P652695-697	August 13, 1982
P652800	August 13, 1982
P653237-256	August 13, 1982

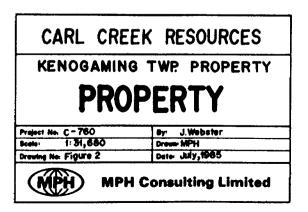
The property, with the exception of claims 652688-692, will be in good standing upon delivery and approval of this report by the Ministry of Natural Resources until August 13, 1986 at which time a further 40 days of assessment credits per claim is due. The above 5 claims encompassing the key showing area will be due July 16, 1987 at which time a further 60 days credit per claim, more or less, is required.

The amount of assessment work credits claimed and copies of the appropriate forms can be found in Appendix I.

Figure 2 presents the disposition of the claim group.







4.0 HISTORY AND PREVIOUS WORK

4.1 General

Initial interest in the general Swayze region was stimulated by the discovery of two major iron formation bands along the Groundhog River and Woman River in the early 1900's. Following a general waning of interest in iron deposits, gold became the principal metal sought.

Earliest gold discoveries date back to 1909 as prospectors worked westward from the Porcupine Camp which had been discovered that same year.

The first significant gold discovery in the present area and subsequent staking rush was made in 1918 on the east shore of Horwood Lake. This became the property of Groundhog Gold Mines Limited in 1934.

Visible gold was discovered on what is now the property of Orofino Resources Limited in the early 1930's. This precipitated another small rush into the region.

Numerous other properties were being actively explored and developed in the Horwood Lake area at this time. The only production during this period was in 1938-39 from the Smith-Thorne (Tionaga) Mine.

Gold was then discovered in 1946 on the Joburke property in Keith Township immediately to the north of Orofino triggering another staking rush in the northern portion of the Swayze metasedimentarymetavolcanic belt.

Approximately 980,000 tons of gold-silver ore have been mined to date from 7 deposits within the Swayze area (Joburke, Jerome, Tionaga, Kingbridge-Gomak, Halcrow Swayze, Young-Shannon and Lawrence). Other substantial gold prospects under active exploration/development in addition to Orofino Mine include the Rockwell prospect of Kidd Resources Ltd. in Chester township, the Jerome Mine of Muscocho Explorations Ltd. in Osway township, the Rundle Mine of Sulpetro Minerals-Labrador Mining in Newton township and the Kenty Mine of Heron Resources Ltd. in Swayze township.

Figure 3 presents the generalized geology of, and gold occurrences in, the Swayze area.

4.2 Previous Work

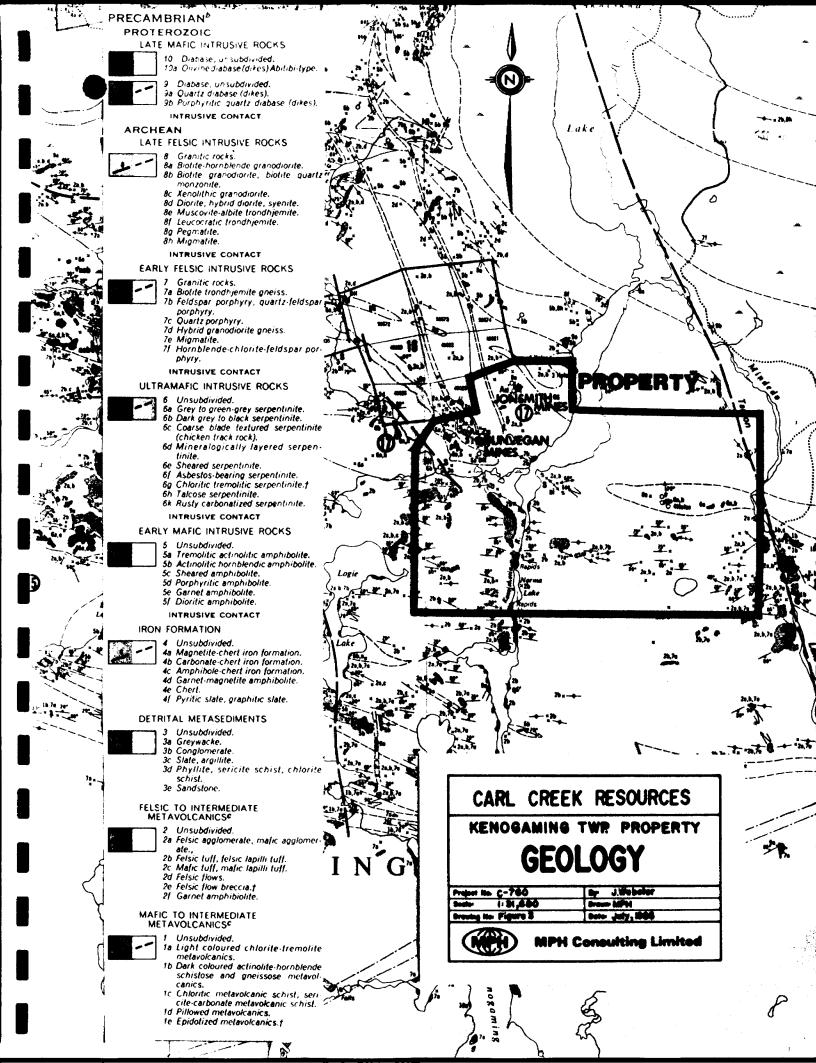
The present property encompasses the old Dunvegan Mines-Jonsmith Mines gold + zinc occurrences.

The early history of the property is summarized by Darke (1983). The latter author reports that gold was first discovered in the area now encompassed by the present property in 1947 by a prospector working for <u>Hoodoo Lake Mines</u>. Subsequent prospecting, trenching and sampling was concentrated on five of their claims where gold discoveries had been made. The following quotes are excerpts taken from a report dated February 3, 1948 by G.W. Moore, Mining Engineer (Timmins Assessment Work File T-527):

"As a result of this work many small gold bearing shear zones were found but so far there is only one that shows values that have economic interest.

The main belt of tuff and agglomerate in which the gold-bearing zones occur strikes roughly at N55W and dips steeply to the northeast. The fragments in the agglomerates are elongated along the strike of foliation. This tuff and agglomerate is highly silicified throughout. The strike of the gold bearing shear zones seems to conform with the general strike length of the tuff.

The tuff and agglomerate are usually slightly mineralized with fine pyrite which become quite heavy in parts, especially in the narrow gold bearing shear zones and in trenches No. 7 to 12 in the area west of the main gold discovery. Considerable



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heavy pyrite also occurs in scattered bunches east of Akweskwa Lake.

A large quartz vein about 150 feet wide was examined. This occurs about 600 feet south of the gold-bearing belt of tuff and agglomerate and is close to the west shore of Akweskwa Lake. Although this vein is barren looking and a grab sample taken from it ran only 0.01 oz in gold, the vein is considered to be of interest from a structural standpoint. So far it has been difficult to trace the vein along its strike because of low swampy ground to the west and Akweskwa Lake to the east. The strike of the vein is apparently parallel to the general strike of the rocks.

The gold discoveries made to date have been confined to narrow, well pyritized shear zones in the tuff and agglomerate. Gold is readily panned from those shear zones, usually after burning pieces of the rock. In the case of the main gold discovery which is located on claim No. S-49029, heavy tails of gold have been panned from surface rust while high assays have also been obtained from channel samples in different places along the strike. The shear is about two feet wide and the rock section has been traced so far for about seventeen feet in length. Late this fall Elieff dug up some rich specimens of free gold out of this shear that further increased interest in it and in the property. Further trenching showed the presence of still more free gold. This seems to occur in concentrations along narrow seams in the shear zone. The high gold samples also carry considerable silver, about 25% as much as of gold.

The trenching done on the east side of Akweskwa Lake has uncovered still more narrow gold bearing shear zones with the gold content being generally a little higher than further west. That is with the exception of the main rich shear zone.

Geological conditions seem generally favourable to the deposition of the gold ore with the area on the east side of Akweskwa Lake showing the most signs on rock disturbance. Drag folds are more common here than further west."

<u>Note</u>: The main gold-zinc showing on former claim S-49029 referred to by Moore is located on claim 652692 of the present Carl Creek property.

In 1950 the name of Hoodoo Lake Mines was changed to Dunvegan Mines. During the summer of 1951, the <u>Canadian Johns-Manville</u> Company sent a party of prospectors into the area to investigate a belt of serpentine rocks (magnetic highs) that extend in an east-west direction through Kenogaming Township and the present property. The possibility of finding asbestos led to renewed staking by Dunvegan, Canadian Johns-Manville, and others.

In 1951, old trenches in the Dunvegan gold-zinc showing area were deepened and new trenches excavated; all were sampled for zinc, gold and silver. Results were as follows (OMNR file T-527, Timmins): Sample locations are shown on Figure 4 in a previous MPH report on the property (Brereton, 1983).

SAMPLE NO.	SAMPLING WIDTH IN FEET	AU IN OUNCES PER TON	AG IN OUNCES PER TON	ZN PERCENT
4081	12	0.01	Nil	_
4082	25	Nil	N11	0.17
4083	8	Nil	Nil	0.14
4084	15	Nil	N11	0.14
4085	10	Ni1	0.16	0.42
4086	20	Nil	0.20	0.19
4087	8	Nil	Nil	0.84
4088	10	Nil	Nil	0.24
4089	7	N11	Nil	3.19
4090	1	N11	Nil	0.21
4091	2	N11	N11	12.33
4092	10	N11	N11	0.79
4093	20	N11	0.40	0.39
4094	20	N11	Nil	0.49
4095	5	Nil	Nil	0.54
4096	4	0.24	0.20	0.24
4097	6	0.02	N11	1.04
4098	5	Nil	Nil	0.34

In 1953, <u>Norduna Mines</u> (Falconbridge Nickel) optioned 135 claims from Dunvegan Mines and undertook an exploratory search for nickel deposits associated with the extensive belt of altered ultramafics (serpentinite). After completing approximately 5,000 ft of diamond drilling, Norduna patented nine claims covering the main nickel occurrences (disseminated pentlandite) and allowed the remainder to lapse.

Darke (1983) further reports that in 1957, <u>Dunvegan</u> re-staked some of the lapsed claims, and undertook additional exploration on two separate serpentinite zones. They drilled six holes in the area located a few hundred feet south of the original Hoodoo Lake Mines gold-zinc showing and four holes east of Akweskwa Lake on current Claim No. 653245. No commercial mineralization was encountered in the drill holes. Dunvegan subsequently became inactive in the area and their claims lapsed.

In 1960, Jonsmith Mines Ltd. staked 12 claims covering the Dunvegan gold-zinc showing and undertook exploration in this general area. They reportedly drilled three short holes (packsack drill) to test a gold occurrence located 1,800 ft northeast of the main gold-zinc showing. Each hole was just over 100 ft long and the total strike length of the tuffaceous zone tested was approximately 100 feet The principal rock intersected in the holes was sericitized only. tuff cut by thin veins of lightly pyritized quartz. Gold mineralization was reportedly associated with the heavier pyrite mineralization; the highest gold values were obtained where chalcopyrite and galena were present in addition to the pyrite. The best intersections were in drillhole No. 1 where a 5-foot intersection reportedly assayed 0.92 oz gold per ton followed by another 5-foot section that reportedly assayed 0.16 oz gold per ton. That is, the 10-foot section from 65-75 feet averaged 0.54 oz gold per ton. It appears as if the remainder of the hole from 75-102 ft was not assayed even though the drill log states that it intersected the same favourable

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sericitized tuff host rock with scattered pyrite and some quartz vein material.

Two other sections intersected near the beginning of the hole are also reported to contain gold values, a 5-foot section assayed 0.06 oz Au/ton, and a 5.6 foot section assayed 0.04 oz Au/ton. Two holes drilled on either side of Hole No. 1 intersected only minor gold values with the best intersection being three feet that averaged 0.07 oz Au/ton. Because of their locations however, there is considerable doubt that these latter two short drillholes actually intersected any possible strike extension of the 10-foot goldbearing zone reported in Hole No. 1.

In 1966, <u>Falconbridge Nickel Mines</u> optioned part of the Jonsmith claim group including the area encompassing the Dunvegan gold-zinc showing. Falconbridge drilled eight holes to test this zone along an 800-foot strike length. Thin sphalerite stringers were cut in hole No's 3, 7 and 8 and disseminated pyrite sections in all holes. In DDH #7, one 3.7-ft section assayed 1.21% Zn, 0.51 oz Ag and 0.03oz Au per ton; and another 5.2 ft section assayed 1.03% Zn, 0.55 oz Ag and 0.01 oz Au per ton. The best gold assay was a 3.3 ft section near the bottom of hole 4 which returned 0.08 oz Au per ton. The location of these holes is presented in Figure 4 (Brereton, 1983).

Falconbridge also completed ground magnetic, horizontal loop electromagnetic, and self-potential surveys over six of the Jonsmith claims as well as their own adjacent claims. No worthwhile electromagnetic anomalies were detected. The magnetometer survey clearly outlined the ultramafic intrusive bodies as areas of magnetic highs. Falconbridge subsequently drilled a number of holes at scattered points throughout the claim group to test magnetic highs associated with ultramafic intrusives. Disseminated sulphide zones with associated nickel values were found at a number of locations; however, no economic deposits were found. In 1971, <u>International Norvalie Mines Limited</u> drilled 3 holes in the area of the reported Jonsmith gold occurrence (TMNR file 2.765). The Jonsmith values could not be repeated. Comments by M. Ogden, P.Eng. in the above file are as follows:

"Holes 3, 5 and 6

Were drilled to try and relocate the good gold intersection of old hole No. 1 which was drilled in September of 1960. An intersection of 0.92 ounces of gold was encountered at that time at 65 feet in the hole. Such values could not be repeated.

Holes 1 and 2 showed that the formations dip to the southwest and the geophysics showed a southeast strike. Hence, 3, 5 and 6 were drilled to the northeast to cut the strata at right angles. The holes were only 30 feet apart, yet it was very difficult to correlate one hole with the next. The black banding at 93 feet in No. 3 seens to be the same zone as at 15 feet in No. 6, but no quartz veining.

The gold seems to occur in an erratic manner within very short quartz veins. The most economical method of exploration is probably to bulldoze large areas of possible mineralization,, clear them of overburden, wash the rock clean, then map, sample and assay the veins."

<u>Texasgulf Ltd.</u> staked the gold-zinc zone in 1978 and carried out magnetic, VLF-EM and horizontal loop EM surveys on 100 metre, northsouth lines. As established by the previous Falconbridge survey, there is no horizontal loop response over the main zones (OMNR File T-2000, Timmins). There is no record of any drilling by Texagulf.

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Donit Exploration Services carried out a new VLF-EM survey over the 5 claims covering the known showings in July of 1983. The work outlined two relatively strong VLF responses (conductors "A" and "B") and numerous weaker responses. This is no obvious VLF response over the gold-zinc zone although the data are relatively active in the showing area and some conductive-like responses here may actually be representative of the pyrite mineralization or associated shearing. IP surveys were recommended by the author of the Donit report.

The <u>Carl Creek Resources - Bearcat Explorations</u> joint venture carried out a program of backhoe stripping, trenching, sampling and mapping on 5 claims in the Dunvegan-Jonsmith showing area in late 1983 (Brereton, 1983).

Extensive backhoe work and rock trenching in the area of the reported Jonsmith gold intersections failed to locate any surface expression of the gold zone although local $Cu \pm Pb$ (\pm quartz, epidote, potash, feldspar, calcite) vein and alteration zones were discovered in the indicated area.

Mapping, backhoe and rock trenching and sampling on the old Dunvegan Au-Zn showing area disclosed a corridor of sheared, sericitized, pyritized tuffaceous rocks containing numerous individual zones of siliceous pyrite mineralization up to 3 m in width. Values of up to 0.08 oz Au per ton were obtained in 1983 sampling. Local zones of stringer sphalerite mineralization were disclosed. The overall mineralized tuffaceous zone appeared to be at least 50 m in width and, if mineralization on the east side of Akweskwa Lake is correlative as was expected, may be in excess of 1,200 m in length. Although no "ore grade" assay results were obtained, several of the pyrite lenses were distinctly anomalous geochemically in gold. Also, some of the siliceous material within pyrite zones appeared to be of primary chert origin. In all, a favourable volcanogenic environment for gold was indicated only a relatively small portion of which had ever been examined (e.g. Falconbridge drilling).

The joint venture subsequently carried out IP surveys in the showing area in the spring of 1984 (Hardy and Associates, April 1984) in which a number of IP anomalous zones were identified.

5.0 REGIONAL GEOLOGY AND MINERALIZATION

5.1 Geology

The Swayze area represents the western extremity of the Abitibi metasedimentary-metavolcanic ("greenstone") belt of Archean age which extends for several hundred miles east-northeast to the Grenville Front east of Chibougamau.

Swayze greenstone rocks are truncated to the west against the "Kapuskasing High" stuctural-metamorphic zone.

Of interest, the Abitibi is probably the most prolific metal producer of any greenstone belt in the world.

The present area of interest, the Kenogaming-Penhorwood area, encompasses the northeasternmost extremity of the Swayze greenstone subbelt.

The present property occurs within a discrete, lenticular pile of felsic metavolcanic rocks approximately 13 km long in an east-west direction by 6.5 km wide in the central portion of Kenogaming Township and east-central portion of Penhorwood Township (Ontario Department of Mines Map 2231). The main felsic pile is bounded to the east by the Tanton Lake Fault although a narrow wedge of felsic rocks does extend to the east into adjoining Pharand Township. Rock types include mainly felsic volcaniclastic rocks (tuffs, tuffbreccias) along with some flows and sediments. The volcanics are extensively intruded by mafic to ultramafic rocks, primarily amphibolites and serpentinites. A major sulphide-oxide iron formation extends virtually around the entire felsic pile and forms the contact with adjoining mafic metavolcanics. Granitic batholith complexes occur to the east and south. Previous Figure 3 illustrates the geology of the immediate property area (ODM Map 2231).

5.2 Mineralization

Economic interest in the Swayze area has focussed on gold, silver, asbestos, talc, copper-nickel, iron, copper-zinc and barite deposits. There has been economic production of the first four of the above mineral commodities. Gold and silver have been won primarily from structurally-controlled, quartz vein-type deposits, e.g. Joburke mine, Keith Township, which produced 66,500 ounces of gold from 1973 to 1979. Asbestos and, lately, talc are produced at the Reeves Mine of Canadian Johns-Manville in Reeves Township 14 km northwest of the present property.

5.2.1 Types of Gold Occurrences

The most important types of gold occurrences to date in Swayze area may be classified as:

- (a) Auriferous quartz veins and zones + py, cpy, po, etc. in mafic-intermediate intrusive rocks (Orofino Mine, Lefever Prospect).
- (b) Gold-bearing quartz stockworks, stringers and veins <u>+</u> py, cpy, po in sheared, faulted and fractured zones in mafic to intermediate volcanic rocks (e.g. Joburke Mine).
- (c) Gold-bearing quartz veins + py, po, cpy, gn, Mo, etc. associated with porphyry intrusives.
 - (i) in porphyry Rundle No. 1 Mine, Hardiman Bay, Horwood Lake occurrences
 - (11) at porphyry contacts (with sheared metasediments- Jerome Mine)

- (iii) cutting porphyry and mafic to felsic lavas -Tionaga Mine, Kenty Mine
- (d) Green carbonate zones <u>+</u> quartz, fuschite, pyrite, gold
 (Quinterra discovery, Greenlaw township).
- (e) Stratiform pyrite zones in sheared felsic pyroclastics and volcaniclastics without significant quartz veining (present property, Kenogaming township).
- (f) Quartz pods, veins and lenses with gold, py, cp, po in sheared, sulphide-bearing mafic tuffs (Gifford Prospect Horwood Township).

6.0 EXPLORATION PROGRAM - 1985

6.1 Personnel

The following MPH Consulting Limited personnel were involved with the exploration program:

Geological Consultant- W.E. Brereton, M.Sc.(A), P.Eng.Chief Geologist- J.L. Webster, B.Sc.Prospector/Trenching technician - G. Sinclair, B.A.

The exploration program was completed during the period July 9 to 21, 1985.

6.2 Field Operations

6.2.1 General

The field program consisted of reconnaissance geological mapping on 25 claims and backhoe stripping/trenching, blasting and sampling accompanied by detailed geology and selective geochemical sampling on the remaining 5 claims in the showing area.

The backhoe work was designed specifically to test a number of IP anomalies detected by the 1984 Hardy surveying. It was hoped that these might represent further mineralization of a similar nature to the Dunvegan occurrence.

6.2.2 Geological Mapping

The property was geologically and topographically mapped at a scale of 1:5,000 utilizing airphotos for control. The property was covered by east-west traverses at approximately 120 m intervals, as well as along any roads on the claims and by canoe along the shoreline of Akweskwa Lake. Predominant rock types in outcrop areas were recorded along with structural data in the form of strikes and dips etc. The geological results and interpretation are presented on Map 1 at rear.

6.2.3 Geochemical Sampling

A total of 60 samples of "B" horizon soils was collected in the area of the old Jonsmith "showing" and across several of the IP anomalies. These were submitted to Swastika Laboratories Ltd. for Au analysis.

The soil profile was well to moderately developed. Samples were taken from the "B" horizon at an average of about 200 cm depth. Approximately 150 grams of material was collected at each 20 m station by grub hoe and scoop and transferred to kraft paper bags.

Laboratory preparation of the samples included oven drying of the collected material at 180° C followed by sieving of the material to -80 mesh.

Analyses for Au were performed by atomic absorption analysis after MIBK solvent extraction of 10 grams of sample material.

Certificates for all analyses are presented in Appendix II at the end of the report.

6.2.4 Backhoe Trenching and Sampling

The trenching and stripping was performed by Leo Alarie & Sons Ltd. of Timmins, Ontario utilizing a Cat 225 backhoe with a $1\frac{1}{4}$ yard bucket.

All trenches were manually mucked and then washed down with a high pressure pump and fire hose after which the trenches were mapped in detail. Any mineralized zones so disclosed were blasted and sampled.

6.2.5 Prospecting

Some time was spent by the field crew in prospecting for and sampling an old gold showing on claim 653242. Once found, the old pits and trenches were mapped in detail and sampled.

7.0 EXPLORATION RESULTS

7.1 Property Geology

7.1.1 General

The Carl Creek property is underlain by an east-west trending, steeply dipping sequence of interbedded pyroclastic rocks comprising ash tuffs, lapilli tuffs and tuff-breccias. Compositionally, the pyroclastics range from mafic to felsic varieties, however, the rocks are predominantly of intermediate composition.

An east-west shear foliation is pervasive throughout the property area, the most obvious manifestation being an elongation/alignment of fragments in the lapilli tuffs and tuffbreccias.

Intrusive into the pyroclastics are ultramafic-serpentinite bodies, granitic dykes and small plugs and diabase dykes.

7.1.2 Lithologies

The following rock types were recognized in the course of field work:

- 2. Intermediate-felsic pyroclastic rocks
 - (a) ash tuff, lapilli tuff
 - (b) tuff breccia same mafic components
- 5. Amphibolite
- 6. Serpentinite
- 7. Feldspar + quartz porphyry
- 8. Granodiorite
- 9. Diabase

Most of the property is underlain by <u>intermediate to felsic</u> <u>pyroclastics</u>. The finer ash tuff varieties have a greenish buff weathering surface and are often well laminated. They are green to dark green, very fine-grained to fine-grained and are generally schistose and strongly chloritic.

The lapilli tuffs consist of buff felsic volcanic and feldspar porphyry fragments and green mafic fragments in a light green-grey, fine-grained chloritic matrix. Fragments range in size from 4 mm to 30 mm, and are typically elongate parallel to schistosity.

Pyroclastic fragments in tuff-breccias range up to coarse blocks averaging 15 cm or more. The larger fragments are typically felsic in composition weathering a characteristic bone white colour. Finer fragments are green to dark green and have a more mafic composition. Both fragment types exhibit a pronounced elongation parallel to the prominant foliation and are set in any combination of mafic to felsic matrix. There appears to have been some flowage of tuffaceous matrix around fragments during development of regional foliation.

The coarser pyroclastics occassionally occur intimately intermixed with the ash and lapilli tuffs within the same outcrop. Both varieites are often cut by fine quartz (\pm carbonate) stringers occassionally containing 1-2% disseminated pyrite.

A large intrusive body of <u>serpentinite</u>, elongate parallel to regional foliation, is exposed in the east-central portion of the property. The rock is generally non-foliated, well jointed and has a characteristic greenish-brown weathering surface. The fresh colour of serpentinite ranges from black to light grey-green. It may be fine to medium-grained and generally has an equigranular or honeycomb texture. A disseminated magnetite content gives rise to airborne magnetic and ground IP chargeability anomalies.

<u>Siliceous intrusive rocks</u> are common in the felsic-intermediate pyroclastics. These include feldspar <u>+</u> quartz porphyry and granodiorite varieties generally occurring as intrusive dykes with a pink to light grey weathering surface. On a fresh surface the rock is light green-grey to pink in colour, medium-grained with either a crystalline or porphyritic texture.

Late <u>diabase dykes</u> often containing 1-2 cm epidote clots cross cut all other rock types.

7.1.3 Structure

Rock units on the property are generally east-west striking and dip steeply to the north. There is no evidence of major fold closures on the property, however, some small scale drag folds plunging 45° to the northwest were mapped.

The rocks in general are well foliated to schistose, locally strongly sheared and/or intensely deformed. Small scale deformations, possibly reflecting regional trends, are best illustrated by quartz stringers, that have been folded, fractured, boudinaged and crenulated during shear deformations in the area.

There is a pronounced north-northwest fault set on the property offsetting earlier east-west shearing. One such fault trends along the Mindedo River (Tanton Lake Fault) on the east side of the property.

7.2 Trenching, Mineralization and Sampling

7.2.1 General

Work consisted of extensive backhoe stripping, washing, blasting and sampling in an attempt to locate the surface expression of several IP chargeability targets outlined by Hardy & Associates in April of 1984. An old gold showing on the east shore of Akweskwa Lake on trend with the main Dunvegan showing was also located, sampled and mapped in detail.

The following is a summary of the July 1985 trenching/sampling program.

7.2.2 Trench No. 1, IP Anomaly 3

A 10 m wide, 65 m long trench was excavated coincident with IP chargeability anomaly No. 3. Bedrock was encountered approximately 3 m below surface.

Some mineralization was encountered during trenching which was blasted and sampled. This consisted predominantly of 2-7% pyrite, as fine-grained disseminations and small blebs, and minor amounts of chalcopyrite in sheared intermediate tuff-breccia. Mineralization is associated with altered shear zones containing quartz \pm carbonate stringers, epidote, hematite, sericite and chlorite.

Sampling locations and analytical values are shown on Map 3 along with the trenching patterns and geological information.

Samples taken across the mineralized shear zones returned nil gold values.

The observed disseminated sulphide is sufficient to account for the IP effect here.

7.2.3 Trench No. 2, IP Anomaly 5

An 8 m wide, 35 m long trench was excavated at the western extremity of IP chargeability anomaly No. 5. Test pits attempted on the IP zone proper had to be abandoned due to overburden conditions in this water-saturated swampy area. Minor rock was obtained from one pit immediately east of the road before the pit filled in with water.

Sampling locations and analytical values are shown on Map 4 along with the trenching patterns and geological information.

No mineralization of any significance was encountered in the intermediate pyroclastics uncovered in the west trench. Some mineralization, similar to that sampled in trench No. 1, was uncovered in the pit just east of the road. This consisted of 2-3% pyrite associated with a silicified shear zone containing quartz \pm carbonate stringers, hematite and chlorite in an intermediate tuff-breccia.

A grab sample of the mineralization returned nil gold values.

It was not possible to thoroughly evaluate this IP zone although what work was carried out was not encouraging.

7.2.4 Trench No. 3, IP Anomaly 6A

A 15 m wide, 125 m long trench was excavated over IP chargeability anomaly No. 6A.

Sampling locations and analytical values are shown on Map 5 along with the trenching pattern and geological information.

Mineralization was encountered in a variety of lithological

- 27 -

environments, the most predominant being a fine-grained massive serpentinite body. Strong northwest shearing was present throughout the trench as were fine quartz \pm carbonate stringers.

Mineralization in the serpentinite consisted of 1-2% sporadic pyrite associated with rusty shear zones and 2-5% finegrained magnetite disseminations resulting in the anomalous chargeability zone.

Some mineralization was also encountered and sampled in both intermediate tuff-breccia and granodiorite. This consists of 2-3% py as fine-grained disseminations and small blebs associated with shearing, quartz <u>+</u> carbonate stringers, hematite and chlorite.

Grab samples of interesting mineralization returned nil gold values in all cases.

7.2.5 Pit No. 1

A sparsely mineralized, north-striking quartz vein 10-20 cm wide cutting a small granodiorite outcrop at 7+50E, 5+40N was mechanically stripped and sampled for gold.

Mineralization consisted of sporadic pyrite blebs in the quartz vein-breccia with minor amounts of chalcopyrite. The granodiorite was also mineralized with 2-3% medium-grained pyrite disseminations.

Both the quartz vein-breccia material and the granodiorite were sampled with each returned nil gold values (Map 6).

7.2.6 Lake Showing, Claim 653242

Prospecting efforts uncovered an old showing on the east side of Akweskwa Lake inferred to be within the east-southeast continuation of the Dunvegan trend. A pit and two trenches, all variably filled in and old packsack drill core were discovered at the site.

The best mineralization encountered consisted of a stratiform, 5 cm thick massive pyrite seam within silicified intermediate lapilli tuff and tuff-breccia. The host rocks are also mineralized with up to 5% pyrite disseminations and small blebs. The rocks have been intensely deformed, sheared and drag folding with the latter plunging 45° to the northwest.

A grab sample taken of the pyrite seam returned 0.157 oz Au/ton. Samples taken of the surrounding wall rock assayed trace gold.

Sampling locations and analytical values are shown on Map 7 along with detail geological information.

7.2.7 Soil Geochemistry

There were no values of any interest in the soil geochemical results.

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8.0 CONCLUSIONS AND RECOMMENDATIONS

The geological mapping and prospecting and additional detailed trenching and sampling work in the northwest portion of the property has re-affirmed that the Main or Dunvegan gold-zinc trend remains the key exploration feature on the property. There has been no encouragement at all in the area of the reported Jonsmith gold occurrence and no further efforts are warranted here.

The value of 0.157 oz Au/ton from the narrow massive pyrite seam on the east shore of Akweskwa Lake is inferred to be from the east-southeast continuation of the surface Dunvegan zone on claim 652692. This is very significant in that it confirms the gold-enriched nature of this overall stratigraphic trend. It also suggests that the balance of the zone has good exploration potential and should be subjected to further detailed investigations.

A program of detailed Induced Polarization surveying should be carried out to carefully map the Dunvegan gold-zinc trend on claims 652691, 652692, 653241 and 653242.

The IP surveying should be done with a dipole-dipole array utilizing an "a" spacing of 40 m and reading n=1 through 4. Minor detailed surveying at a = 20 m might be advisable on some lines to better define anomalies of interest.

Recommended IP coverage totals approximately 8 km as follows:

Line	From	To
3+00E	3+40N	3+40S
4+00E	2+80N	3+40s
5+00E	2+80N	4+40s

Line	From	To
*6+00E	1+80N	7+40s
*7+00E	1+40N	7+40s
8+00E	1+40N	7+80S
9+00E	1+40N	7+40s
10+00E	2+4 ON	7+40S
11+00E	0+00	7+40S
12+00E	0+00	7+80S

* Will also investigate large quartz vein zone on claim 653241.

Approximately 10 km of additional linecutting will have to be carried out to effect this coverage.

The proposed budget for this work is as follows:

Linecutting	10 km @ \$210	\$ 2,100
IP surveying and deta	15,000	
(including mob-demo	ob)	
Reporting, drafting,	reproduction, government filings	4,000
Contingency		1,900

TOTAL \$23,000

The IP surveying will have to be carried out in the winter given the presence of Akweskwa Lake in the middle of the survey area.

Further recommendations in the form of diamond drilling will be contingent on the results of the above work relative to our exploration models

for the property.

Respectfully submitted, Ø

W.E. Brereton, P.Eng.

J. Webster, B.Sc.

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APPENDIX I

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Technical Data Statement

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GEOPHYSICAL -- GEOLOGICAL -- GEOCHEMICAL TECHNICAL DATA STATEMENT

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.

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Type of Survey(s)				
Township or Arca Kenogaming Twp.				
Claim Holder(s) Ingamar Explorations Ltd.	MINING CLAIMS TRAVERSED List numerically			
Cedar Hill, Ontario				
Survey Company MPH Consulting Limited	P 652693			
Author of ReportW.E. Brereton	(prefix) (number) , 652695			
Address of Author 2406-120 Adelaide St. W, Toronto M5H 1T1 "	652696			
Covering Dates of Survey 09/07/85 to 21/07/85 (linecutting to office)				
Total Miles of Line Cut <u>Nil</u>	652697			
	. 652800			
, SPECIAL PROVISIONS CREDITS REQUESTED Combusing Per claim	653237 ^			
Geophysical	653238			
ENTER 40 days (includesElectromagnetic	653239			
line cutting) for firstMagnetometer surveyRadiometric	653240			
ENTER 20 days for each -Other	••••••			
additional survey using Geological 20	653241			
same grid. Geochemical	653242			
AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)	653243			
Magnetometer Electromagnetic Radiometric	653244			
DATE: Sept. 6, 1985 SIGNATURE:	653245			
Author of Report or Agent	653246			
Res. GeolQualifications21310	653247			
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MINING CLAIMS TRAVERSED (continued)

Prefix	Number
Р	653254
Р	653255
Р	653256
Subtotal	3
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TOTAL CLAIMS	25

APPENDIX II

Analytical Results

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SWASTIKA LABORATORIES LIMITED

P.O. BOX 10, SWASTIKA, ONTARIO POK 1T0 TELEPHONE: (705) 642-3244 ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No60607			Date:	
Received July 22, 1985	16	Samples of	ore	
Submitted by M.P.H. Consulti	ng Ltd., Toror	nto,Ontario		
proj#C-760	Att: W. Bre	eret.on	per: G. Sinclair	
	SAMPLE NO.	GOLD PPB		
	0C-85-26A	Nil		
	26B	Nil		
	26C	Nil		
	30	Nil		
	31A second pulp	5970 6170 4870 4590		
	31B	30		
	31C	30		
	32A	60		
	32B	40		
	33	Nil		
	36A	Nil		
	36B	Nil	· · ·	
	38	Nil		
	39	Nil		
	40	Nil-Ni	1	
	41	Nil		

Per.

G. Lebel, Manager

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SWASTIKA LABORATORIES LIMITE

P.O. BOX 10, SWASTIKA, ONTARIO POK 1TO TELEPHONE: (705) 642-3244 ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 60644 Date: <u>July 31, 1985</u>

Received July 22, 1985 60 Samples of soils

Submitted by _____M.P.H. Consulting Ltd., Toronto, Ontario_____per: G. Sinclair_____proj#C-760

SAMPLE NO.	GOLD PPB	SAMPLE NO.	GOLD PPB	SAMPLE NO.	GOLD PPB
CC-S-1	5	CC-S-19	Nil	CC-S-40	Nil
	15	20	Nil	41 *	Nil
2	Nil	21	5	41 *	Nil
3	Nil	22	Nil	43	Nil
4	Nil	23	Nil	44	Nil
5	Nil	24	Nil	45	Nil
6	Nil	25	Nil	46	Nil
7	Nil	26	Nil	40	Nil
8	5	27	Nil	48	Nil
	Nil				
9	Nil	28	Nil	49	10
10	Nil	29	5 20	50	Nil
11	Nil	30	Nil	51	Nil
12	Nil	31	Nil	52	Nil
13	Nil	31	Nil	53	Nil
14	Nil			54	Nil
15	Nil	33	Nil	55	10
16	15	34	Nil	56	Nil
	5	35	Nil	57	Nil
17	10	36	Nil	58	Nil
	20	37	5	59	Nil
18	Nil	38	Nil	60	Nil
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NOTE: *two numbers the same

Canadian Testing

G. Lebel, Manager

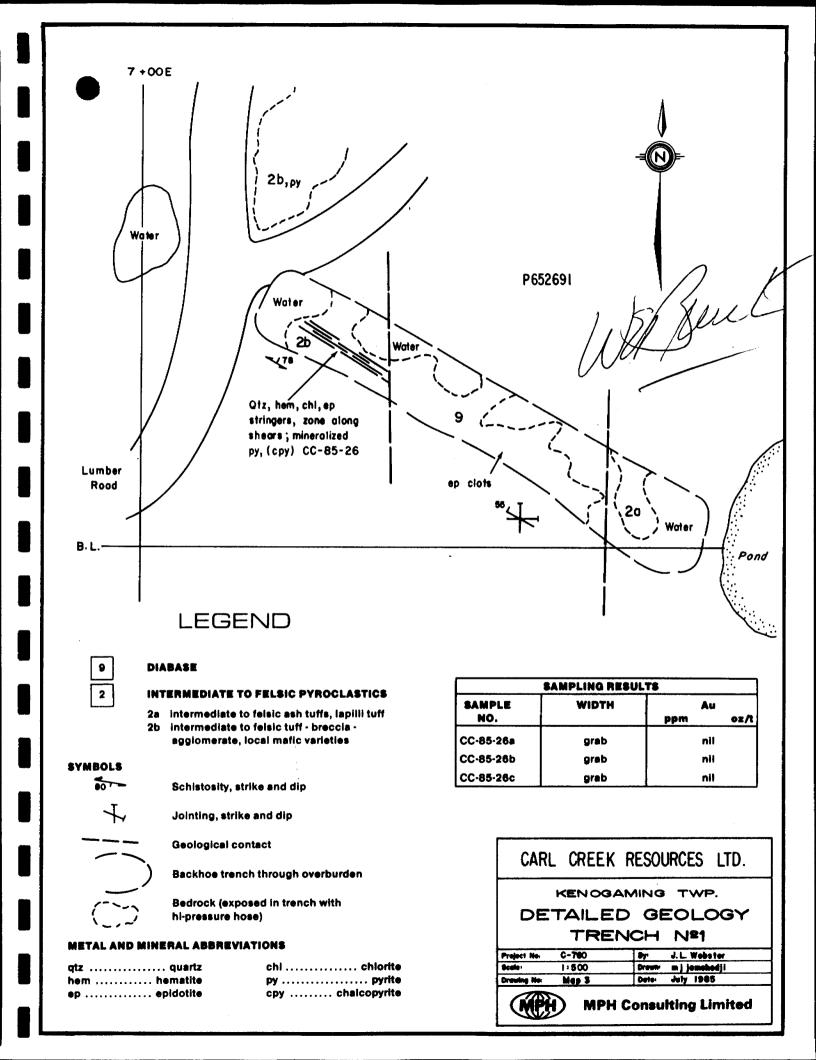
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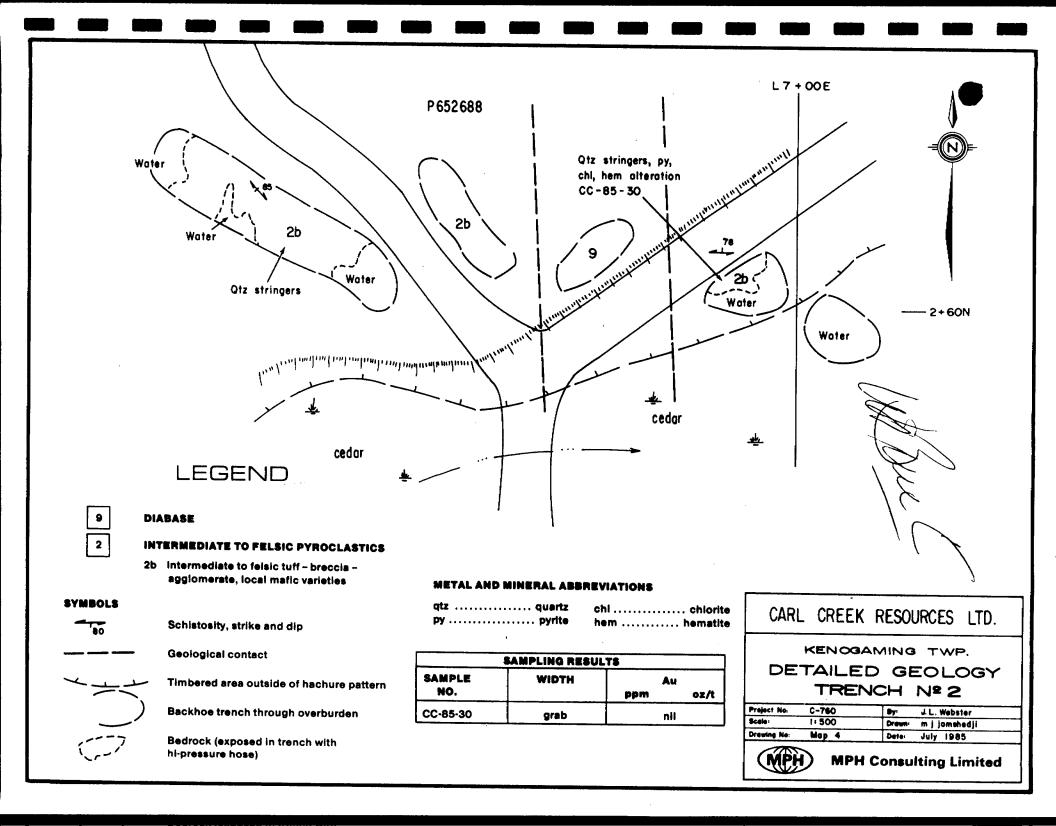
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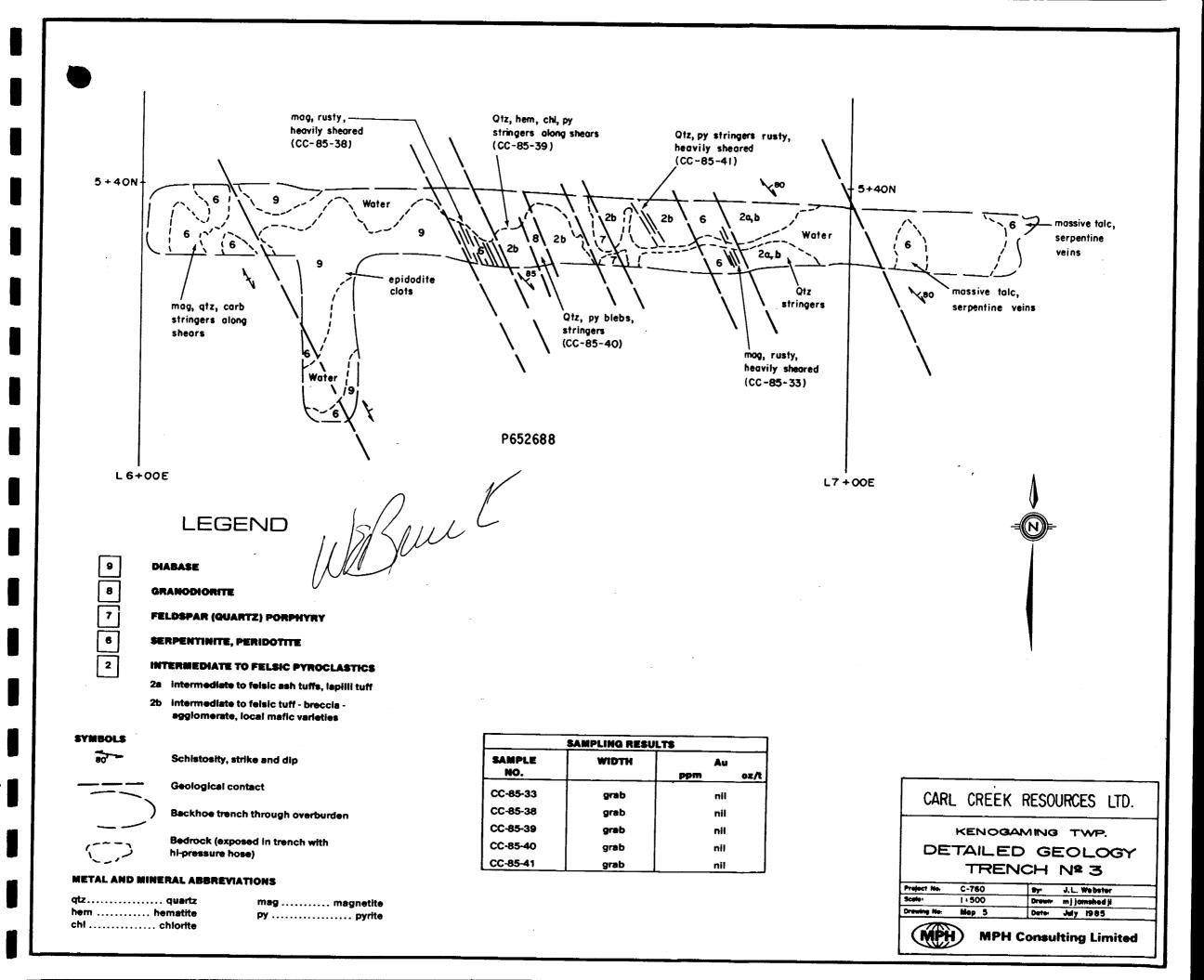
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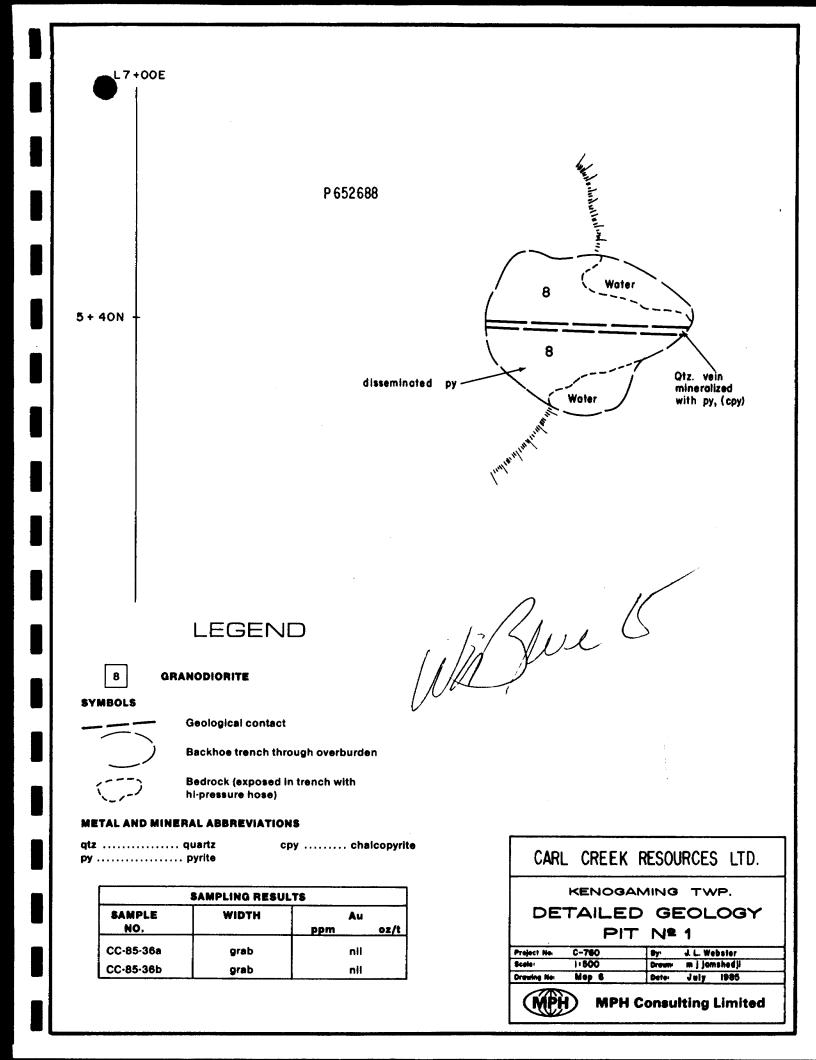
APPENDIX III

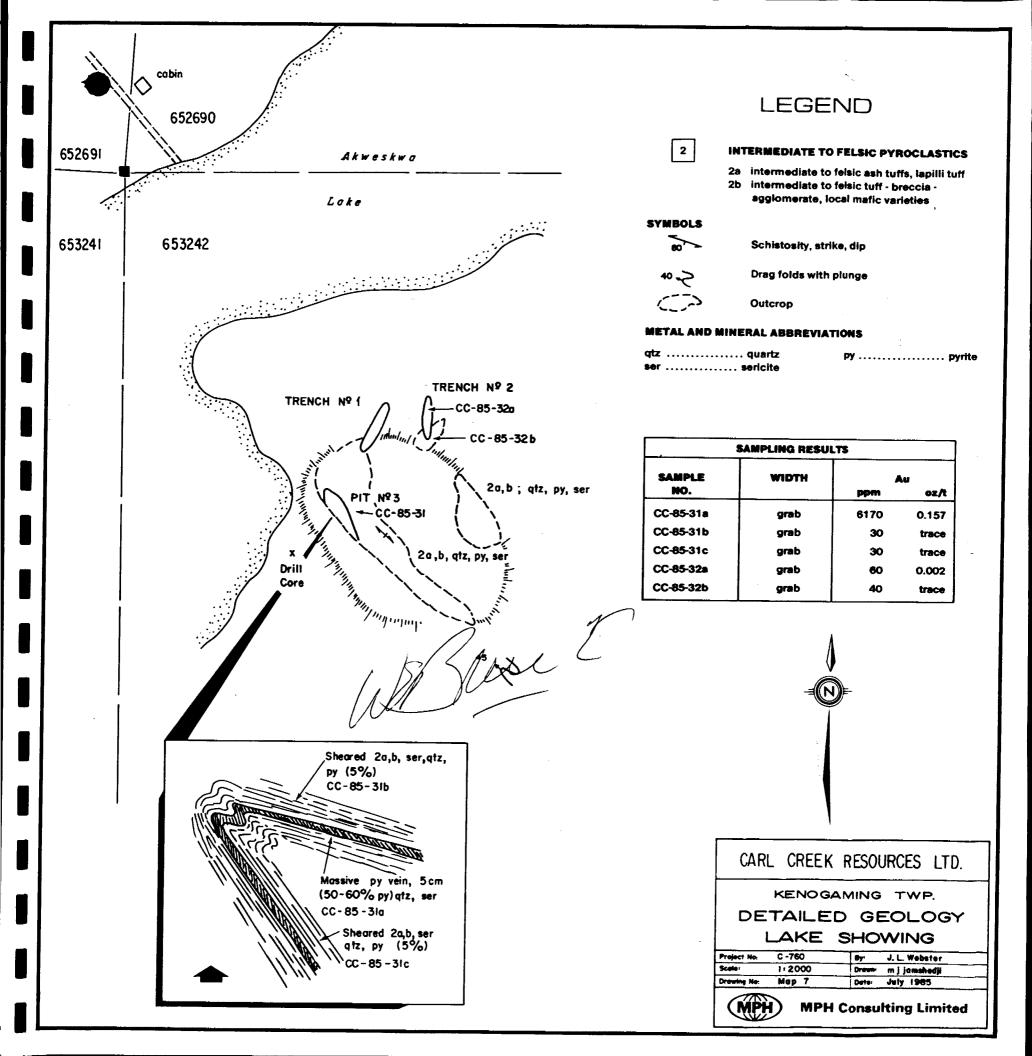
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Mining Lands Section Control Sheet

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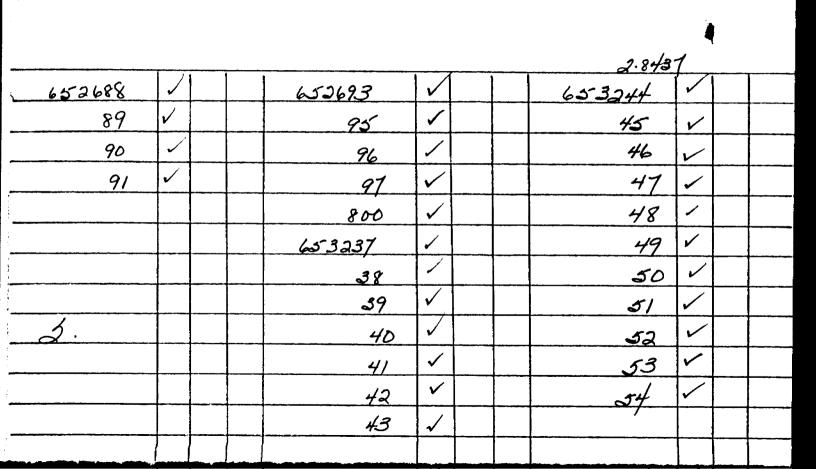
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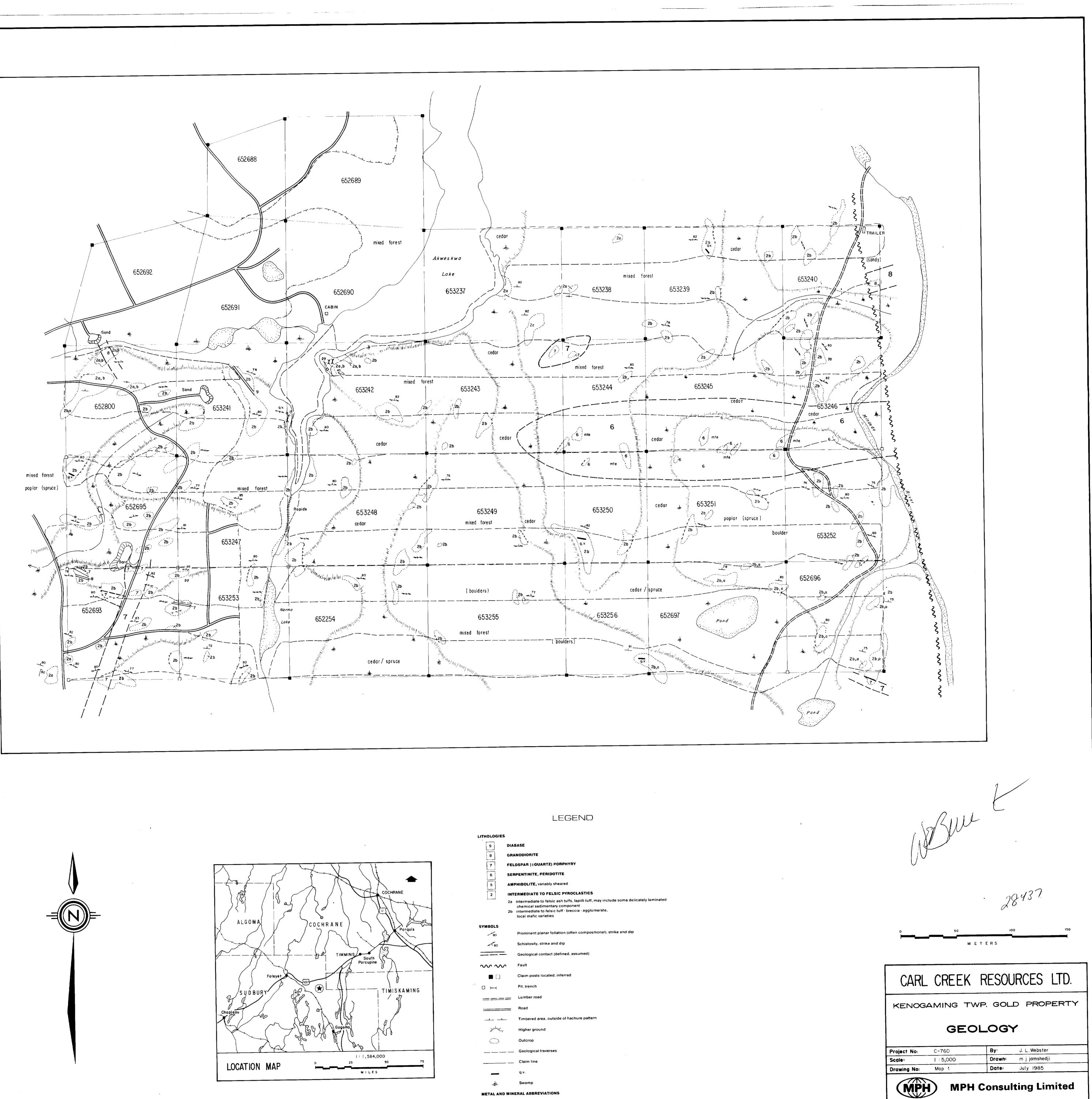
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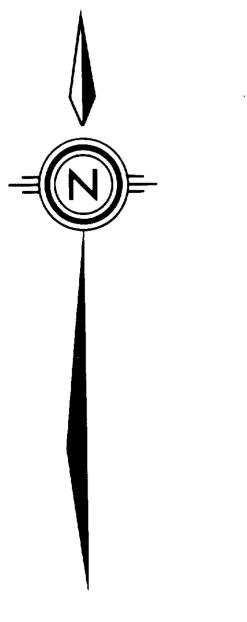
Signature of Assessor

Sept 30/85

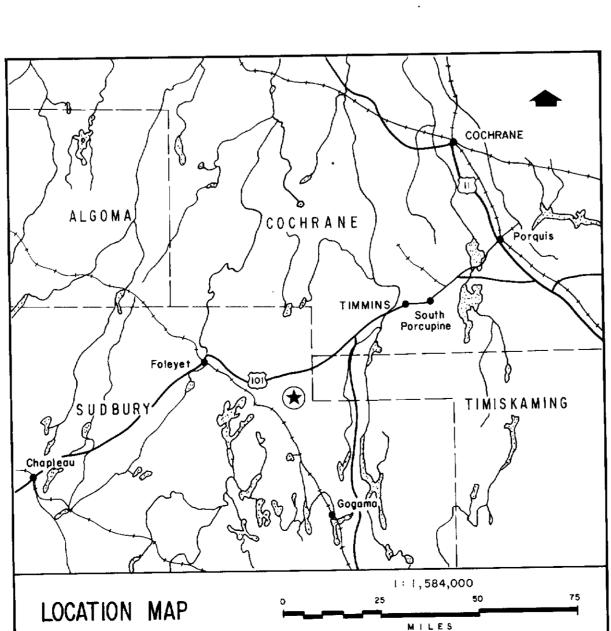
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METAL AND MINERAL ABBREVIATIONS q.v. quartz vein .. magnatite mte pyrite ру....

